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ENGLISH FOR MECHANICAL ENGINEERING STUDENTS: GEAR UP

Trabajo final de investigación aplicada sometido a la consideración de la Comisión del Programa de Estudios de Posgrado en Enseñanza del Inglés como Lengua Extranjera para optar al grado y título de Maestría Profesional en Enseñanza del Inglés como Lengua Extranjera

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Dedicatoria

The greatest enemy of knowledge is not ignorance, it is the illusion of knowledge.

Stephen Hawking

The pursuit of knowledge was the fuel that powered this graduation project.

Delightfully, we were not alone in this journey.

Agradecimientos

We would like to thank and dedicate this project to the people who walked with us down this wonderful path:

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Our families, who patiently sacrificed time and who made our project theirs.

And to our alma mater, which restlessly and bravely keeps searching for the light.

"Este trabajo final de investigación aplicada fue aceptado por la Comisión del *Programa de* Estudios de Posgrado en Enseñanza del Inglés como Lengua Extranjera de la Universidad de Costa Rica, como requisito parcial para optar al grado y título de Maestría Profesional en Enseñanza del Inglés como Lengua Extranjera."

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Resumen

Este proyecto de investigación tiene como propósito determinar el impacto que el enfoque basado en tareas (TBLT, por su sigla en inglés) tuvo en la utilización del vocabulario en inglés con fines específicos (ESP por sus siglas en inglés) y las estructuras gramaticales por parte de los estudiantes. Este curso se diseñó para un grupo de 11 estudiantes de la carrera de Bachillerato y Licenciatura en Ingeniería Mecánica de la Universidad de Costa Rica, los cuales externaron sus necesidades, carencias y preferencias académicas con respecto a su nivel de inglés por medio de un análisis de necesidades, el cual se dio en una etapa inicial del proyecto. Para reunir la información necesaria para diseñar, implementar y evaluar este proyecto de investigación de métodos mixtos, los investigadores recolectaron información cuantitativa y cualitativa por dos semestres, al utilizar entrevistas formales e informales con estudiantes y depositarios, cuestionarios, un examen de diagnóstico del idioma inglés, realimentación brindada por observadores y evaluadores del curso; así como las mismas notas de los investigadores. Los resultados demuestran que el impacto del enfoque basado en tareas no solo repercutió positivamente en el uso del vocabulario para fines específicos y en las estructuras gramaticales utilizadas por los estudiantes, sino también ayudó a que los estudiantes se mostraran menos nerviosos a la hora de hacer evaluaciones y se sintieran más preparados para realizar estas tareas en contextos reales al haber participado en simulaciones dentro de la clase.

Palabras clave: enfoque basado en tareas, inglés con propósitos específicos, evaluación de idiomas, aprendizaje de vocabulario.

Abstract

This research project aims at determining the impact that the Task-Based Language Teaching (TBLT) approach had on students' use of English for Specific Purposes (ESP) vocabulary and grammar structures. The course was designed for a group of 11 Mechanical Engineering students at the University of Costa Rica, who expressed their needs, lacks, and wants in a needs analysis stage. To gather the necessary data for designing, implementing, and evaluating this mixed-methods research project, the researchers collected both qualitative and quantitative data for two semesters, through formal and informal interviews with students and stakeholders, questionnaires, a language diagnostic test, feedback sessions with course observers and evaluators, and the researchers' notes on students' performance. The results show that the impact of the TBLT approach not only had a remarkably positive effect on the students' use of ESP vocabulary and grammar structures but also helped them feel less nervous when being assessed and more prepared to do tasks in real life after participating in in-class simulations.

Keywords: Task-Based Language Teaching, English for Specific Purposes, language assessment, vocabulary learning.

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ACTFL: American Council on the Teaching of Foreign Languages

CEFR: Common European Framework of Reference for Languages

EAP: English for Academic Purposes

EOP: English for Occupational Purposes

ESP: English for Specific Purposes

DT: Diagnostic Test

L: Listening

ME: Mechanical Engineering

NCSSFL: National Council for State Supervisors for Languages

R: Reading

S: Speaking

Ss: Students

St: Student

TBLT: Task-Based Learning Teaching

Tr: Teacher

Trs: Teachers

UCR: Universidad de Costa Rica

W: Writing

In the last few decades, the non-stop technological innovations have sped up life's pace in general. Language teaching has changed as well, and the field of English for Specific Purposes (ESP) has met the need of providing particular populations with customized language courses that are designed to meet their needs, wants, and lacks, no matter how innovative or challenging these new fields might be. The *Master's in Teaching English as a Foreign Language* program at the University of Costa Rica (UCR) establishes as a requisite for graduation the creation, implementation, and evaluation of an ESP course during the second year of the program. The objective behind this is two-fold. On the one hand, it gives teachers in training the opportunity to conduct a needs analysis study to later design a course, specifically suited for the needs of a specific student population. On the other hand, UCR students are given the chance of taking an English course that focuses on their immediate or delayed needs, which can be regarded as a very attractive feature especially for young adults who have limited time to learn a second language. The population for this course design will be Mechanical Engineering students from Bachelor and Licentiate degree from the University of Costa Rica.

In this document, we present three main chapters. Chapter I deals with the needs analysis conducted at the beginning of the process. This initial chapter describes specific features of the ESP population, the students' English proficiency levels, as well as an analysis of their needs, wants, and lacks. Chapter II develops the rationale behind the course syllabus designed. More specifically, it details the course description, the goals to be achieved, and the methodology and assessment criteria to be used. Finally, Chapter III has to do with the course evaluation report, which aims at determining the impact of authentic tasks in students' use of ESP vocabulary and grammar structures.

Chapter I: Needs Analysis

A. Procedures and instruments

1. Interview with the stakeholders

The course design process started by getting to know the stakeholders, in this case, the Director of the Mechanical Engineering School and the president of the Mechanical Engineering Students' Association. The communication with the Director has been limited to emails. The president of the Students' Association agreed on a virtual interview with the three student-teachers and he has been very effective on answering inquiries by email. He has also provided very important information about what the expectations for the course are, students' academic needs, and the characteristics of the work market that mechanical engineering students will eventually face. (See Appendix A).

2. Initial questionnaire for learners

An informative initial email was sent to the list of learners that the School of Mechanical Engineering provided. The email contained a brief description of the course, and it included a link to an online questionnaire. This questionnaire included items about personal information, learning preferences, proficiency perception, current academic needs and future work needs. The email was sent to 52 students but only 31 of them completed the initial questionnaire (See Appendix B). As the students were not required to take this course as part of their curriculum, the School of Mechanical Engineering did not ask them to participate mandatorily once the initial list was sent.

3. Diagnostic Test

Once the initial information was collected, a second email was sent in order to convene the students to a Diagnostic Test (DT). The DT (See Appendix C) was applied at the language laboratories in the School of Modern Languages, and the

learners were given three schedule options to take it. The DT had four parts: reading, listening, writing and speaking. The DT invitation was sent to 31 students out of which 28 took the written test. The speaking component was evaluated through an individual conversation with one of the student-teachers via Skype. The learners were given the student-teachers' contact information and were contacted via Skype or phone on the scheduled date. Each learner talked with one of the student-teachers for about 15 to 20 minutes. Out of the 28 learners that took the written DT, only 20 contacted the student-teachers and completed the speaking part of the test.

B. General description of the program and field of work

The School of Mechanical Engineering at the UCR was established in 1964 after the administration made the decision to separate the program from the electromechanical program. According to the Mechanical Engineering School's website, the creation of the mechanical engineering program emerged in response to the country's need for specialized engineers. The mission of the School of Mechanical Engineering is "to be recognized, on a national and regional level, as a producer of professionals in the area of mechanical engineering with high moral values, knowledge, and an investigative talent to promote technological, industrial, economic, and cultural development" (para. 1)[1]. The vision of the university with respect to the program's graduates runs in the same vein. A graduate of the program is expected to be "a high performing professional able to produce recognized knowledge in Costa Rica and Central America" (para. 2)[2]. The vision goes on to explain that the graduate will have "outstanding self-management skills along with the ability to work in interdisciplinary teams" (para. 2).[3]

Mechanical engineering students embark on a rigorous five-year journey to achieve the standard previously mentioned. In order to graduate, students must complete a total of 173 credits. The program's outline consists of courses related

[1] Own translation
[2] *Idem*
[3] *Idem*

to chemistry, physics, calculus, mechanics, technical drawing, and thermodynamics. In addition to these courses, students must also fulfil the university's general courses requirement (Ingeniería Mecánica, n.d.).

The university's mission and vision mentioned in the previous section provide an insight into the roles and expectations for the mechanical engineer. The methodology used by the university is one of group work and projects. This reflects real life scenarios that engineers find themselves in on a day to day basis. Engineers are always tasked with identifying and resolving problems as a team. An interview with Diego Morales, a service engineer with Nutricare S.A., provided some insight into what engineers do and how they work in conjunction with others.

Morales spoke on his experience working in the biomedical industry and described his day to day duties as being filled with dialogues, reports, requests, and of course repair and construction. When Morales said that dialogue was a main part of his day, he was referring to the conversations that engineers have with other engineers, users, technicians, and medical personnel. According to him, these dialogues are an integral part of solving problems because they allow engineers to first identify what is wrong. He pointed out that a good engineer knows how to talk and explain things to any audience. This goes back to the UCR's vision to prepare its mechanical engineers to work in interdisciplinary teams. Morales also went on to describe how he had to write reports for every case that he attended to. He stated that these reports served as evidence of advancements in projects and contracts for quarterly meetings with his superiors.

Morales elaborated on the importance of reports and their role in the process of requesting parts. He claimed that if his company did not have the necessary parts in stock, he would have to write emails to request replacements. In situations in which Morales had to order replacement parts, he said that the inclusion of a justification was essential for accounting purposes to show transparency to his company and its clients. Morales's account reveals that the duties and responsibilities of an engineer extend further than implementing theory. According to him, an engineer's ability to be a team player is also extremely critical.

C. Interests of primary stakeholders

Alejandro Jimenez, president of the Mechanical Engineering Students' Association, shed some light on what the university's expectations were of an English course designed for mechanical engineering students. After getting general information about the major and what it encompasses, Jimenez explained that the mechanical engineering program does not ask much of students with respect to their productive skills in English. However, from time to time students are required to use their receptive skills to gather information presented in English. He stated that professors recommend readings that complement the theories being studied, and students also have to listen to video tutorials in English to see these theories come to life. Jimenez further iterated that most of the software information and instructions are in English, suggesting that students need to possess the ability to read and understand this genre of writing.

Jimenez offered some insight into students' expectations after graduating in the field of mechanical engineering. He explained that most graduates aspire to work for industrial companies, and because of mechanical engineering's close relationship to biomedical engineering, students explore the opportunities of potentially working with the production of medical equipment. He stated that popular employers ranged from RECOPE to Boston Scientific and many more related to the Zona Franca in Costa Rica. Although Jimenez himself is still a student, he was able to provide some potential situations in which mechanical engineers would have to use English in occupational settings.

With respect to reading and writing in English, he stated that mechanical engineering jobs consist of e-mail correspondence, reading and creation of software, and reading and creation of designs. For speaking and listening, he mentioned situations such as conferences, listening to and defending design proposals, and job interviews.

D. Group Profile

1. Students' educational background

The group consists of 31 mechanical engineering students currently enrolled at UCR. A large percentage of the population, 68% to be exact, are between the ages of 21 and 26. A 58% majority of this population is in its second or third year of the mechanical engineering program as seen in Figure 1.

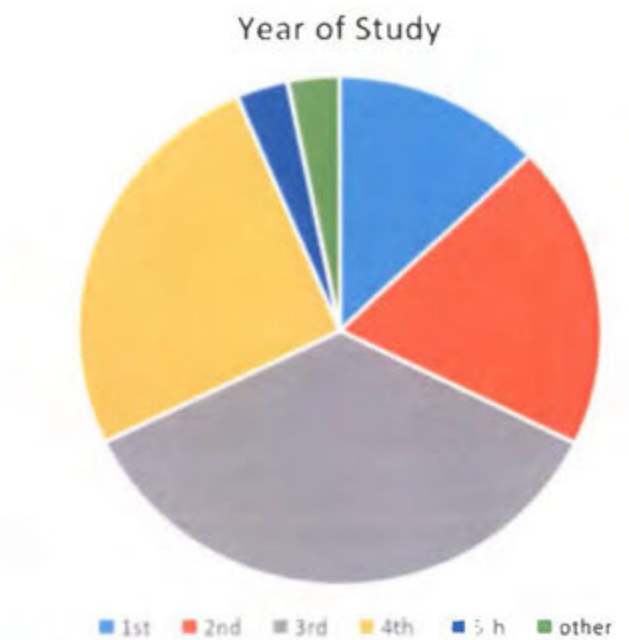

Figure 1: Students' enrollment according to year of study.

2. Description of the students' needs

The needs for this population are clearly differentiated between academic and occupational. In their academic life, mechanical engineering students are sometimes asked to manage receptive skills: reading and listening. There was no evidence that these students need productive skills like speaking or writing. Due to UCR's regulations, none of the materials in a foreign language can be evaluated; therefore, not all teachers use materials in English.

Once the students graduate and join the working force, the situation changes drastically. Costa Rica has particular economic, political, and social conditions that make the country very attractive for foreign investment. Most potential employers for the mechanical engineering students are international companies which use English as a *lingua franca*. Moreover, coworkers, business partners, and possible clients are also international and use English as their official language. Occupationally, these students will be required to speak and write in English very often. This represents a design challenge as there seems to be a divorce between their academic and occupational needs. Mechanical engineering students do not ignore this reality and their perceived needs focus on future work-related needs as shown in Figure 2.

Figure 2: Perceived needs by mechanical engineering students.

This figure illustrates the percentage of students that indicated the above tasks as important. When asked openly which three activities would require students to use English the most—without giving them any prompt—, they replied in a fashion in which certain categories reflected common needs and interests, as shown in Figure 2. Consequently, this information was considered of paramount importance for the student-teachers when designing the goals and the contents of the course.

3. Description of the students' wants

Most students are aware of their future occupational needs in English and they want to improve their proficiency level. According to the initial questionnaire, most students would like to work on their speaking and writing skills. For instance, 87% of the population believes that speaking will be extremely necessary in their future work environment, and 77% considers that writing will be extremely necessary as well. More than 85% of the students mentioned varied ways of oral communication in English with supervisors, colleagues, or coworkers when asked for three activities that they will perform in their future work place. As part of their highlighted preferences, 71% of students stated that they would like to work in pairs or groups and the same percentage would like to be asked to write in class. Also, 84% would like to participate in class orally. Open class discussions (64%) and reading in class (68%) were also mentioned by students.

Regarding the topics that students would like to cover in an ESP course, they could choose from several options which were taken out their major syllabus. Students mentioned mechanical design (93%), electro mechanics (77%) and fluid mechanics (77%) as the top three. When asked about their course expectations, specifically what they would like to learn, more than 80% of the students expressed that they would like to learn more technical vocabulary; more than 70% indicated that they would expect to improve their speaking skills, and approximately 40% explicitly mentioned that they would like to be able to explain the functioning of a machine.

4. Description of the students' lacks

As mentioned before, the syllabus for the Bachelor's and Licentiate Mechanical Engineering degree at UCR does not include any English course throughout the entire major. This is a very significant lack since the work market for these students seems to require English as a foreign language most of the times. Moreover, the students' previous training in English as a foreign language may vary considerably from subject to subject.

The lack of English training in the Costa Rican public educational system has been explored by the media since it represents one of the main complaints from employers (Brenes, 2012). Newspaper *El Financiero* has published several articles exploring the fact that the lack of English as a second language can make a difference between getting a well-paid job or not. The Commercial Director of Manpower Group commented for the newspaper: "Costa Rica has made important efforts to increase the technical training [...] but it's being left behind in English coverage" (Montero, 2015, para. 6)[4]. Mechanical engineering students are well aware of this reality. They were asked to categorize the four macro skills on a difficulty scale, including *very difficult, difficult, easy* and *very easy*. For 61% of them, speaking is *difficult*. For 48% of the students, writing and listening were also described as *difficult*. When talking to the students before applying the DT, they also shared some personal anecdotes with each student teacher. They mostly talked about how their lack of English knowledge would have an impact on their professional lives since they felt that they would not be able to find a good job if they continued using the basic English knowledge they had from high school years, which supports Montero's claim.

E. Diagnostic Test

The diagnostic test (DT) consisted of two parts, one written section and one oral section. The listening, reading, and writing macro skills were assessed in the written section, which in total accounted for 47% of students' final grade. The students were given one hour and a half to finish this part of the test (See Appendix C).

The student-teachers began the diagnostic test with the listening section. The listening component included three exercises: two receptive response items (true-false and multiple choice) and one productive response item (short response)[5]. Each exercise had 5 points for a total of 15 points in this section. Two authentic

[4] Own translation
[5] Item format description taken from Brown, H.D. (2004). *Language assessment: Principles and classroom practices*. White Plains, NY: Pearson Education

videos and one authentic audio were played twice. The objectives in this section were:

a. To show general understanding of aural texts and videos in English.
b. To identify specific details in the videos and audio in order to choose the correct option.
c. To convey meaning despite authentic communication obstacles (wind turbine noise).
d. To show understanding of specific cultural expressions.
e. To report information in written form after listening to an audio.

The students had to listen and identify specific details in all items in order to choose the correct option given or to answer by writing short sentences. The three exercises and the corresponding items were strategically placed in an order from easier to more difficult to help students to build some confidence from the beginning of the test.

Once this section was concluded, the learners were instructed to continue with the reading section, without the help of dictionaries or computers. The reading section consisted of four receptive response exercises (two true-false and two multiple choice). The first two exercises had three points, the third one four points and the fourth one five points, for a total of 15 points for this section. The objectives in this section were:

a. To distinguish between literal and implied meaning.
b. To show understanding of instructions for a mechanical engineering related competition.
c. To extract the main requirements from a job posting.
d. To show understanding of written descriptions of a diagram.

Finally, the writing section consisted of one productive response item: writing an e-mail. The constructs taken into consideration were task completion, content, and structures. The objectives in this section were:

a. To write an e-mail using appropriate writing conventions.
b. To show command of vocabulary related to alternative energy.

c To show command of structures and vocabulary used to describe mechanisms.

d To discuss advantages and disadvantages of a proposal for a new alternative energy storage system.

The second part of the diagnostic test was mostly conducted over Skype. As some students could not install the program or reported to have connection problems, some of the interviews were conducted over the phone. This part of the test consisted of a conversation with one of the student-teachers to assess the speaking macro skill. Out of the students who took the written test, 87% contacted the student-teachers for the oral section. The other 13% students were contacted via e-mail, but the researchers obtained no answers. This interview consisted of three warm-up questions and a role-play situation. Following Coombe, Folse, and Hubbley's (2007) recommendations, the student-teachers designed an interview in which they would allow time for a warm-up, which would probably improve results, as it helps to put students at ease (p. 129), to get to know the students better, and to obtain some data on students' general oral proficiency. At the end of the conversation, there was one productive response item: the ESP-focused role-play situation. The student-teachers had the chance to choose amongst one of the three different role-play situations to assess each student. The role-play situation to be performed was selected by the student-teacher based on the students' areas of interest, brought up in the warm-up questions. The constructs taken into consideration were task completion, grammar, pronunciation, vocabulary, and fluency. The objectives in this section were:

a. To describe what technical drawings are, the materials, and steps required for making one.

b. To explain the importance of technical drawings.

c To show command of technical language to talk about technical drawings with manufacturing and operations employees at an international company.

d To describe how wind turbines work and to justify if they can/can't be built at home to people who do not know the technical language of the field.

e To participate in a job interview successfully by explaining how refrigerant gasses work and how to oversee the manufacturing of air conditioning systems.

To identify whether the students are beginners, intermediate, or advanced, the student-teachers included in each block of items different proficiency indicators for each major macro skill, adapting as guides the NCSSFL-ACFTL Can-Do Statements (American Council, 2015) and the ACTFL Oral Proficiency Interview Tester Training Manual (American Council, 2012). The student-teachers determined that the ACFTL proficiency guidelines would help them achieve this task better as "unlike the ACTFFL Proficiency Guidelines, the CEFR was not intended to serve as a framework for assessment [while]... the [ACTFL] guidelines are intended to be used for global assessment in academic and workplace settings" (American Council, 2012, p. ii).

The items incorporated proficiency indicators that ranged from Novice to Advanced, using an organization principle for ordering the block of items known as facility ordering, as described by Genesee and Upshur (1996, p. 205). For this reason, the receptive skills were placed first in the diagnostic test, starting with listening and continuing with reading. As explained by the authors, the objective was to help students settle down and boost their confidence by placing first those blocks and items that might yield the best performance at the beginning, leaving for last those that might yield the poorest level of performance (1996, p. 204). Consequently, the writing block was placed at the end of the test.

More specifically, Table 1 summarizes each language proficiency indicator per block of items.

Table 1

Language proficiency indicators per block of items.

Place of block in the Diagnostic Test	Macro Skill	Language proficiency indicator
1	**Listening**	a. To understand isolated words that have been memorized, particularly when accompanied by gestures or pictures. b. To understand simple information when presented with pictures and graphs. c. To understand the main idea of an oral text for personal enjoyment. d. To follow simple oral stories, recorded books, summaries, or short excerpts from speeches. e To understand the main idea and many details of descriptions or interviews. f. To understand accounts of events. g. To understand various viewpoints in arguments.
2	**Reading**	a. To recognize words, phrases, and characters with the help of visuals. b To understand basic familiar information from an ad. c. To identify specific details. d. To understand some information on job postings. e. To follow directions for assembling a model.

		f. To understand the details of an article about an event. g. To make inferences. h. To understand a technical report within my field.
3	**Writing**	a. To write a series of steps needed to complete a task, such as for an experiment. b. To write about activities participated in. c. To write short reports about something learned or researched. d. To use target language and culture conventions for formal purposes. e. To write while speculating on outcomes or implications of an issue.
4	**Speaking**	a. To communicate on some very familiar topics, using single words and phrases practiced and memorized. b. To handle short social interactions in everyday situations. c. To describe people, places, and things. d. To exchange information about subjects of personal interest. e. To give instructions. f. To participate in interviews. g. To exchange complex information about academic and professional tasks.

Source: Adapted from NCSSFL-ACFTL Can-Do Statements (American Council, 2015)

1. Organization of the test

As mentioned before, the ordering of the sections in the DT is meant to smoothly guide students from receptive skills (listening and reading) to productive ones (writing and speaking), starting with the easiest items and ending with the most challenging ones. As for the ordering of the items within each block, the student-teachers organized the items for the receptive skills following what is defined by Genesee and Upshur as random ordering, which suggests that after placing "the initial easy items, [testers should] put the remainder in random order" (1996, p. 205). This type of organizing principle was chosen because if students "see that relatively easy items can follow more difficult ones, they remain engaged and alert until the end" (1996, p. 206). For the productive skills, the facility ordering procedure was used. The rationale behind this choice is that the student-teachers "wanted students to have maximum opportunity to try the items that they should do best on" (Genesee & Upshur, 1996, p. 205). Consequently, the language proficiency indicators for the productive skills in Table 1 reflect the order in which the items within these two last blocks were placed.

2. Types of rubrics used for assessing speaking and writing

To assess the writing component of the DT, the student-teachers opted for an analytic rubric. O'Malley and Valdez Pierce (1996) explain that "analytic scales separate the features of a composition into components that are each scored separately" (p. 144). This type of rubric was chosen because of its advantages. Perkins asserts that analytic rubrics help instructors provide feedback to students on specific aspects of their writing and it gives teachers diagnostic information for planning instruction (as cited in O'Malley & Valdez Pierce, 1996, p. 144). The rubric was designed by the student-teachers, and it intended to assess three main components: task, content, and structure.

For the first descriptor, the objective was to assess the number of questions answered concisely and effectively by the student. Four questions were asked as part of the task. The first question was addressed to assess a novice language

proficiency indicator: describing a simple process. The second question was addressed to assess an intermediate language proficiency indicator: explaining what has been done in a project. Finally, the third and the fourth questions addressed two advanced language proficiency indicators: discussing both advantages and disadvantages. As these language descriptors represent different language proficiency levels, the idea was to assess how many of these were developed in each student's response. The objective for the second descriptor was to assess how well the students understood the prompts and how thoroughly they developed their answers. Finally, the third descriptor was included to assess language production elements, such as the correct use of verb tenses. As these features were elements the student-teachers needed to assess to have a better understanding of the students' current proficiency levels, the analytic scoring rubric presented them with specific information on each student's both strong and weak areas when writing.

To assess the speaking section of the diagnostic exam, the student-teachers also used an analytic rubric to assess the performance of the students during the interview. The student-teachers decided to base the score of the oral component on students' performance during the role-play, as Hughes states that "the activities or tasks should elicit performance that provides a valid picture of your students' abilities and can be scored reliably (as cited in O'Malley & Valdez Pierce, 1996, p. 58). The student-teachers decided to assess the following descriptors: task completion, grammar, pronunciation, vocabulary, and fluency, taking as a reference the assessment speaking rubric proposed by Folse (2006, p. 222). The only descriptor that is not included in Folse's rubric is task completion. The student-teachers made the decision of adding this descriptor to determine which students could successfully use English for specific purposes under controlled circumstances, such as providing a solution for an engineering problem.

3. Types of parameters used for assessing reading and listening

As previously stated, the assessment of the reading section was based on four receptive response exercises. Genesee and Upshur's facility ordering procedure

used in the other sections of the DT was also implemented for the reading exercises; however, the items for each reading comprehension text were ordered randomly (Genesee & Upshur, 1996). The NCSSFL-ACTFL Can-Do Statements were used as the parameters for assessing the reading comprehension section. The first reading comprehension text targeted the novice reader and consisted of a diagram showing the conventional suspension of a vehicle. For this text, the mechanical engineering students had to combine the use of visual clues with their knowledge of basic prepositions to successfully answer the items. One of the descriptors for NCSSFL-ACFTL Can-Do Statements defines a novice reader as one who "can recognize words, phrases, and characters with the help of visuals" (American Council, 2015, p. 34). The first reading comprehension text was tailored to this can-do statement. Given that the diagnostic overall rating created by the student-teachers outlined a beginner reader as one who obtained between zero to five points—out the entire set of reading exercises—, the first reading text contained only three multiple-choice items in an attempt to restrict actual beginners to their respective category.

The second reading comprehension text was an authentic job posting. This text intended to push the students into intermediate low territory as outlined by NCSSFL-ACFTL Can-Do Statements, which state that intermediate low readers "can identify some information from news media" (American Council, 2015, p. 35). The job posting included qualifications and requirements, and students had to state whether the items for this text were true, false, or not indicated. The not indicated option was included to make guessing correctly more difficult and to identify if students could infer meaning from what they were given. The second reading comprehension text contained three items as well. Since the diagnostic overall rating for reading defined an intermediate reader as one who could score between six to nine points, the number of items chosen for the second text gave intermediate low readers the opportunity to be included in the intermediate category by scoring all six questions after the first two texts.

The third reading comprehension text followed the pattern of increasing difficulty and moved students toward the intermediate high level. The authentic text

was taken from course materials from a mechanical engineering course at the University of Southern California. Students had to read a text that provided instructions on how to participate in a boat race. The text was selected to satisfy the NCSSF-ACTFL Can-Do statement that defines an intermediate high reader as one who "can follow simple directions to do an experiment in science class" (American Council, 2015, p. 36). The text contained technical language, recommendations, and warnings. Students had to answer four multiple-choice questions related to this text. These questions were designed so that student-candidates had to identify specific details, recognize warnings and recommendations, and show a clear understanding of instructions. As stated in the previous paragraph, the diagnostic overall rating scale created by the student-teachers restricts intermediate readers to scoring between six to nine points. Of the four items related to the third reading comprehension text, three of them were at the intermediate level. This intended to restrict true intermediate students to their respective category since they would not have been able to answer one of the items for this text because it targeted advanced readers.

The fourth and final reading comprehension text sought to identify readers at the advanced high level. This text was related to forces of momentum and the items required students to identify specific details, make inferences based on the information given, identify the purpose of a text and recognize when information is missing. As previously stated, the text and items were chosen to identify advanced high readers, who according to NCSSF-ACTFL Can-Do statements "can understand non-fiction texts that are specialized and complexed in nature, such as essays, documentaries, technical documentation, etc." (American Council, 2015, p. 38). The fourth reading comprehension text contained five items because the diagnostic overall rating scale for reading defined advanced readers as ones who scored between 10-15 points.

The listening section does not incorporate a rubric since the assessment is included in the receptive and productive responses. As stated before, the intention in the order of the items was to plant some confidence in the students by placing the easier exercises at the beginning. The first video for Part A referred to a

familiar topic for any mechanical engineering student that has completed first year: Chemistry. This explanatory video was chosen precisely because it explained concepts that these students already understood. On top of that, the video is interactive and it uses pictures, graphs, and key vocabulary which aids students' comprehension. This exercise was designed to identify listeners at a beginner level who, according to the overall rating, are students who score from 0 to 5 points.

For Part B, the difficulty level was raised, using a popular TV show that deals with scientific experiments and that uses colloquial as well as technical language. Here the students were exposed to some particular concepts, such as the Do-It-Yourself (DIY) culture, and the items were aimed to confirm if these concepts or expressions were clear for them. The language used in the video was fast paced as it was meant for a TV show. In addition to the fast pace, there were not many contextual clues. This exercise was designed in order to identify intermediate students who would score from 6 to 10 points in the listening overall rating scale.

Lastly, in Part C, the students were assessed, using only an audio, which due to the nature of the interview, contained a lot of noise at some points. This was used purposely to add communication hurdles that the mechanical engineering students are very likely to face in a future workplace. This item required short answers; therefore, a little writing was also integrated. The natural fast pace, the lack of any visual aids, the use of technical language, and the additional noise in this audio served as effective filters to identify advanced students who, according to the overall rating scale, would have a score between 11 and 15 points for this section.

F. Results and Discussion

1. Test results analysis

The diagnostic test is an instrument purposely designed to collect data that not only will indicate what proficiency level each student belongs to, but also, it will assist the student-teachers to find an equilibrium between the identified needs and wants of the target population.

According to the overall rating scale used in the DT, out of 20 mechanical engineering students, three are rated as beginner, eleven are rated as intermediate and six as advanced. Figure 3 shows the percentages of the overall ratings of said students.

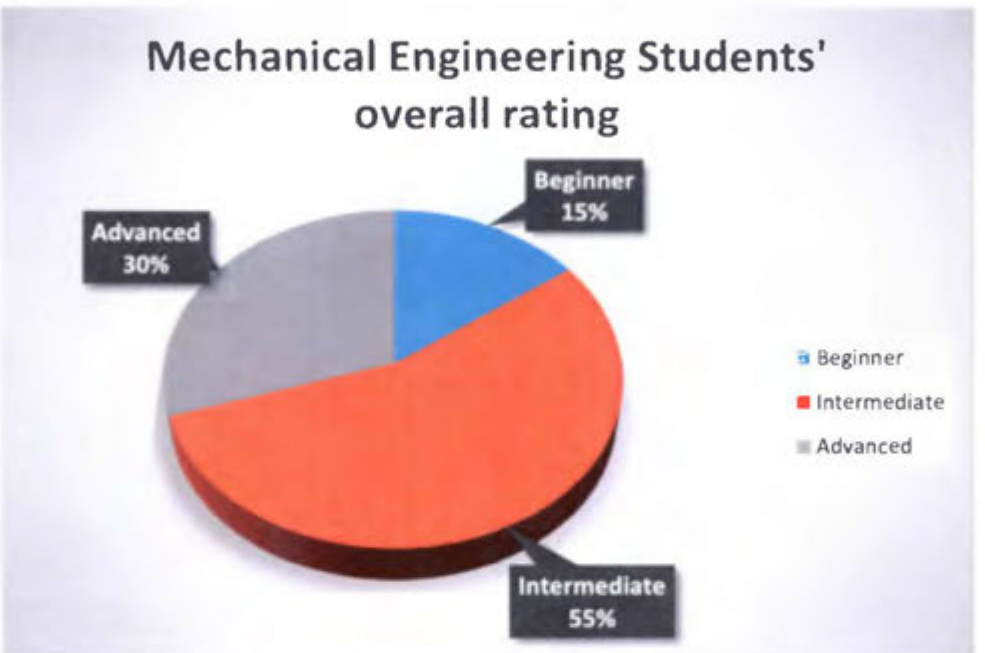

Figure 3: Diagnostic test overall rating scale results.

The figure illustrates the percentages of students rated as beginner, intermediate and advanced. Of the students rated as beginners, one is taking fourth year courses and the other two are in their second year. Working with a majority of intermediate and advanced students, which represents 85% of the population, may favor certain types of tasks and assessment in the ESP course. On the other hand, the challenge with first year students is that even though they may have the English proficiency level, they lack experience with mechanical engineering concepts that may be key for future tasks in the course syllabus.

The four macro skills analyzed individually displayed interesting results. Table 2 shows the summary of the rating scales by skill.

Table 2.

Diagnostic Test rating scale per skill.

Level	Listening	Speaking	Reading	Writing
No. of Beginners	1	6	0	2
No. of Intermediate	6	12	2	7
No. of Advanced	13	2	18	11

Source: Diagnostic Test

As stated before, receptive skills are the ones currently used actively by these students in the Mechanical Engineering program. Accordingly, the listening and reading skills show a higher number of students rated as advanced and a lower number rated as beginner. Contrastingly, the productive skills, speaking and writing, have the higher number of beginners of the four macro skills. Speaking in particular holds a very low number of students rated as advanced. These data, together with the wants and needs analyzed in the first part of this report, support the fact that speaking tasks should be the main focus of the syllabus design. In previous interviews, one of the stakeholders had mentioned the "survival ability" of mechanical engineering students. This perception is reflected in the results for the reading skill. There are no students rated as beginner and it holds the highest number of students rated as advanced. It can be speculated that, taking into account the age range of the target population (97% of them are in their twenties), reading in English has become an everyday task. Extra academic material, but also social media in its different forms, may seem to create an invisible but strong pressure to be able to understand English texts.

Listening was identified as one of their current academic needs. The DT results show that 65% of the students are very proficient when it comes to listening comprehension, as seen in Figure 4. This distribution indicates that listening tasks should have a fairly high level of difficulty. The one student who scored as a beginner will receive special assistance from one of the student-teachers in class in order to compensate for his/her low proficiency level.

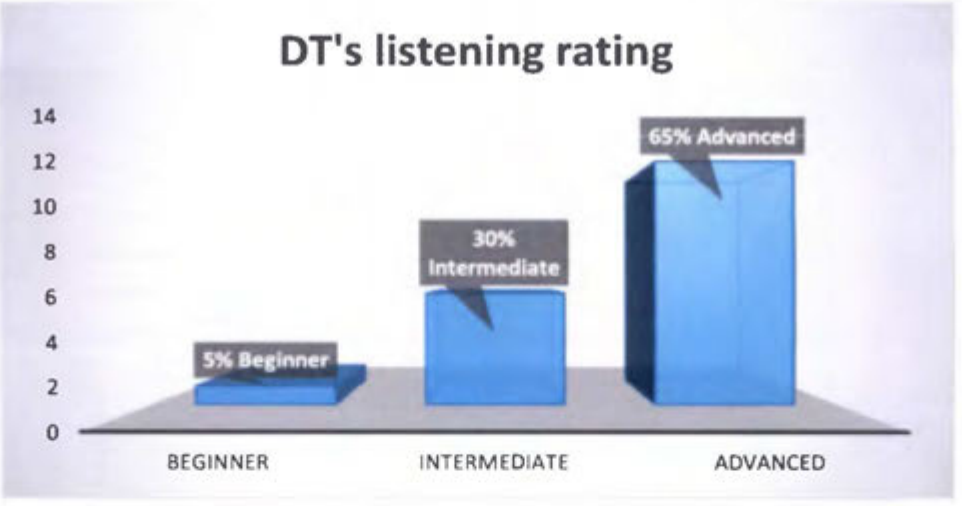

Figure 4: Diagnostic test overall listening rating

Speaking was identified as one of the future occupational needs. Mechanical engineering students seem to be aware of their future prospects, and this is probably why 90% of them stated that speaking will be "extremely necessary" in their work in the first part of the Needs Analysis. This skill has the highest beginner rate of all, with 30%, as seen in Figure 5. Only 10% of the population was rated as advanced in speaking. This suggests that future syllabus tasks should include several speaking-related activities and assessments to satisfy both the students' needs and lacks.

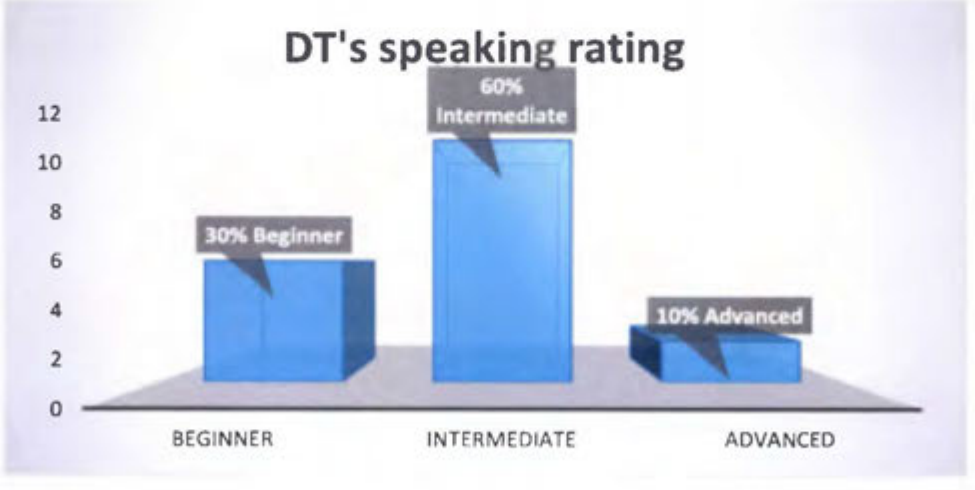

Figure 5: Diagnostic test overall speaking rating.

Reading was identified as a current academic need. This was probably the biggest surprise of the DT's results since there are no beginner readers. In fact, 90% of the population was rated as advanced and only 10% as intermediate, as shown in Figure 6. This is a very valuable piece of information for the future syllabus design. The student-teachers can target academic needs by focusing more on listening tasks since, according to these data, mechanical engineering students manage reading comprehension very well. This does not mean that reading tasks will be left aside, as this skill was already identified as part of the academic needs. However, the rates shown by the DT allow a lighter emphasis on the reading comprehension tasks.

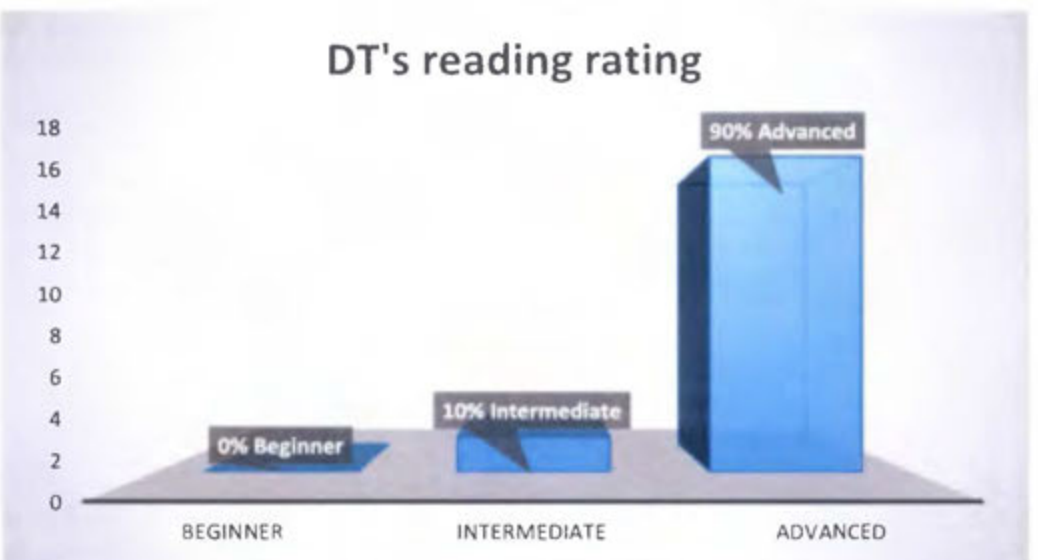

Figure 6: Diagnostic test overall reading rating.

Writing was identified as a future occupational need. This is the skill that holds more heterogeneous results because 11 out of 20 students were identified as advanced, seven as intermediate and two as beginner, as shown in Figure 7. This information admits a wide variety of difficulty levels in syllabus tasks which could be used in pre, post, and main tasks.

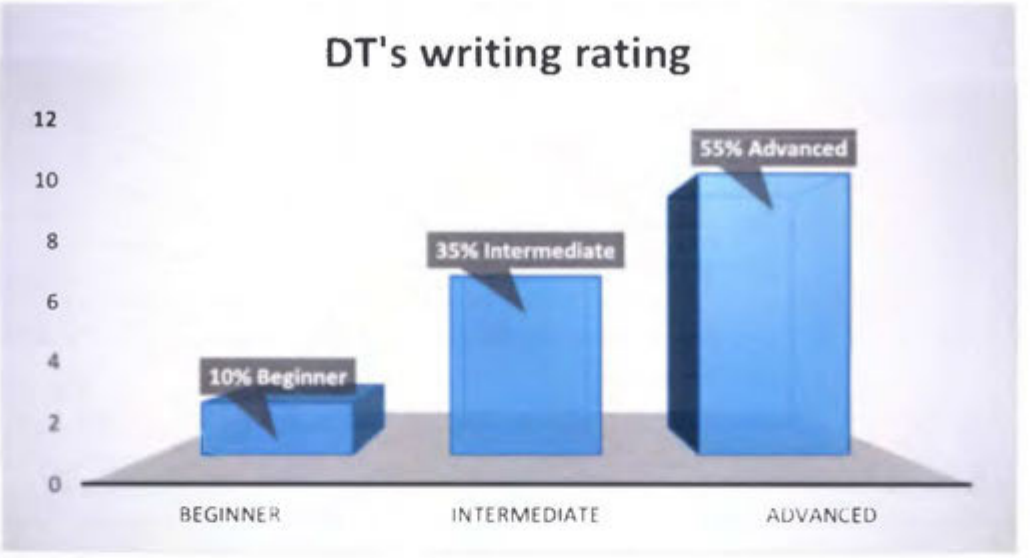

Figure 7: Diagnostic test overall writing rating

Chapter II: Syllabus Design[6]

A. Course Logo

As mechanical engineering students, this population is trained to solve problems. Their job will eventually be to come up with innovative ideas that must articulate, as a gear, in an efficient way to solve a given problem. The image of a gear is a familiar and comfortable icon for the mechanical engineering students as it can be found most machines. Their creativity will also be challenged at every new project. Urbandictionary.com defines gear up as: "To step up to the challenge, get motivated, work harder to get the job done. Man up. Entice. Motivational statement." (n.d.). *Gear Up* was chosen as the name for the course because this colloquial phrase represents what their future working life will be like: facing constant challenges and working hard to find the best way to improve.

[6] See Student Course Syllabus as Appendix D and Course Contents as Appendix H.

B. Course Description

This is an ESP course intended for Mechanical Engineering students at UCR. By the end of the course, the students will be able to comprehend texts associated with Mechanical Engineering and to communicate both orally and in written form at an intermediate English level within their field for academic and work-related purposes.

The class will be team-taught by three student-teachers who are language instructors. They will develop a task-based methodology throughout the course. This class will meet twice a week, two hours per day in room 114 at the School of Engineering (on Mondays) and in room 259 at the School of Modern Languages (on Wednesdays) from 5 p.m. to 7 p.m.

C. Statement of goals and objectives

1. Goal 1 (Unit 1- Getting it right)

By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General objectives:

a) By the end of the week, students will be able to guess meaning from written texts in the field of fluid mechanics while monitoring their learning progress.
b) By the end of the week, students will be able to identify the main idea from aural texts in the field of fluid mechanics by watching videos used as supplemental materials in class successfully.
c) By the end of the week, students will be able to guess meaning from context in the field of mechanical design by following written instructions on how to assemble a machine correctly.
d) By the end of the week, students will be able to identify the main idea from aural texts in the field of mechanical design by explaining how a machine works accurately.

2. Goal 2 (Unit 2 - Job, here I come!)

By the end of this unit, Mechanical Engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General objectives:

a) By the end of the week, the students will write their own résumé by analyzing examples and reviewing international formal standards.

b) By the end of the week, the students will participate proactively in a job interview simulation by displaying cultural sensibility and knowledge of their own skills.

c) By the end of the week, the students will be capable of advocating for a specific proposal for a hypothetical work problem.

3. Goal 3 (Unit 3: Going International)

By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General objectives:

a) By the end of the week, the students will be able to conduct machine related transactions via e-mail by using appropriate format, register, and functional language to request prices and information about machinery and parts.

b) By the end of the week, the students will be able to provide rationale for site visits by giving explanations via e-mail using appropriate format, register, and functional language.

c) By the end of the week, the students will be able to present new projects as well as project updates about advancements using appropriate structures and functional language.

d) By the end of the week, the students will be able to take part in meetings by effectively using strategies for interrupting and taking turns.

D. Methodology

1. Task-Based Language Teaching

Task-Based Language Teaching, or TBLT, promotes an approach to teaching that focuses on the processes required for students to achieve one specific outcome, rather than focusing on the mastery of grammar structures or pronunciation features. As explained by Skehan (1998), "in TBI [Task-Based Instruction], meaning is primary. the assessment of the task is in terms of outcome" and task-based instruction is not "concerned with language display" (p. 88). Due to the nature of this approach, curricula will be designed with a heavy emphasis on the completion of tasks. This does not mean that grammar and pronunciation are not important elements under this approach; what it entails is that these two latter features are acquired as byproducts, resulting from the interaction among students during a task. Contrary to what some instructors believe, TBLT also proposes that learners have spaces to be given feedback on their language production during class. As described by Richards and Rodgers (2001), it is in the planning stage of the TBLT cycle that "[the teacher] goes around to advise students on language, suggesting phrases and helping Ss to polish and correct their language. The emphasis is on clarity, organization, and accuracy. Individual students often take this chance to ask questions about specific language items" (p. 239). Hence, learners can verify whether they have been using language to complete the tasks appropriately or not.

2. TBLT Cycle

In TBLT, instructors are recommended to follow an explicit order in their lesson plans to accomplish a successful implementation of the approach (Willis in Richards and Rodgers, 2001, pp. 56-57). The first step is the warm-up. As its

name suggests, this section is designed to break the ice, as it would be expected, but also to activate the right schemata in learners. This means that whatever is introduced in the warm-up session will be of relevance in one of the subsequent tasks and/or in the main task to be developed later. Activating learners' schemata helps them recall their previous knowledge on a topic, vocabulary, expressions, memories, and experiences. This is highly important for the TBLT approach, as learners are expected to complete the tasks at hand using their current skills and knowledge. The second stage is the pre-task. There can be more than one pre-task in one lesson plan. Pre-tasks can be categorized as activities designed to help students obtain all the right input and make use of specific strategies to be able to perform the main task successfully. Once learners have been given the chance to experience the necessary pre-tasks to comfortably perform the main task, this stage takes place.

The main task is the most important section of the entire lesson plan, under the TBLT approach. Here, learners are asked to perform one communicative, real-world task. Normally, these tasks require learners to interact with others, and the main objective is to reach an observable outcome. Under this approach, explicitness plays an important role in developing learners' skills through overt instruction, using both cognitive and metacognitive strategies. This stage is completed when learners achieve the outcome they were supposed to attain. Nunan (1989) explains that "the task should also have a sense of completeness, being able to stand alone as a communicative act in its own right" (p. 10).

The next two stages are called planning and reporting. In these stages, learners are asked to "report briefly to the whole class how they did the task and what the outcome was" (Willis in Richards and Rodgers, 2001, p. 239). Additionally, Nunan adds that tasks can be real world tasks and pedagogical tasks, "which have a psycholinguistic basis in SLA theory and research, but do not necessarily reflect real-world tasks (as cited in Richards and Rodgers, 2001, p. 231). Immediately after the main task, students are to work on these latter post-tasks. The idea behind these stages is for learners to notice the gap that there could be between their actual production and what they were supposed to do.

Finally, the last stage in TBLT is called language focus. In this section, instructors guide students to hone in on what is described as *analysis and practice*. In this stage, salient language elements that were essential to perform the main task are highlighted. They can range from pronunciation features to grammar explanations. The idea is to expand on language elements that are absolutely necessary for learners to know so that they can go back to the main task and see how well they did it in terms of language use or how much work they need to do to correct and improve their language skills. As TBLT is part of the Communicative Language Teaching approach, the features presented in this section must be presented and practiced contextually because "when [language] is taught and practiced as a means of communication, rather than as a means for correcting the mechanics and surface accuracy of sentences, it becomes more purposeful and therefore a more motivating focus for classroom learning" (Pennington, 1995, p. ix). Consequently, this must be done to guarantee learners' involvement and acknowledgment of the usefulness of said features.

3. Classroom dynamics

Three student-teachers (s-t) will conduct the class. One of the student-teachers will have the leading role for each lesson. The leading s-t will be in charge of arranging class materials, greeting students, giving main instructions, explaining the agenda for the day, and assigning assistance tasks for the other two s-t. The supporting s-t will double check that class materials are ready, distribute class materials if it is the case, and assist the leading s-t with classroom tasks, such as erasing the board, setting up the projector, displaying visual aids, modeling tasks, and others. Finally, the back end s-t has the main responsibility to closely monitor students' work. The back end s-t merges in the class in order to help students perform the assigned tasks if necessary.

To guarantee equal participation among the student-teachers, they may follow the pattern for class roles below in Table 3, which will be reset every three lessons, and this assures that every s-t will perform all class roles periodically.

Table 3.

Roles to guarantee equal participation amongst student-teachers.

Teacher Roles	Lesson 1	Lesson 2	Lesson 3
Leading s-t	A	F	Y
Supporting s-t	F	Y	A
Back end s-t	Y	A	F

(A=Andrea, F=Fabian, Y=Yannick)

a. Tasks and Techniques and their rationale

As described by Willis (1996) and by Pica, Kanagy, and Falodun (2009) in Richard and Rodgers (2001), to obtain the results desired in TBLT, task types, such as listing, ordering, comparing, problem solving, jigsaws, info-gaps, decision-making, and opinion-gaps activities can work in benefit of the learners to maximize their experience using this method (p. 234). By following what has been proposed in the TBLT approach, learners are said to be more engaged; hence, tasks seem to be more interactive. These can be pedagogical or real-world tasks, but the idea is that in the end both types have the same function: to simulate real-life features that learners will perform at some point outside of the class.

b. Role of learners

Learners who are part of a process in which this method is applied should perform three main roles (defined in Richard and Rodgers, 2001, p. 235). Initially, they must know they will be group participants. This means that they will often be asked to work in pairs or groups. They will develop speaking strategies so that they can communicate effectively with their classmates. Another role is to work as monitors. Learners should be able to monitor their own production and apply strategies to repair their speech when facing linguistic breakdown. Finally, learners are motivated to take risks. They need to know that when participating in tasks they should not worry about making mistakes. They are told that making mistakes is part of the learning process and that they need to focus on delivering a message, not on working on perfect grammar.

c. Role of teachers

Richard and Rodgers (2001) also mention that teachers using this method should perform three main roles (p. 236). The first one is selecting and sequencing tasks. Teachers must pay attention to the order in which they place their tasks to address specific functions. For example, placing a warm-up activity clearly at the beginning must be done to activate schemata. Secondly, teachers should prepare learners for tasks. Teachers should not start a class with the main task because, most probably, students will not be able to successfully perform it without preparation. Finally, as mentioned before, teachers should help students "focus on form" (Richard and Rodgers, 2001, p. 236), which implies raising consciousness in students through pre-tasks and guided tasks so that students can "notice critical features of the language they use and hear" (Richard and Rodgers, 2001, p. 236).

E. Assessment

1. Formative, summative, and authentic assessment

Assessment, just like English teaching, has evolved over the last few decades. Since teaching is an interactive two-way performance, there is a constant need to prove that students have actually learned. Assessing is not an extra duty; instead, it becomes part of teaching itself. It is the way to determine if the teaching and the learning are effective on both ends. Huba and Freed (2000) propose a well-integrated assessment definition:

> Assessment is the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning (p.15).

Huba and Freed's (2000) definition is pertinent to the student-teachers as it embodies an approach that uses a variety of authentic tasks to assess students in a way that guides learners toward the knowledge they need to perform these tasks

efficiently. Assessing involves several key concepts that are often mixed up. For instance, terms such as tests, assessment, and evaluation are usually confused and even used as synonyms. Assessment also has several characteristics that define it, such as being an on-going process and having feedback as its main resource to enhance student learning (Wiggins, 1993).

2. Informal assessment

As described in Brown, H.D. (2004), "informal assessment can take a number of forms, starting with incidental, unplanned comments and responses, along with coaching and other impromptu feedback to the student" (p. 5) and for the student-teachers, this means that informal assessment is paramount to the development of the curriculum, as much of the interaction resulting from students' negotiation of meaning is spontaneous and unpredictable. Hence, the student-teachers must be ready to use informal assessment in classroom tasks "designed to elicit performance without recording results and making fixed judgments about a student's performance; [for example, by giving] suggestions for a strategy for compensating for a reading difficulty" (Brown, 2004, p.6). This description of informal assessment goes hand in hand with the principles for formative assessment, as it is characterized by "evaluating students in the process of forming their competencies and skills with the goal of helping them to continue that growth process. The key to such formation is the delivery... and internalization... of appropriate feedback on performance, with an eye toward the future continuation (or formation) of learning" (Brown, 2004, p. 6). Hence, formative assessment has a clear goal to improve the students' use of the language through feedback. Informal, formative assessment, then, is considered by the student-teachers as the core of a language curriculum.

3. Formal assessment

This type of assessment is defined as "exercises or procedures specifically designed to tap into a storehouse of skills and knowledge. They are systematic,

planned sampling techniques constructed to give teacher and student an appraisal on student achievement" (Brown, 2004, p. 6). Summative assessment is more related to the formal assessment of students: through numbers that assign the "knowledge" acquired a value. It is called summative precisely because it measures, or adds, the results of formal evaluations in order to come up with a final grade. Tests in general, quizzes, midterms and others are examples of summative assessment. Another characteristic of summative assessment is that it determines specific knowledge in a specific time during the course or program, but it does not provide feedback or remedial plans for the results (Brown, 2004).

As the present course is ESP focused and is framed under a task-based approach, most of the formal assessment activities will focus on having students performing tasks, which can also be considered as part of performance-based assessment (Brown, 2004, p. 10). This approach proves relevant for the student-teachers as, under this type of assessment, "students are assessed as they perform actual or simulated real-world tasks" (Brown, 2004, p.10). The student-teachers firmly believe that such assessment is the most beneficial for their students as they will be ensuring high content validity, which is achieved "because learners are measured in the process of performing the targeted linguistic acts" (Brown, 2004, p. 11). Additionally, by formally and carefully crafting these types of interactive tasks formally and carefully crafted, the student-teachers can make sure that said tasks "can approach the authenticity of real-life language use" (Brown, 2004, p.11). Powered by the Task Based Approach, the term *authentic assessment* gained relevance in the academic world. This kind of assessment focuses on meaningful real-life tasks in order to determine how much students have learned. One of the main characteristics of authentic assessing is that it uses "engaging and worthy problems or questions of importance, in which students must use knowledge to fashion performances effectively and creatively. The tasks are either replicas of or analogous to the kinds of problems faced by adult citizens and consumers or professionals in the field" (Wiggins, 1993, p.40). This type of assessment emphasizes what the students can *do*, and not what they *know*, although they are intrinsically related. Thus, teachers can direct the assessing

instruments to these principles and evaluate the actual proficiency level of the students when performing specific real-life tasks.

Table 4 shows the types of assessment to be used by the student-teachers during the practicum, and all the assessments in this course will be administered in the chronological order presented in the table. This order runs parallel to the units presented in the course so that each assessment will be related to the material covered. For the purpose of the course, the students will be evaluated based on their performance in five different assessments as detailed in Table 4.

Table 4.

Evaluated activities during the second semester.

Type of assessment	Percentage
1. Academic task (integrating reading and listening)	20%
2. Oral Presentation I (defending a project proposal)	20%
3. Written mini projects (writing an e-mail and a résumé)	15%
4. Job interview simulation	20%
5. Final Speaking Project (participating in meetings and conferences; specific tasks coordinating site visits, updates, ordering machine parts)	25%

As previously mentioned, the bulk of evaluation falls under the category of performance-based assessment. The first assessment is an academic performance task which focuses on reading and listening. The types of authentic materials for the academic performance task will be similar to that of the diagnostic test; however, for the academic performance task student-teachers anticipate that students will employ the cognitive and metacognitive strategies learned during the first unit. The students will be asked to watch authentic videos and read authentic written texts to build a two-stage balloon rocket in class. The objective of this assessment is to help students become more proficient readers and listeners to tackle their immediate academic needs, since, as explained in previous sections, mechanical engineering students are exposed to written and aural texts in class,

but they do not have the necessary tools to deal with these texts. The academic performance task will have a 20 percent influence on the students' final grade due to its immediate importance.

The second assessment is an oral presentation in which students have to defend a project proposal. This assessment is another authentic task that encourages students to use the vocabulary and grammatical structures presented in the second unit. This project proposal is not unlike the project presentation that students had to do for the diagnostic test; however, students should be better equipped with strategies and new vocabulary learned in the course for this assessment. This first oral presentation will have a 20 percent influence on the students' final grade because of the importance and relevance of this task in a job setting. The diagnostic test also revealed that 90 percent of students were at the intermediate or beginner level for speaking, suggesting that speaking is a skill that requires more polishing than the other macro-skills.

The third assessment contains two written mini projects that entail the reading and writing of work-related e-mails and the creation of a résumé. This assessment reflects an authentic task faced by mechanical engineers on a day-to day basis. Also, the development of the résumé will be carefully guided by the student-teachers to aid students in the formation of a well-designed and accurate description of themselves. The written mini projects will have a fifteen percent influence on the students' final grade. The student-teachers agreed on this percentage because the results of the diagnostic test revealed that 90 percent of the students were intermediate or advanced writers, proving that writing was not as challenging as some of the other skills.

The fourth assessment is the job interview simulation. As previously mentioned, the assessments run parallel to the course. The job interview simulation will be evaluated after the completion of Unit 2: Job, here I come! This assessment intends to replicate a real-life situation for students, especially for those in their final year. The job interview will have a 20 percent influence on the students' final grade mainly because of the great deal of material it covers.

The fifth and last assessment is the final oral presentation. This assessment aims to evaluate the students' ability to participate in meetings. According to stakeholders, mechanical engineers have to work as a team to resolve problems. This being the most difficult assessment, the student-teachers decided to include it as the final assessment. This would allow students to use all the language and strategies acquired throughout the course to successfully complete the task. The final oral presentation will have a 25 percent influence on the students' final grade, the highest percentage of all the assessments. This is due to its difficulty and importance as stated by the stakeholders.

3.1 Assessing the course and student-teachers

One of the main characteristics of assessment is that it is an on-going process (Brown, 2004). Having only a final course evaluation may prevent teachers from correcting anything that may not be working really well on the course. Students' opinion throughout the course is a great source of input to modify class planning for the future. As stated previously, the course Gear Up has three Units. At the end of each unit, students will be given a questionnaire that will explore their preferences and opinions about the contents, difficulty, and organization of each specific unit and assessed activity. This will allow student-teachers to make the necessary adjustments for the following units. Most of the items use a perception scale that is described at the beginning of the questionnaire. This kind of scale is meant to make the questionnaire user friendly. Also, there are some open-ended questions so that students can express their opinions freely and provide suggestions, comments, or complaints. The items assessed in the questionnaire are related to the course objectives in general but also to the teaching approach, in this case, Task Based teaching approach. This instrument will be administered online (see Appendix F).

In an ESP course, students are the final clients. Their needs, lacks and wants were explored in the previous Needs Analysis and the entire course was designed based on them. However, as in any other corporate relationship, the clients should have the option to evaluate their providers, in this case, the student-teachers on a

regular basis. Just like the previous assessing instrument, this one also includes a perception scale. The scales are different because in this case the teachers' performance is the one being evaluated, not the entire course or unit. The items evaluated also go along with ESP and Task Based teaching approach principles, for example, teaching talking time, class materials, or feedback. There are also some open-ended questions so students can refer to a specific student-teacher or situation in general. This instrument will be administered online (see Appendix G).

Chapter III: Course Evaluation Report

Language teachers sometimes doubt about the impact that teaching approaches different from what they normally use may have on their students' language learning process. Approaches such as the Task-Based Language Teaching (TBLT) might seem unfamiliar to some language instructors who have adopted well-known methods, like the Presentation-Practice-Production method to teach general English, and who would consider an approach update an unnecessary risk. As the old adage goes, "if something is not broken, why fix it?" This uncertainty for an unnecessary risk lead the researchers to study whether or not the TBLT approach would have an impact on students' use of English for Specific Purposes (ESP) vocabulary and grammar structures. Consequently, this research project aims to contribute to the understanding of the capacity to address the challenge of providing students in an ESP course for mechanical engineering with more engaging and purposeful vocabulary and grammar lessons by addressing the question: "What is the impact of using tasks that simulate real-life situations on the technical vocabulary and grammatical structures used by a group of Mechanical Engineering students when carrying out the goals of an ESP course?" To determine this impact, the researchers posed five subquestions:

1. To what extent do the students use the appropriate ESP vocabulary needed to effectively explain how model cranes are built?
2 To what extent do the students use the correct grammatical structures to effectively explain how model cranes are built?

3 To what extent do the students use the appropriate ESP vocabulary needed to actively participate in a job interview?
4. To what extent do the students use the correct grammatical structures needed to actively participate in a job interview?
5. What are the students' attitudes towards the use of real-life simulations as assessment tools in an ESP course?

A. Review of the literature

To assess the efficacy of an ESP course, there are many elements to be considered; however, for this specific course, the student teachers, focused on the learners' use of technical vocabulary and correct grammar structures to achieve the proposed goals in units 1 and 2. Hence, this review of the literature will first explore the challenges of teaching students technical vocabulary and correct grammar structures to perform tasks. Secondly, it will expand on some techniques to help students learn and apply both technical vocabulary and grammatical structures in a meaningful way. Lastly, this review of the literature will dedicate a smaller section to the role of authentic materials and tasks in increasing students' retention of vocabulary items and grammar structures.

1. Challenges in vocabulary and grammar teaching

Every language is a living entity constantly undergoing changes. These sustained changes challenge teachers not only to keep updated, but also to look for innovative and effective teaching strategies. Branches of EFL teaching, such as ESP, take these challenges a step forward since they not only include regular language features, but also, very specific information about the field. Specifically in the ESP area, challenges could be grouped according to the *what*, *how* and *who* to teach.

Teaching ESP courses implies particular challenges for the teachers. In many ESP courses students have a basic knowledge of the target language structures; however, they lack the technical vocabulary that the field requires. Here is where

the *what to teach* becomes relevant. Nation and Newton (1997) have drawn attention to an important fact: technical vocabulary should be taught together with high-frequency words as the last ones will occupy an important percentage of the texts:

> High-frequency words of English should receive attention first because without these, it is not possible to use English in any normal way. These words deserve considerable time and attention. Once learners can use them, the decision as to which level to move to next depends on the use that the learners will make of English. (p. 239)

This is essential since the technical vocabulary to be taught must be closely tied with the authentic tasks that students will perform in the ESP task cycle. The challenge for teachers is finding an equilibrium between the technical terms and concepts and useful general English which will allow students to perform the tasks in a natural way.

Another major challenge that teachers encounter while teaching ESP is teaching new labels for unknown words. According to Farstrup and Samuels (2008) the technical vocabulary that students come across in an ESP course is likely to be new labels for new ideas. As a result, teachers are charged with introducing their students to new words as well as providing them with the appropriate definitions and explanations. This is unlike general English because these courses usually tend to teach students new labels for familiar vocabulary (Farstrup & Samuels, 2008). For ESL teachers who are extremely versed in the content area that they are teaching, the issue of teaching new labels for new ideas may not be as much of a challenge as it is for teachers who are unfamiliar with the subject's content. In either case if the concepts are new to students, teachers must be aptly prepared to enlighten students with regard to new vocabulary and what it represents. The main obstacle when providing students with the meaning of a concept is how to provide a definition or explanation that only uses words and ideas that students are familiar with.

Together with the *what* there are other considerations when teaching technical vocabulary, such as the *when*. Memory (1990), from Indiana State University, discussed pros and cons about teaching technical vocabulary before, during or after the task. Memory has stated that unless the teacher makes a conscious effort to teach technical vocabulary, there will inevitably be terms or concepts that students will not learn (Memory, 1990). Despite the fact that Memory's research focuses on the time in which technical vocabulary would be more effectively taught in class, he also draws attention to different techniques that can be used to teach vocabulary in class such as glossaries and lists projected on the board. He suggests that the implementation of an effective technique during class time could yield a bigger revenue in terms of learning (Memory, 1990). One could assume that the discussion about vocabulary teaching has been overcome by academics; however, as Memory has stated: "teaching technical vocabulary before a textbook chapter is read, therefore, is viewed by many teachers as an unreasonable, if not impossible, instructional strategy" (1990, p. 40). Limited time is now a characteristic for almost all tasks that one can think of. Meticulous scaffolding may be perceived as time consuming at first, but in the long term it tackles different proficiency levels within the group and even lack of training on certain vocabulary teaching strategies by the professor. Thus, the *what* and *when* of teaching technical vocabulary are essential in the learning process and they must be included into the variables of ESP class planning.

Another dilemma that implies a challenge in ESP is grammar teaching and its importance. Indeed, the incorporation of grammar will be strictly related to the population's needs analysis results. Nonetheless, the *how* we teach language grammar in ESP classes requires specific strategies and lots of creativity. For everyday planning, the decision of how much grammar to include usually depends on several factors; for instance: population's proficiency level, the task's requirements and the occupational field itself. Grammar teaching in ESP courses has aroused an interesting challenge: how to embed grammatical structures in communication-focused tasks. Students should be explicitly taught the importance of correct grammar structures while communicating: "grammatical structures are

learned and used effectively when they are presented in contexts to serve communicative purposes" (Abdulwahed, 2010, p.143). The most that students can relate their own experiences to the contexts and tasks presented in the ESP classes, the easier it will be for them to acquire proper grammar structures.

Finally, the *who* we teach has gained a lot of relevance in the last decades. Despite the fact that the term *millennials* has become trendy for marketing campaigns, teachers cannot ignore the fact that different generations are mixed in the language classrooms these days. Each of those generations is characterized by very distinct traits, ways of learning and, perhaps most importantly, the way they use technology to learn. Galina Kavaliauskienė (2012) has defined millennials as a "generation (that) grew up with technology, prefers to communicate through e-mail and text messaging rather than face-to-face contact [. .] and it is identified as confident and technologically advanced" (n.p.). A generation gap between students and teachers has always been the norm; however, a big group of teachers are lacking technological literacy to keep up with their students learning needs. The challenge for teachers now is how to include technology in their teaching strategies in order to maintain students' interest and ease their learning process.

The challenges are factual, but there is also a lot of research done towards looking for effective classroom solutions. There are several techniques and strategies for vocabulary and grammar teaching in ESP courses that can soothe the students learning process.

2. Techniques to learn and apply vocabulary items and grammar structures

Owing to the significant challenges posed by vocabulary and grammar acquisition in the EFL classroom, teachers must implement techniques to facilitate their learning. Without vocabulary there can be no production and without grammar there can be no accuracy in production. As previously mentioned, the importance of these two language features goes without saying and due to their high value, a great deal of research and suggestions on how to teach them have been put

forward. For the purposes of an ESP population, this literature review hones in on useful techniques used in the teaching of specific populations.

Thornbury (1999) has outlined two ways in which learners can understand a grammatical structure: the deductive path and the inductive path. In the deductive approach, a grammar rule is explicitly presented before students are asked to produce their own examples, whereas the inductive approach requires students to discover the rule after exposure to several samples of the target structure (Thornbury, 1999). For an ESP course in which the student-teachers have limited time with their learners the latter approach appears to be the best option. According to Thornbury, 'working things out for themselves prepares students for greater self-reliance and is therefore conducive to learner autonomy" (1999, p.54). After taking an ESP course that uses the inductive approach, students can take its fundamentals, which favor pattern-recognition and problem-solving abilities, and use them to continue identifying and learning new grammatical structures long after the course has concluded. Another major advantage of the inductive approach is that "rules learners discover for themselves are more likely to fit their existing mental structures than rules they have been presented with. This in turn will make the rules more meaningful, memorable and serviceable" (Thornbury, 1999, p.54). Learners will be able to access rules learned through the inductive approach in their everyday activities and manipulate vocabulary around these rules to respond and react to different situations.

Although the inductive approach offers several advantages, Thornbury has suggested that in some instances it might be necessary to use a more deductive approach to grammar teaching (1999). For difficult grammatical structures, learners may spend a significant amount of time and energy trying to work out the rules. In addition to the severe cognitive load that some rules demand, 'learners often hypothesize the wrong rule, or their version of the rule may be either too broad or too narrow" (Thornbury, 1999, p.54). In such cases it is best for the teacher to explicitly teach the grammar rule. A big part of finding the balance between the inductive and deductive approach is knowing your students. According to studies, students actually prefer when teachers present them with the

grammar rules (Thornbury, 1999, p.55). For an ESP course that implements the Task Based Language Teaching approach, the language focus section of the class offers a practical solution for this balance between deductive and inductive approaches. The language focus often comes after the main task in the class cycle and draws students' attention to a target structure by honing in on specific examples from a text used in previous activities. According to Nunan, (2004) the provision of examples affords students the opportunity to formulate their own rules by identifying patterns, while the inclusion of a brief explanation of appropriate situations to use the target structure guides students down the right path of when to use certain grammatical structures (p.14). This combination allows student-teachers to teach grammar in a way that is not only efficient with regard to time, but also effective in the grooming of autonomous learners.

Similar to the teaching of grammar, Schmitt (2007) suggested that "any vocabulary program needs to contain two strands: an explicit strand to present the teachable word knowledge aspects of high value words and an incidental learning strand where (a) those words are consolidated and more is learned about them, and (b) a multitude of other new words are met" (p.751). The pairing of these two strands empowers students with what they need to know now and points them in the right direction as with the tools necessary for what they would need to learn in the future.

The explicit teaching of vocabulary is a major component of an ESL teacher's role in the classroom. Finding creative and salient ways to teach vocabulary is a huge challenge that needs to be met with diverse solutions. One common method used by teachers is word pairing. Nation (2001) has done research showing that students can successfully learn a great deal of words using this technique, suggesting that students should look at one word in the pair and try to retrieve the other. According to Nation and Meera as cited in Schmitt, "each retrieval strengthens the connections between the form of the word and its meaning" (Schmitt 2007, p.753). These word pairs can be presented as physical or digital flashcards, but according to Schmitt, "teachers should consolidate and enrich this initial knowledge with contextualized practice in subsequent classroom sessions,"

since the biggest criticism of using word pairs is that words are not presented in context (Schmitt 2007, p.753).

The teaching of words in their respective contexts cannot be overlooked, and teachers can aid students by teaching the underlying meaning of a word. The underlying meaning of a word refers to the underlying trait that many polysemous words in English have. Nation has suggested that instructors define the underlying meaning concept in order to maximize the effect of teaching by helping students to understand the word in a variety of different contexts (Nation 1990, p.72-73). In an ESP course it is impossible and ill-advised to teach all the meanings of a word in one class. The underlying meaning concept appears to be a time-efficient and useful way to combat tricky words.

In order to facilitate vocabulary learning some authors consider maximizing learner exposure to English as key (Newton, 2001; Schmitt, 2007). Nation (1990) did research on numerous studies that pointed to the conclusion that a word required from 5 to 16 repetitions to be learned. According to Schmitt, "the fact that vocabulary is learned incrementally leads to the implication that words must be met and used multiple times to be truly learned" (Schmitt 2007, p.749). Teachers can present words and recycle them later so that students can have enough exposure to these words to decrease their chances of forgetting the new vocabulary. Nation (1990) has advised that words should be recycled soon after the initial lesson in which they were presented. Then, these words should be seen again at regular intervals. When planning a course, teachers can mark specific dates to review vocabulary so that their students can learn more efficiently and so the teachers themselves will have a guide for revision (Schmitt, 2007).

Newton (2001) added that teachers can increase exposure by only using English in the classroom and by implementing group work. Through group work students can interact and learn new vocabulary from their peers. Group work can render a great deal of success in this regard, especially in an ESP course with varying levels of proficiency. Another way in which teachers can expose students to key vocabulary in an ESP course is through narrow reading. Narrow reading refers to reading several texts that are all related to a similar topic. Schmitt

purported that "reading one subject means that much of the topic-specific vocabulary will be repeated throughout the course of reading" (2007, p.752). For ESP courses, teachers can choose the topics that students are most interested in or the most relevant topics for them and select readings that will contain key recurring vocabulary items.

In order to focus on the most important vocabulary items related to a specific field or subject, teachers can benefit from the findings in corpus linguistics. Through corpus linguistics teachers can discover the most frequent words within a genre as well as the most common formats for certain types of discourse (Schmitt, 2000). In addition to providing insight into frequency, corpus linguistics reveals how words collocate with other words. Teachers can take full advantage of corpus linguistics by teaching collocations as well as training their students to identify them. Nattinger and DeCarrio as cited by Schmitt have suggested that teachers pay attention to words that are more than five words away to find every collocational relationship (Schmitt, 2000). Schmitt goes on to encourage the view of words as "parts of lexical phrases in interconnected discourse" (2000, p.78). In an ESP course, teachers can provide students with strings of words that commonly go together via the presentation of useful language needed to complete activities or during the pre-task phase. In order to find these collocations, teachers can use corpora databases as well as their own research and investigation of authentic samples. One of the advantages of using corpora studies is that teachers provide students with examples that are realistic, and as a result these word chunks can be readily applied. In addition to the authenticity provided by corpora studies, teachers no longer have to spend time creating examples for students (Schmitt, 2000). Instead of creating materials with language samples, teachers can extract examples from authentic texts in order to present vocabulary and grammar that are both relevant and appealing to students.

3. The role of authentic ESP materials and tasks to increase retention

To define what authenticity is one would have to refer both to the tasks at hand and the materials given to students to perform such tasks. When talking about authenticity, teachers and materials developers must consider first the field they are working with as to identify real-life scenarios the learners will encounter either in their academic or occupational lives. After conducting a proper needs analysis, teachers and materials developers can then determine which language functions, lexical items, pronunciation features, and mainly, which tasks their learners will realistically perform in those real-life scenarios previously identified. This will result in a selection of tasks and materials that will reflect their learners' fields, needs, lacks, and wants inherently.

Teachers and materials developers may feel tempted to look for a published textbook to satisfy the need of presenting their students with engaging and already tested materials; however, "no textbook or set of materials is likely to be perfect" (McDonough, Shaw, & Masuhara, 2013, p. 65). Patricia Byrd (2001) has also pointed out that the fit between a curriculum and textbooks is difficult to achieve for two main reasons: there are not clear curriculum statements in programs, and if there are any, they are too specific for a publisher to focus on (pp. 415-416). Hence, ESP teachers and materials developers might come to the conclusion that it is better to create their own materials or to adapt existing ones than to try to find an already published textbook, hoping that it would address the specific needs of a very particular ESP population, while presenting students with a desired language learning methodology, such as the communicative language teaching approach or the task-based language teaching approach.

The authenticity of a task can be determined by many factors such as the level of formality or informality required to perform a task, the number of speakers involved in it, the nature of the task—written or spoken—, and even the degree of shared cultural knowledge the learners must possess to complete a task (Robinson, 2011, p.36). What to say, when, and how to say it play a paramount role in performing a task. All of these factors must be taken into account when

designing tasks and their respective materials as to guarantee that learners will be given the proper scaffolding in those areas, or the necessary ones, to perform the tasks correctly, through careful preparation during pre-tasks and through an appropriately elaborated main task that will have learners apply everything that was practiced during the pre-tasks. As previously mentioned, it is important to recall that the more authentic a task is the more relevant it will become for learners, which will in turn make it meaningful and easier to retain, because "authentic tasks . . . stimulate 'whole brain processing' which can result in more durable learning" (Mishan, 2005, p. 42).

This is why teachers and materials developers must study each task to be taught in depth to be able to determine which specific features their students will need to learn, which may vary from culture to culture. Even though the design of an ESP course seems like something that could be later applied to a similar group of ESP learners, it can be compromised because of cultural differences. As an illustration, the authenticity of a task could lose validity if Japanese students are taught that they must make direct and sustained eye contact when expressing strong disagreement in a meeting with Japanese and English-speaking superiors. As the Japanese culture can be considered a collectivist society, it is customary that people are not to show assertiveness or direct confrontation in public—let alone maintain direct eye contact with superiors—as a way to "keep in-group harmony" (Hofstede, Mink, & Hofstede, 2010, p. 234). Consequently, the task described before may contain features of tasks to be taught if the students were to deal with more individualistic cultures, such as the American culture. However, under these specific circumstances, this feature would not be authentic, as it does not resemble what learners will do in real life in their specific contexts. For this reason, teachers and materials developers must take cultural issues into consideration, as to select wisely what to teach and how to teach it.

If teachers and materials developers intend to make learners retain vocabulary items or grammatical structures, these are to be presented contextually, meaningfully, and repeatedly, but most importantly, realistically. This can be achieved by making use of authentic texts. Tomlinson (2011) has described an

authentic text as "a text which is not written or spoken for language-teaching purposes" (p. ix). Hence, teachers and materials developers must conduct the necessary research to find or adapt real-world texts that would fit their purposes. Adapting authentic texts can take many forms: adjusting the speed of a conversation to make it slower for beginning students, presenting just one paragraph of a long text, modifying grammatical structures and syntactical patterns to simply a text, and even highlighting or bolding words in a text to make language features more salient. The way teachers can adapt materials is as manifold as one can imagine. Therefore, to help learners retain vocabulary items and language structures, teachers and materials developers normally create materials using authentic texts and adapt them to their population's fields, needs, lacks, and wants in an attempt to teach these items both meaningfully and realistically. Some examples for authentic materials are online local newspapers, YouTube videos, npr.com audios and scripts, university online lectures and webinars among others.

There are different ways to achieve this goal. Tomlinson (1998) has suggested that materials should "achieve impact in the sense that they arouse and sustain the learners' curiosity and attention" (p. 4), and sometimes, the only way to make sure one arouses students' curiosity is by selecting the right authentic materials while providing them with enough input and opportunities to encounter and use new or useful words/chunks in rich and meaningful scenarios. Graves (2006) mentioned that "one way to build students' vocabularies is to immerse them in a rich array of language experiences so that they learn words through listening, speaking, reading and writing" (p. 5). Therefore, this implies that teachers and materials developers should consider pre-teaching contextualized vocabulary items and grammatical structures that will be easily found in their students' real-life scenarios so that the authentic materials used give validity to the tasks to be performed in class. Additionally, Dudley-Evans and St. John (1988) proposed that in order to stimulate and motivate learners, materials should present students with novel information, grounded in the learners' experience and knowledge (p. 216). This supports the thesis that ESP materials should reflect in as many ways as possible

the learners' areas of study, as to increase motivation and retention in the short and the long term.

It is important to mention that even when all of the aforementioned elements are taken into account for the design and creation of materials, there will be students who will have a difficult time retaining vocabulary items or grammatical structures correctly. Known as "Cinderella factors," learner variables such as personality, motivation, attitude, aptitude, preferred learning styles, and intelligence can hinder students' language learning process in significant ways. More often than not, age, sex, cognitive style, and accepting the explicit teaching of learning strategies—cognitive, metacognitive, and social/affective—can determine the degree of students' success in a class (Dörnyei, 2012, p. 91), regardless of a flawless design, selection, or adaptation of authentic materials and tasks.

During the carrying out of the ESP course designed for mechanical engineers, student teachers aspired to meet the challenges of teaching vocabulary and grammar head-on by implementing useful techniques and strategies as well as presenting students with authentic tasks. These tasks were intended to be as authentic as possible to simulate tasks in the students' fields that had to do both with their academic and delayed needs.

B. Methodology

This research project includes quantitative as well as qualitative data. Both research approaches were useful to collect information that supported the answers to the main research questions; therefore, this research project can be defined as mixed-methods research. This project consists of three main stages. First, the researchers analyzed the influence of tasks on the use of appropriate ESP vocabulary and grammatical structures when students needed to explain how model cranes are built. The second stage had to do with gathering data to determine the extent to which tasks that simulate real-life situations can influence students' ESP vocabulary and grammatical structures selection when actively participating in a job interview. Finally, the last stage dealt with identifying students' attitudes towards the use of real-life simulations as assessment tools in an ESP

course. To obtain the necessary information, the researchers made use of several techniques to guarantee multiple perspectives on each matter: researchers' own notes, surveys addressed to course evaluators and observers, as well as surveys addressed to students, comments researchers made in students' feedback forms, video and audio recordings of student presentations, and student self-evaluation forms.

1. Participants

For this research project, 11 Mechanical Engineering students participated in the final course implementation and evaluation. Ten of the students were taking their BA in Mechanical Engineering while one of the students was already enrolled in the *Licenciatura* program. Out of the 11 students, three of them were already working, and the others were full-time students. The students' English proficiency level was very heterogeneous: four of them had a basic level, three had an intermediate level and four had an advanced level.

2. Instruments

To collect data, eight instruments were used: two instruments for course evaluators and observers, two feedback forms for students' presentations, one student self-evaluation form, and three unit evaluation surveys addressed to students. The first two instruments were designed for course evaluators and observers to assess students' use of ESP vocabulary and target grammatical structures when explaining how model cranes work—which was part of Unit 1—and to actively participate in job interviews—main goal in Unit 2—respectively, see Appendixes I and J. These instruments included a scale to rate four different statements about the expected students' performance. It also included a second part in which there were open ended-questions so the course evaluators and observers could add their perceptions extensively.

Appendixes K and L were rubrics created with the objective of providing students with feedback after two different oral presentations: defending a proposal

and participating in a job interview. These two instruments were task-specific analytical rubrics which evaluated specific contents reviewed in class for each task. For instance, the rubric for the job interview included a category for dress code and body language. Even though these categories were not directly related to language learning itself, they were essential to achieve the task goal.

Appendix M was a self-evaluation form for students to evaluate their own performance after the job interview simulation. This instrument was used as a post task, and it included three reflection questions about the main task. The second part for this instrument included a scale for the student to rate his or her own performance by analyzing three statements that described expected abilities after the main task, in this case, the job interview.

Finally, appendixes N, O, and P are the surveys that students filled out to evaluate the use of tasks as assessment tools. Most of these last surveys were completed as homework and digitally, through the use of Google Forms. Appendixes N and O consisted of five parts. The first four utilized scale rates to obtain information about the course content, task difficulty, student preferences and organization. The fifth part contained three open-ended questions that enabled students to express their opinions freely. Appendix P aimed to evaluate the course in general. This appendix had four parts out of which the first three used scale rates to assess tasks, materials, and rubrics. The final part contained three open answer questions which allowed students to elaborate on their preferences.

3. Procedures

Unit 1

To determine the extent to which the students used appropriate ESP vocabulary and correct grammatical structures needed to effectively explain how model cranes are built, the researchers analyzed their notes and compared them with the answers obtained from Instrument 1: Course Evaluator—Appendix I—. The objective was to find possible comparisons or patterns between the researchers' notes and the observations made by one of the course evaluators. Additionally, students were asked to take a small survey to express how they felt

about Unit 1 (Appendix N). This survey included statements like: *The stages of the lesson guided me to achieve the objective of the lesson* and *the lessons from Unit 1 prepared me for the evaluation* which helped the researchers to obtain information about the students' perception in relation to the tasks and its influence to vocabulary and grammar structures.

Unit 2

To identify the extent to which the students used the appropriate ESP vocabulary and correct grammatical structures needed to actively participate in a job interview, the researchers had the students give two oral presentations.

a) One of them was about defending a personal proposal for a work problem. These were individual oral presentations in which students were given a mechanical engineering problem, similar to the ones used during real job interviews, which needed to be solved. They were given 5 minutes to analyze the situation, and then they were to defend their proposals in front of the class. For this presentation, the three researchers separately evaluated each student, using a rubric designed for this presentation (see Appendix K). As there were some observers from another class from the M.A. program, they were given, as well as the course evaluator present, "Instrument 2: Course Evaluator"— Appendix J— for them to give the researchers more insight and evidence on the students' performance. Consequently, for this evaluation, the researchers triangulated the information from two observers, one course evaluator, and their own comments written in students' feedback forms.
b) The last evaluation for this research project was the participation in a job interview simulation. Sitting in small groups of three and four students, they were interviewed by one of the student-teachers. The data from this test were obtained by analyzing the comments the researchers wrote in students' feedback forms and by comparing them with the students' self-evaluation form (Appendix M). What is more, students were also

instructed to complete a survey explaining how they felt about the progress of the course and the usefulness of what had been studied in Unit 2 (Appendix O). Finally, students were given "Instrument 3: Student Attitude Toward Evaluation" (Appendix P) to collect students' opinions about the use of authentic tasks as assessment tools in Units 1 and 2.

C. Results and Discussion

This study attempted to determine the impact of using tasks that simulate real-life situations on the technical vocabulary and grammatical structures used by a group of Mechanical Engineering students when attempting to achieve the goals of an ESP course. The following section presents the most salient findings that helped answer the previous research question. The results will be analyzed based on each subquestion by unit. To protect students' identities, they were assigned a code that will be the same in each of the analyses.

1. Unit 1

When asked why the students had or had not succeeded in using the appropriate ESP vocabulary to effectively explain how model cranes are built, the course evaluator noted that the students always used the appropriate name of each part of a crane and vocabulary related to materials during the main task, which was also supported by the researchers' notes. The evaluator goes on to explain that the students had been successful because "during all the different stages of the lesson, the students used the ESP vocabulary in oral and reading tasks. When required, they were able to effectively describe what materials they needed and how to build their model cranes." This shows that vocabulary teaching was effective throughout the lesson, which may have helped students become better equipped to deal with the main task. To exemplify, one student mentioned that they could use a wooden block as a counterweight, and another student said they could use a metal binder clip as their hook during one of the pre-tasks in

which they had to think about the possibility of building a model crane with materials they could find at home.

Similar to what the researchers had recorded about the use of imperatives during the main task, the evaluator considered that the students had sometimes used imperatives, which meant that they partially succeeded at this. The course evaluator expanded on this by explaining that the students did not always use imperatives because 'at times they were a little silent during the building part of the main task. They could have been instructed more directly to use them by designing a step in the task that required it." The researchers noticed this gap when executing the lesson, as in some cases, the assistant teachers noticed that the students were using language chunks such as "You cut this. Yes, I think like that. We put this here?" when observing how students worked in their groups. Hence, the researchers must acknowledge a limitation in this matter. The researchers speculate that the cognitive load of the activity may have been too great and this, in turn, could have been the reason why the students worked silently and individually. What is more, the researchers also conjecture whether or not they may have overemphasized the importance of using imperatives to build a model crane in class. For these reasons, the results obtained show partial attainment.

As the students were following written instructions to build a crane, they were expected to use imperatives to describe how they had built their model cranes in the post-task. Each group was assigned one of the five steps in the reading, and they were to explain it back to the class. Based on the researchers' notes, one spokesperson per group described what each step was about, using imperatives 100% of the times. Even though one group could not finish on time, they were asked to report what they did in the first step, which they managed to do so by using imperatives and sequence markers. For this section, the course evaluator supported the latter argument by confirming that during the post-task students always used imperatives and sequence markers to explain how they had built their cranes.

Interestingly, when asked about the activities that they had enjoyed the most from Unit 1, 43% of the students mentioned something about building the model crane:

- "Building a crane model using recycling materials. The construction of the rocket in the evaluation.
- Designing the crane and disputing answers.
- Build diferents [sic] machines and to learn vocabulary about this."

The researchers believe that obtaining data like this in an open question reflects that the lesson plan was correctly executed, not only because students were able to use the appropriate ESP vocabulary and the grammatical structures, but also because they considered this lesson as something memorable and appealing. As explained by Mishan (2005), this can aid students' vocabulary and language learning retention greatly, since students' language acquisition process becomes enjoyable and meaningful because these "authentic texts [have an] impact on affective factors essential to learning, such as motivation, empathy and emotional involvement" (p. 41).

2. Unit 2

As mentioned previously, Unit 2 contained two evaluations that simulated real-life tasks: the pleading of a personal work proposal and a job interview simulation. It is not unusual that mechanical engineering applicants are asked to solve hypothetical work problems in their job interviews. Thus, these two evaluations were intrinsically related.

Due to the formality of a real job interview, the language focus for these evaluations was the proper use of modals could / should / would especially with the intention of expressing possibility or providing advice. During the evaluations 100% of the students were able to use at least one modal correctly. Interactions during job interviews need to be concise and precise. This was taught as part of the non-verbal language tips during class and that is why researchers consider that the proper use of at least one modal is considered as a positive input towards

answering the research question. Students used phrases previously taught as useful language, which included the correct use of modals such as: "from my experience, I think you should use solar panels. .", "with the information given, I think we could get the water by gravity...", "I would suggest using a wind turbine in this case" and "I would go to the past..." among many others. The course evaluator perceptions go in the same direction: "Ss succeeded in correctly using those modals because their presentations and proposals sounded logical, plausible and clear in relation to content thanks to an appropriate use of these modals and other important structures such as formulaic language previously provided in class." Student teachers identified some pronunciation mistakes for modals during class performance. For example, /kuld/ instead of /kʊd/ for *could* or /wʊld/ instead of /wʊd/ for *would*. These mistakes were corrected during class, and overall, they did not interfere severely in communication.

Technical vocabulary and grammatical structures studied in previous classes allowed students to express their ideas in a clear way and also to project confidence and professionalism while defending their proposal and participating in the job interview simulation. In this case as well, 100% of the students were able to correctly use at least one word from the technical vocabulary studied in class and one grammatical structure studied in class. This statistic was supported by the data extracted from the job interview videos. In average, students used technical words 2.5 times in their presentations. All technical vocabulary was properly used. The amount of technical vocabulary depended on each students' proposal. In none of the case a technical vocabulary word was the cause of a misperception or prevented a fluid communication. Furthermore, the initial proficiency level of students might have enhanced the clarity of their message but according to the previous needs analysis it did not represent a significant advantage in regards technical vocabulary use. This is the reason why researchers consider that the use of at least one technical vocabulary word as a positive answer for the research question. One of the course evaluator's comments supports the researchers' finding: "The Ss were highly successful in defending their proposals and this was due to a high extent to the effective use of the necessary ESP vocabulary that the

task required." Furthermore, from the proposal feedback forms, researchers could point some vocabulary that was used by several students, such as the following: biodigestor, wind turbine, power source, axle, and budget. Additionally, the fact that less proficient students such as Students C and D used four and five grammatical structures studied in class during the job interview showed that the grammar studied worked as a scaffold for these students to convey their ideas appropriately and assertively. Table 5 displays the technical vocabulary and grammatical structures used by students during the job interview simulation.

Table 5

Times that students used grammatical structures and technical vocabulary studied in class during a job interview simulation.

Student	Times modals were used	Samples	Times technical vocabulary was used	Samples
A	3	We can build solar panels. You can warm lunches.	2	solar panels, I'm culturally-sensitive
B	2	If I could travel back in time, I would see	5	geothermal plants, wind turbines, solar panels, to install, I'm a proactive person
C	5	We can by compressors; we can combine; I would suggest it	5	compressor, budget, I'm an efficient, innovative, organized professional
D	4	We can use.. I would suggest	1	wind turbines
E	1	I would require, I would say	3	entry level, innovative, biodigestor
F	2	We can use a rough top unit	3	drills, team player, efficient
G	1	They could reduce	2	entry level, solar panel
H	2	I could explore, I could analyze	1	Turbines
I	1	I can work with	1	Innovative
J	1	They can have facilities	2	enthusiastic student, I consider myself

Technical vocabulary for Unit 2 had the particularity that it included mechanical engineering terms such as compressor, drill or wind turbines, but it also included personal description vocabulary such as culturally-sensitive, innovative and

enthusiastic. The language choice responds to the main objective of the Unit which states that students will be capable of effectively briefing their information for a specific job position and participate actively in a job interview. The relation between the Unit goal and the successful use of technical vocabulary and proper grammatical structures was pointed out by one of the class observers: "Students succeeded in the use of ESP vocabulary because the activity (evaluation) was very relevant for them [. . .] as future mechanical engineers [. . .] As an observer, I consider that all the proposals were very interesting and that students defended their solutions with a lot of confidence, fluency and motivation. The use of technical vocabulary was very extensive (wind, residue, combustion engine, centrifugal pump, corrosion, natural gas, maintenance, hydroelectricity, efficiency, solar energy, advantage, air conditioning, compressor, etc.) and students had a very good performance in front of the class." It is worth mentioning that to gather the data for Table 5, the researchers did not take notes while they were interviewing the students. As explained before, the researchers played the role of interviewers; hence, they were fully engaged in the conversations with the students. For this reason, they recorded the students in audio and in video and later analyzed these recordings to be able to come up with the data to determine how successful the students had been at this task.

3. Students' attitudes

The data obtained from Appendix P shed some light on students' attitudes toward the use of real-life simulations as assessment tools in the course. As seen in Appendix P, the students completed a survey that consisted of Likert scales and some specific open questions. The items of the survey were designed to collect data on how students felt about this type of assessment as well as how they felt during the assessment tasks. The results of the survey proved to be very promising for the student-teachers in their quest to investigate how realistic and authentic students perceived the tasks to be. 60% of students agreed that the evaluation tasks were realistic, and 80% of them claimed to be motivated by the fact that the tasks were authentic. These results demonstrate that the evaluations

met one of the key principles of language assessment in that they were authentic and provided students with situations that were natural to their field, interesting, and enjoyable (Brown, 2004).

In addition to responding positively to the authenticity of the assessments, the results of the survey show that students felt aptly prepared for the evaluations. Only 20% of students who completed the survey said that they did not feel prepared for the assessment. The small percentage of students who felt unprepared points to the content validity achieved by the assessments used in units one and two. Brown (2004) defines content validity as "the extent to which the assessment requires students to perform tasks that were included in previous classroom lessons" (p. 32). 80% of students confirmed that the assessment tasks were similar to the tasks done in prior classes. The researchers noted that assessment days closely resembled class sessions and this may have contributed to lower anxiety for students. Results showed that only 40% of students felt nervous during the assessments, while a meager 20% felt frustrated. This data, paired with the fact that 80% of students described the assessments as being fun, reveal that their assessment experience was an overall positive one.

Another important principle of testing that was met by the use of real-life simulations as assessment was washback. Washback is defined as "the effect a test has on teaching and learning" (Hughes as cited in Brown, 2004, p. 28). Content validity usually goes hand in hand with washback, but washback can also refer to it, and how students recognize their strengths and weaknesses after doing an assessment. 60% of students believed that after doing the assessment tasks for units one and two they felt prepared to do the tasks in real life. These results show that these students were able to recognize their strengths, whereas 40% of students recognized that they still needed to improve on some aspects of the tasks in order to successfully complete them in real-life situations. In order to facilitate washback, students were always awarded the opportunity to see the rubrics for each evaluation prior to the assessment tasks. The results from the survey showed that 80% of students knew what they were going to be evaluated on after looking at the rubric. The same percentage of students felt confident in what they had to

do and felt prepared to achieve the highest score on the assessment task. Table 6 below highlights the most important results obtained from the survey.

Table 6

A summary of students' responses to a survey (Appendix P) on their attitudes toward the assessment in units one and two.

Students agreed that	Percentage of students (%)
Evaluations were realistic.	60
They felt motivated by the use of authentic tasks.	80
They felt unprepared for the assessment.	20
The assessment tasks were similar to classroom tasks.	80
They felt nervous during the assessments.	40
They felt frustrated during the assessment.	20
The assessments were fun.	80
They felt prepared to do tasks in real life after assessment.	60
The rubric's descriptions made them feel confident about what they had to do.	80
The rubric made them aware of what was going to be evaluated.	80

The results seen above, and previously discussed clearly affirm that in general students had a positive attitude towards the use of real-life simulation as assessment tools. In order to unearth which assessment was their favorite, the researchers posed the question to students. Figure 8 shows that most students preferred the job interview assessment. Students described it as being "the most realistic" and "the most challenging that took the best out of us."

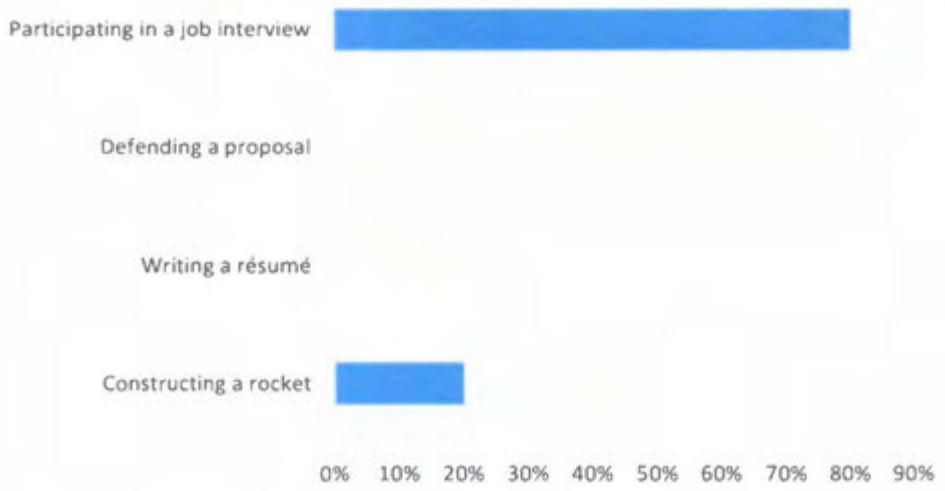

Figure 8: Assessment students enjoyed the most.

The figure illustrates all assessments used in Units 1 and 2 and shows students' preferences in the form of percentages. When asked which assessment was their least favorite, students reported that defending a proposal and constructing a rocket were their least favorites as can be seen in Figure 8. They claimed that they felt nervous in front of their classmates while defending a proposal. This may have been partly related to the fact that the first unit focused mostly on reading and defending a proposal was their first graded oral presentation in unit two. Students may have still been adjusting to speaking in front of their classmates. The researchers believe this because the job interview was done in front of the class three weeks later and students appeared not to have problems with regard to nervousness for this task. With respect to the construction of a rocket, students complained that their teams did not have enough time to complete the assessment task. Most groups were able to complete the task, but the fact that 40% claimed that this was their least favorite task suggests that the student-teachers need to reconsider the practicality of this assessment to find ways to make it more feasible so that all students would be able to complete the task.

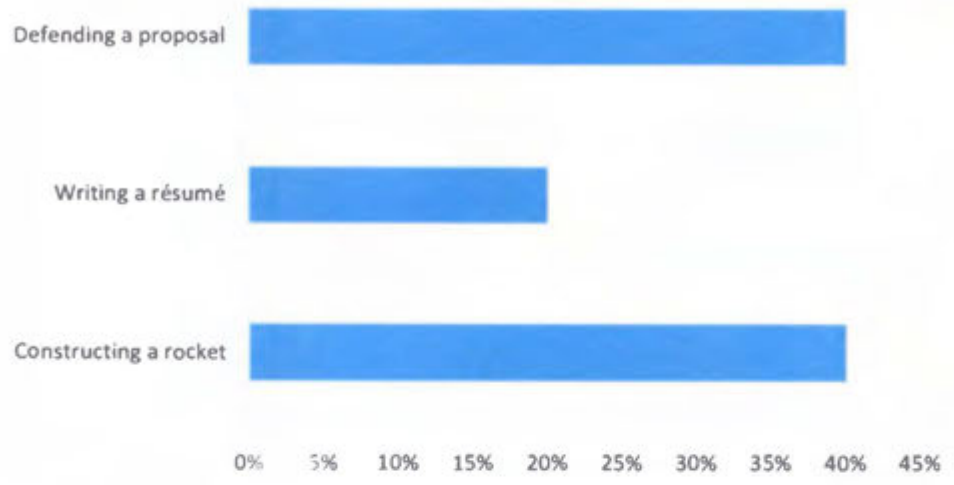

Figure 9: Assessments students enjoyed the least.

This figure illustrates students' least favorite assessments as percentages. The results obtained by the survey clearly affirm that in general students had a positive attitude towards the use of real-life simulation as assessment tools. In addition to revealing students' attitudes, the researchers were also able to conclude, as a bi-product of the survey, that the real-life simulations created by student-teachers for assessment met the cardinal criteria proposed for language assessment.

Conclusions

The following conclusions were made after analyzing the results of this research project. With respect to the extent to which students could use vocabulary specific to the construction of a crane, the researchers observed and concluded that the mechanical engineering students were able to use the proper names of the parts of a crane and use vocabulary related to materials. Through their use of words such as wood and metal, students were able to successfully describe how model cranes are built throughout an entire class. Although students were able to use the appropriate vocabulary, they were only partially successful at using imperative while building their model cranes. The students showed command of the structure only after being taught how to use it, which happened during the post-task stage of the lesson plan. More explicit teaching of the grammatical structure during the pre-task phase could have helped students in making use of the structure in the main task.

The fact that 43% of the students chose building a model crane in class as their favorite in Unit 1 led the researchers to speculate that since students were engaged in multiple levels—reading, listening to their partners, building, fixing, and selecting materials—this activity targeted different types of learners and intelligences, and this may have been the reason why this activity was selected as their favorite.

For Unit 2 the researchers can affirm that 100% of the students were able to effectively use ESP vocabulary and proper grammar structures while defending a work proposal and participating in a job interview simulation. The fact that both evaluations in Unit 2 were real-life tasks that students will most likely face in the future created an interesting challenge for the students which translated into visible engagement towards the tasks throughout different classes. 60 % of students felt prepared to do tasks in real life after participating in the simulations during assessment. The researchers believe that this data reveals that the assessment and its procedures provided positive washback in the sense that students were able to identify their strengths and weaknesses for the authentic situations they

were presented with. In addition to providing positive washback the researchers ascertain that the use of real-life simulations that directly reflect the activities done in previous classes reduces anxiety during assessment. The researchers came to this conclusion because 40% of students felt nervous during assessment, and only 20% of students felt frustrated.

To answer the question posed at the beginning of this last chapter, the TBLT approach has proven to be not only successful when teaching ESP vocabulary and grammatical structures with a population of Mechanical Engineering students, but it has also been regarded, by the students themselves, as motivating and realistic. These two descriptions confirmed that the TBLT approach was the appropriate choice to tackle this challenge, and we encourage future researchers to make use of this approach when dealing with similar populations.

Recommendations

The following recommendations are provided for future research projects to guarantee a successful ESP course.

- The researchers believed that having a unit on helping students become better readers and listeners would be regarded as a very appealing and useful unit. However, when some of students were informally asked about what they thought of the first two units, they said that they preferred unit 2, since the tasks were more realistic. Hence, the researchers suggest that this be considered for future projects. Future researchers can think of including a shorter unit on reading and listening. Even though the researchers thought teaching reading and listening strategies would increase students' motivation—as it would tackle students' immediate needs—, it seemed that the units which focused on delayed needs were more interesting and motivating for students.

- Even though Unit 1 was not considered students' favorite unit, the researchers believed that having this unit was completely necessary, since it also focused on strategy training.
- Taking into account the students' perception towards the evaluation tasks, student teachers should include more individual presentations within the pre-tasks in order to reduce the anxiety that the first open class presentation (in this case, defending their own proposal) creates on students.

Limitations

The researchers were fortunate to work with a group of students who were motivated throughout the course. However, the student-teachers were faced with a few limitations. The biggest limitation was that the student-teachers worked with an almost entirely different population to the population that had completed the needs analysis survey and diagnostic test. Less than half of the eventual students assisted the student-teachers with the information necessary for the design of the course. As a result, the goals and objectives for the course, as well as the procedures and practices used by the student-teachers, may not have been completely custom-made for the eventual students who enrolled.

In addition to dealing with a different population from the one expected, the course started off with 15 students and ended with eight. Students' university obligations along with work commitments were the main reasons for these dropouts. This caused that more students were present for Unit 1 than Unit 2, therefore, researchers had less available students' input for Unit 2 and the continuous evaluation from students was interrupted.

It was not possible to do an information triangulation for Unit 1 due to the fact that the initial phase for the research project started once Unit 1 was almost completely covered. On top of that, the lack of technical skills for audio recordings prevented the researchers to use the recorded material 100%. Some of the audios and videos collected from Unit one were corrupted with excessive noise or bad low pitch.

Due to the nature of this research project, the researchers developed a course for a one-semester class only. This situation prevented the researchers to cover some other contents in which the students were interested, for example: writing a technical report and learning how to use specific software in English. The class only met for four hours per week, which made it paramount for the researchers to prioritize those most urgent needs both students and stakeholders reported as seminal.

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Appendices

Appendix A

Questionnaire for Stakeholders

A. Questions about the program and major

1. What are some of the overall objectives for students in this major? In other words, what do professors want students to gain throughout the major?
2. Can you give us a general description of the course with respect to its demands? Do students have to read a lot? Do they have to carry out investigations, write reports/papers, attend conferences?
3. What makes a mechanical engineering student different from other students in different majors?
4. After graduating, what are the career goals for mechanical engineers? What specific jobs do they hope to get? Can you give us some of the more prominent employers of mechanical engineering graduates?

B. Questions related to English use in the program

1. How important is a student's English level to his/her success in the program?
2. Do students need to speak in English for this program? Why? In what contexts and situations?
3. Do students need to write in English for this program? Why? What do they have to write?
4. Do students need to read in English for this program? Why/what are the objectives? What do they have to read in English?
5. Do students need to listen to English for this program? Why/what are the objectives? What do they have to listen to?

C. Questions related to English use after the program

1. In what sorts of situations would students need to use English after graduating?
2. Would students need to read in English after graduating? What would they have to read? What are some of the topics they would have to read about?
3. Would students need to listen in English after graduating? What would they have to listen to? What are some of the topics they would have to listen to?
4. Would students need to speak in English after graduating? What situations would they have to speak in? What are some of the topics they would have to speak about?
5. Would students need to write in English after graduating? What would they have to write about? Who would be their intended audience?

Appendix B

Questionnaire for Learners

Student Information

The following questionnaire is intended to collect the necessary information to design the course ***Gear up***, based on students' needs. The information collected here will be strictly confidential. The schedule for this course will be on Mondays and Wednesdays from 5 p.m. to 7 p.m. next semester.

Part A. Personal Information

1. Name: _____
2. E-mail address: _____
3. Phone number: _____
4. Age:

   - ☐ 16-17
   - ☐ 18-20
   - ☐ 21-23
   - ☐ 24-26
   - ☐ 27-30
   - ☐ Other: _____

5. Would you prefer to be contacted by

   - ☐ phone
   - ☐ e-mail

6. At this moment, you are taking mostly ___ year courses.

   - ☐ first
   - ☐ second
   - ☐ third
   - ☐ fourth
   - ☐ fifth
   - ☐ Other: _____

Part B. Present Situation Analysis

1. How often do you do the following activities in English at present? Check the most appropriate option for each situation.

	Always	Sometimes	Not very often	Never
Read articles, journals, or books				
Write reports				
Deliver presentations				
Participate in international conventions, symposiums, and conferences				
Explain manuals orally				
Explain manuals in written form				
Describe products orally				
Describe products in written form				
Answer e-mails				
Take quizzes or exams				
Collaborate with foreign students				
Understand explanatory videos				
Reading blueprints				
Write/design blueprints				
Use software (e.g. AutoCAD, ANSYS)				
Explain lab results orally				
Explain lab results in written form				

2. Please check the difficulty level that the following English skills have for you:

	Very difficult	Difficult	Easy	Very Easy
A. Reading				
B. Writing				
C. Listening				
D. Speaking				

3. Self-Assessment: Please read the descriptions for each level and check where you consider that you are located for each skill.

Adapted from Washington English Language Proficiency Assessment http://www.k12.wa.us/assessment/EL/

	Extremely limited use of English (I only understand/ produce words or lists)	Basic use of English (I understand/ create simple phrases about my family and myself)	Intermediate use of English (I understand/ create complete ideas to describe my routines at work or school)	Advanced use of English (I understand/ provide complete narrations in the present, past and future)
A. Reading				
B. Writing				
C. Listening				
D. Speaking				

Part C. Future Work Field

1. How necessary are the following English skills in your future work field? Check the most appropriate option for each skill.

	Extremely necessary	Necessary	Not that necessary	Not necessary at all
A. Reading				
B. Writing				
C. Listening				
D. Speaking				

2. Which are the three most important activities that will require you to use English in your future work field? Please indicate how frequently you will do those activities.
(For example, I will participate in international conferences once a month.)

A._____

B._____

C._____

Part D. Course expectations

1. What are three things you would like to learn how to do in English that are crucial for your job?

(For example, "In this course, I would like to learn how to explain the design of a technical drawing in English.)

A._____

B._____

C._____

2. Complete the following phrase with all of the options that may apply: In this course, I expect my instructors to...

	Yes	No
A. Give lectures		
B. Assign homework		
C. Ask students to work in pairs and in groups		
D. Ask students to participate orally in class		
E. Ask students to read in class		
F. Ask students to write in class		
Other:		

Part E. Learning Preferences

1. Indicate how appealing each of the following classroom activities are according to your learning preferences.

	Little	Not Much	Somewhat	Much
a. Completion (sentence completion with vocabulary, collocations, words, phrases, etc.)				
b. Pair work activities				
c. Group work activities				
d. Class discussions				
e. Note taking while listening				
f. Matching Exercises				
g. Role-plays (e.g. simulating a job interview in class)				
h. Dictionary use				
i. Multiple choice practice				
j. Games				
k. Self-assessment checklists				
l. Graphic organizers (completion, identification, cause & effect, etc.)				
m. Oral Presentations				

2. Which of these areas would you like to learn more about? Select all of the ones that apply.

- ☐ Biomechanics
- ☐ Thermodynamics
- ☐ Electro mechanics
- ☐ Aerospace
- ☐ Robotics
- ☐ Biotechnology
- ☐ Micro-Electromechanical Systems (MEMS)
- ☐ Design and computer-aided design
- ☐ Cybersecurity
- ☐ Alternative Energy
- ☐ Fluids
- ☐ Biomedical engineering
- ☐ Manufacturing
- ☐ Nanotechnology
- ☐ Mechatronics
- ☐ Materials
- ☐ Mechanical Design
- ☐ Other: _____

Thanks for your information!

Appendix C
Diagnostic Test

Universidad de Costa Rica

Maestría Profesional en la Enseñanza del Inglés

English for Mechanical Engineering Students

Gear up

Prueba de Diagnóstico

Instrucciones generales:

- El examen tiene una duración de un máximo de 1.5 horas a partir del momento en que el docente marque el inicio. Utilice los primeros 10 minutos para leer todas las instrucciones cuidadosamente antes de iniciar el examen.
- Utilice solo lapicero negro o azul para escribir sus respuestas.
- No se permite el uso de teléfonos celulares, diccionarios o cualquier tipo de equipo electrónico como apoyo durante la prueba.
- Para aclarar cualquier consulta, levante la mano.

Assigned Rating:

- ☐ Beginner
- ☐ Intermediate
- ☐ Advanced

Student's name:_____

Results obtained

Skills /Points obtained	Points obtained	Total Value	Rating*
Listening		15 pts	
Speaking		50 pts	
Reading		15 pts	
Writing		15 pts	
Average Score		95 pts	

***Listening:**

Beginner: 0 points-5 points

Intermediate: 6 points -10 points

Advanced: 11 points-15 points

***Speaking:**

Beginner: 0 points-20 points

Intermediate: 21 points- 40 points

Advanced: 41 points-50 points

***Reading:**

Beginner: 0 points-5 points

Intermediate: 6 points-10 points

Advanced: 10 points-15 points

***Writing**

Beginner: 0 points-3 points

Intermediate: 4 points-9 points

Advanced: 10 points-15 points

Overall Rating Descriptions

Beginner: 0-33 points

Intermediate: 34-69 points

Advanced: 70-95 points

Comments & Observations:

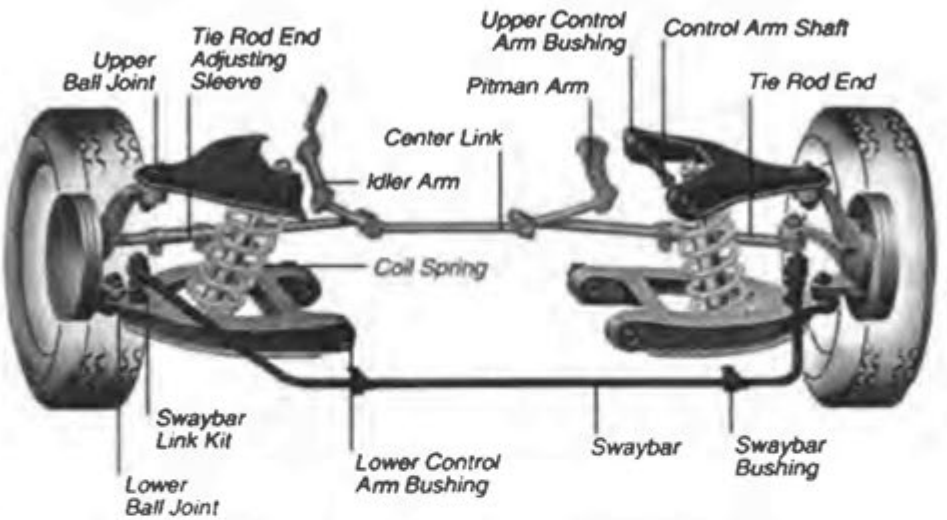
_____

_____

_____

Part I – Reading (15 pts.)

1. Observe the diagram below and circle the correct answers for the questions below. (3 pts.)



Conventional Suspension

Retrieved from: https://www.pinterest.com/pin/468444798722994395/

1) How many Coil Springs are there in the diagram?

   a) one
   b) two
   c) four
   d) none

2) Where is the Swaybar Link Kit?

   a) under the Lower Ball Joint
   b) under the Upper Ball Joint
   c) next to the Control Arm Shaft
   d) between the Pitman Arm and the Center Link

3) What is the Pitman Arm connected to?

   a) nothing
   b) the Center Link
   c) the Control Arm Shift
   d) the Upper Control Arm Bushing

2. Read the following job posting from Boston Scientific and write an X to indicate whether the statements 1-3 below are True (T) False (F) or Not Indicated (NI) below. (3 pts.)

Manufacturing Engineer II

Position Qualifications

Bachelor's Degree in **Engineering**, preferably mechanical, electrical, or chemical engineering.

- 2-5 years of relevant work experience.
- Must be a self-starter and team player.
- Equipment ownership and process validation experience required (IQ/OQ/PQ).
- Experience supporting a fast-paced manufacturing environment.
- Proficient in data analysis and using SW tools such as excel and MS Office.

Preferred Qualifications:

- Medical device industry experience.
- Experience authoring engineering documentation such as validation reports, CAFs and engineering change notices.
- Experience supporting both new product development and production released product.
- Basic statistics background with working knowledge of concepts such as normal distributions and six sigma.

Retrieved from: http://jobs.bostonscientific.com/job/Arden-Hills-Manufacturing-Engineer-II-Job-MN-55112/390480700/

	T	F	NI
1. Only mechanical engineers can apply for this position.			
2. Medical device industry experience is mandatory.			
3. Candidates applying for this position have to be at least 30 years old.			

3. Read the following text and circle the correct answers for the questions below. (4 pts.)

Candle-powered boat

The goal of this contest is to design and construct a boat that uses a single candle as an energy source for propulsion and travels as fast as possible using only this energy source. You will race your boat against those built by other teams.

Design rules

The boat will use a single "tealight" candle, supplied by the "race officials." No other stored energy sources (e.g. other fuels, batteries, rubber bands, gravitational potential energy, "general purpose heat sources", etc.) are allowed. You may use naturally occurring wind or solar power instead of or in addition to the candle, however, there is no guarantee that there will be any direct sunlight or wind on the day of the contest.

You may use a "Pop Pop Boat" type of design, and in fact you may use a store-bought boat, however, if that's all you do you won't be getting a very good score on the project report due to a lack of creativity, originality and level of effort. I do, however, suggest buying a Pop Pop Boat as a starting point for your own design. There is no requirement, however, that you use a Pop Pop type of boat. For example, you could use the candle and sunlight to heat a thermoelectric module on one side, use the water to cool the other side, and use the electricity generated by the thermoelectric module to drive a motor / propeller system.

You can build and use as many different boats as you wish on race day; you do not need to use the same boat for each race, but of course in any given race you can only use one boat. It is suggested that you bring at least one back-up boat on contest day so that if your "A-team" boat fails you'll at least have something else to enter in the remaining races. The boat must be autonomous. No remote power, wires or radio-control links are allowed.

Retrieved from: http://ronney.usc.edu/AME101/AME101-LectureNotes.pdf

1) What do candidates have to build for this competition?

a) boat that wins the race
b) fast boat that uses any type of energy
c) boat that uses multiple energy sources
d) boat that only uses a single candle as its energy source

2) What sort of energy sources are permitted?

a) fuels
b) batteries
c) solar power
d) gravitational potential energy

3) Why do the instructions discourage candidates from using an unmodified store-bought boat?

a) It will be slower than the other boats.
b) Candidates will lose points for creativity.
c) Store-bought boats are too big for the race.
d) Store-bought boats will give candidates an unfair advantage.

4) How many races can you enter?

a) only one
b) only two races
c) as many as you want
d) The number of races you enter must correspond to the number of boats you have on the day

4. Read the following text and decide if the statements 1-5 below are true (T) false (F) or Not Indicated (NI). Write an X in the appropriate box. (5 pts)

Distributed Forces Momentum of Inertia

The purpose of section 9.2 is to give motivation to the study of moments of inertia of areas. Two examples are considered: one deals with the pure bending of a beam and the other with the hydrostatic forces exerted on a submerged circular gate. It is shown in each case that the solution of the problem reduces to the computation of the moment of inertia of an area. The other sections in the first assignment are devoted to the definition and the computation of rectangular moments of inertia, polar moments of inertia, and the corresponding radii of gyration. It is shown how the same differential element can be used to determine the moment of inertia of an area about each of the two coordinate axes.

Sections 9.6 and 9.7 introduce the parallel-axis theorem and its application to the determination of inertia of composite areas. Particular emphasis is placed on the proper use of the parallel-axis theorem (see Sample Prob 9.5). Sections 9.8 through 9.10 are optional; they are devoted to

Retrieved from:
http://www.academia.edu/15301737/Vector_Mechanics_for_Engineers_Statics_9th_Edition_Solution_Manual

	T	F	NI
1. Section 9.2 tries to motivate the study of moments of inertia of areas.			
2. The computation of the moment of inertia of an area is the problem.			
3. One of the topics covered in the first assignment is the polar moments of inertia.			
4. Section 9.6 and 9.7 only focus on the parallel-axis theorem.			
5. Section 9.9 is optional.			

Part II. Listening (15 pts.)

A. Listen to a tutorial video about chemistry and check under true (T) or false (F according to the information provided in the audio. Write an X in the appropriate box. (5 pts)

Retrieved from https://www.youtube.com/watch?v=i7d6RETP6PQ

	True	False
1. Chemistry and physics are basically the same.		
2. Chemistry uses the scientific method to carry experiments.		
3. How a substance will react to different conditions is part of chemistry.		
4. Chemists have isolated 228 elements in the periodic table		
5. Marie Curie and John Dalton are famous chemists.		

B. Listen to a short interview from *Myth Busters* and circle the correct option for the following questions according to the information provided in the audio. (5 pts.)

Retrieved from https://www.youtube.com/watch?v=RmP5aecaDk

1. Jamie Hyneman wishes he had taken an engineering course

   a) so can make more money now.
   b) because it would have made his work easier.
   c) but he doesn't have time to slow down for a course structure.

2. The interviewer was disenchanted because

   a) Jamie didn't give him enough information.
   b) his garage was not very big to do experiments.
   c) when he was in school he didn't build anything.

3. Most universities now are going for _____ mentality.
   a) Do it yourself
   b) Buy it yourself
   c) Build it yourself

4. What do they keep in the storage room?
   a) administrative paperwork
   b) models for future experiments.
   c) props and junk from previous episodes.

5. Jamie and Adam plan the episodes in
   a) storage room
   b) outdoor locations
   c) store action locations

C. Listen to an interview to a wind turbine mechanic and provide short answers for the following questions. (5 pts.)

Retrieved from http://www.npr.org/2014/10/24/358631305/wanted-wind-turbine-mechanic-must-be-daredevil-skilled-with-hands

1. What is the main task for a wind turbine mechanic?

2. Where is the interview taking place?

3. Is the market requiring a lot of wind turbine technicians?

4. What is the average salary for a turbine technician?

5. How many turbines are expected to be built in the next decade in the United States?

Part III. Writing (15 pts.)

You are currently working on creating a new alternative energy storage and utilization system to be presented at the international green fair taking place this year at UCR. Write an e-mail to President Dr. Henning Jensen Pennington informing him of what you have done so far. Make sure that in your e-mail you include the following information:

1. Brief description of your project.
2. What you have done so far.
3. The advantages of your project.
4. The disadvantages of your project.

Extension required: 15 lines minimum and 20 lines maximum.

jensen.pennington@ucr.ac.cr

Writing Rubric

Element assessed	5	3	1	Tot. Pts.
For each of the following tasks, the student ...				
Task	answers the four questions concisely and effectively.	answers two of the questions concisely and effectively.	answers one of the questions concisely and effectively.	
Content	provides content related to the topic and which demonstrates full understanding of the questions.	provides content related to the topic most of the times and understanding of the prompts is sometimes vague.	provides answers that are unrelated to the topic, showing no clear understanding of the prompts.	
Structures	uses appropriate structures to show correct use of verb tenses, pronouns, word order, subject verb agreement, questions and negatives constructions most of the time.	uses verb tenses, pronouns, word order, questions and negatives with some difficulty. The mistakes made do not hinder meaning.	does not show correct use of verb tenses, pronouns, word order, questions and negatives. There are major signs of linguistic breakdown.	
Total Points/Comments:				

Part IV. Speaking (55 pts.)

Guide for Oral Interviews

Question	Function
1. Can you tell me a little bit about yourself? a. What is your routine like? b. What do you normally do in class?	Warm-up
2. Can you tell me about a typical week? a. What is your routine like? b. What do you normally do in class?	Provide descriptions and create with language
3. When did you decide that you wanted to study Mechanical Engineering? a. Can you tell me about your first day here in college? What was it like? Please tell me what happened from beginning to end. b. Can you tell me about a memorable experience while studying Mechanical Engineering? Please tell me what happened from beginning to end.	Narrate
4. Role-play situation	Provide descriptions, give instructions, provide explanations, narrate in the future.
5. Wind down	Go back to comfort level

Oral Situation 1 (Interviewee)
Instructions:
As part of the senior staff at Boston Scientific, you were asked to provide several on-site training sessions for twenty Manufacturing and Operations employees at Boston Scientific, Singapore. These are employees who don't know much about the field of engineering but would like to continue learning so that they can apply to better job positions within the company. As part of the objectives related to professional development, the company appointed you as their trainer. Please provide these workers with the necessary information. They need to understand: 1. what technical drawings are 2. the materials needed to make a technical drawing. 3. the steps required to follow to make a technical drawing. 4. the importance of technical drawings.

Oral Situation 1 (Interviewer)
Instructions:
You are a worker at Boston Scientific, Singapore. A Mechanical Engineer will come all the way from Costa Rica to explain what technical drawings are, the materials you need for a technical drawing, the steps you need to follow to make one, and finally their importance. Please ask all of the necessary questions to make sure you understand all of the information.

Oral Situation 2 (Interviewee)
Instructions:
You are part a project within your company that helps promote technology literacy among unprivileged members of the community where your company is located. Your job reflects part of the social responsibility objectives that you set to accomplish for this year. For that, you will be visiting a group of people who have very little access to technology and have been experiencing some power shortages in the last year. They need a solution to provide their families with electricity, specially using alternative methods, as the resources are limited in the area. Please, explain this group of people how: 1. wind turbines work. 2. they can build a solar-powered wind turbine with materials they have at home.

Oral Situation 2 (Interviewer)
Instructions:
You are a member of a community that constantly faces power shortages. This has been reported to the authorities, but they don't seem to be doing anything about it. You asked for help and one technology company decided to teach you and the other members of this community about wind turbines and how to build one from scratch so that you can supply you community with electricity at all times. Please ask all of the necessary questions to make sure you understand what you are supposed to do.

Oral Situation 3 (Interviewee)
Instructions:
You are at a job interview at Neo Nieto. You will be in charge of overseeing the production of air conditioning systems. However, they need to know how much you know about refrigerant gases. Please, briefly explain how these gases work and how you will oversee the manufacturing of air conditioning systems.

Oral Situation 3 (Interviewer)
Instructions:
You are in charge of the Human Resources Department and need to hire a new Mechanical Engineer who will be in charge of overseeing the production of air conditioning systems. You must make sure this person knows about refrigerant gases. Additionally, you need to know what s/he will do to oversee the manufacturing of air conditioning systems.

Oral Interview Rubric Student's name: _____ Grade: _____

Category/ Rating	Description					Score
Task Completion 10pts	S addresses the prompts and the role-play situation correctly. 10-9 pts.	S occasionally addresses the prompts and the role-play situation correctly. 8-7 pts.	S partially addresses the prompts and the role-play situation correctly. 6-5 pts.	S barely addresses the prompts and the role-play situation correctly. 4-3 pts.	S doesn't address the prompts nor the role-play correctly. 2-1 pts.	
Grammar 15pts	S uses grammatical structures correctly at all times. 15-13 pts.	Most of the times S uses grammatical structures appropriately. 12-10 pts.	S uses appropriate grammatical structures occasionally. 9-7 pts.	S rarely uses grammatical structures appropriately. 6-4 pts.	S doesn't use grammatical structures appropriately. 3-1 pts.	
Pronunciation 15pts	Student's pronunciation is clear most of the time. Stress and intonation are appropriate most the time. 15-13 pts.	Student's pronunciation is usually clear. Effective use of stress and intonation. 12-10 pts.	Student's pronunciation is sometimes unclear. Stress and intonation are sometimes used correctly. 9-7 pts.	Student's pronunciation isn't clear most of the time. S rarely uses stress and intonation correctly. 6-4 pts.	Student's pronunciation isn't clear. Stress and intonation are not appropriate. 3-1 pts.	
Vocabulary 5pts	Rich use of vocabulary, including technical vocabulary. 5 pts.	S uses vocabulary appropriate for the level most of the time. 4 pts.	S sometimes uses vocabulary appropriately. 3 pts.	S seldom uses vocabulary appropriately. 2 pts.	Inaccurate or inadequate use of vocabulary. 1 pt.	
Fluency 5pts	No hesitation. No communication breakdowns. 5 pts.	Little hesitation that creates minor communication breakdowns. 4 pts.	Some hesitation that creates moderate communication breakdowns. 3 pts.	Significant hesitation that creates communication breakdowns. 2 pts.	Frequent interferences with communication that create major breakdowns. 1 pt.	

Comments:

Appendix D

Student Syllabus

Universidad de Costa Rica
Maestría en la Enseñanza del Inglés como Lengua Extranjera
Gear Up – English for Mechanical Engineering Students
Instructors: Elizondo, J., Pilgrim, Y., & Sánchez, A.
Mondays & Wednesdays from 5 p.m. to 6:50 p.m.

I. Course Description

This is an ESP course intended for Mechanical Engineering students at UCR. By the end of the course, the students will be able to comprehend texts associated with Mechanical Engineering and to communicate both orally and in written form at an intermediate English level within their field for academic and work-related purposes.

The class will be team-taught by three student-teachers who are language instructors. They will develop a task-based methodology throughout the course. This class will meet twice a week, two hours per day in room (TBA). Attendance is not mandatory or assessed; however, any student with more than 3 absences will not qualify to obtain the university's certification for the course.

II. Goals and Objectives

Unit 1- Getting it right

By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

Unit 2 - Job, here I come!

By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

Unit 3: Going International

By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

III. Methodology

The course is divided into three units. The students will carry out tasks in class strictly related to their reality as Mechanical Engineering students and future professional Mechanical Engineers. These tasks will integrate the four macro skills: speaking, listening, reading, and writing. The tasks will be done individually, in pairs, or groups. They will include class presentations, debates, role-plays, reading and listening comprehension activities, writing, among others.

IV. Assessment

Each of the units will be assessed according to the goals established.

Task	Percentage
• Academic performance (reading and listening academic task)	20%
• Oral Presentation I (presentation of a previous academic project)	20%
• Job interview simulation	20%
• Written mini projects (e-mail and resume)	15%
• Oral Presentation II (participation in meetings and conferences; specific tasks coordinating site visits, updates, ordering machine parts)	25%

I. Class information

- ✓ The students are not required to bring a dictionary to class; however, having one, either physically or electronically, can be useful.
- ✓ The students are not to pay for any of the material or the certificate at the end of the course.
- ✓ Punctuality and class participation are expected of all students.

II. Course Calendar

Week	Unit	Contents/Activities	Assessment
Week 1	Unit 1	Reading about fluids	
Week 2	Unit 1	Listening about fluids	
Week 3	Unit 1	Assembling a machine in class and watching videos about mechanical design issues	
Week 4	Unit 1	Practicing for academic task	**Academic task**
Week 5	Unit 2	Writing a résumé	
Week 6	Unit 2	Defending a proposal	**Hand in resume**
Week 7	Unit 2	Presenting previous academic project	**OP#1**
Week 8	Unit 2	Participating job interviews	
Week 9	Unit 2	Practicing job interview simulations	**Job interview simulation**
Week 10	Unit 3	Writing e-mails	
Week 11	Unit 3	Writing e-mails	**Sending an e-mail**
Week 12	Unit 3	Presenting a project	
Week 13	Unit 3	Participating in meetings	
Week 14	Unit 3	Participating in meetings	
Week 15	Review		
Week 16			**OP#2**

Appendix E

Assessment Rubric			
Résumé			
Student's name:		**Grade:**	
Category	**Description**	**Points assigned**	**Score**
Task completion	Students submit a complete resume with at least 3 sections: heading, summary & education.	1 pt.	
Language Use	Students are capable of using proper English structures and spelling. Students are able to use attractive, realistic and creative descriptions of themselves while using proper English structures, vocabulary and spelling.	1-5 pts	
Format	Students use proper margins, font, size and sections' organization.	1-4 pts	
	Total	**10 pts**	

Student Performance Assessment Rubric

Comments

Appendix F
ESP Course Assessment Instrument

Course Assessment

The following questionnaire is designed to collect student feedback on Unit 1. Your answers are very important to us and will help with the improvement and success of the course.

Part 1. Course Content

Please take a moment to rate the following statements. Indicate you answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly 3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	The content presented in Unit 1 was relevant to me.				
(b)	The content presented in Unit 1 was interesting to me.				
(c)	The content was presented in a realistic way.				
(d)	The content of Unit 1 reflected what I normally read in my engineering program.				
(e)	I will continue to use the strategies I learned in Unit 1 in my engineering program.				
(f)	The content from Unit 1 has made me a better reader.				

Part 2. How difficult was Unit 1?

Please rate the following items. Indicate your answer by placing an X in the appropriate column.

1- Extremely Easy 2- Easy 3- Difficult 4- Extremely Difficult

	Statements	1	2	3	4
(a)	The tasks from Unit 1				
(b)	The readings from Unit 1				
(c)	The strategies presented by the instructors				
(d)	The evaluations of Unit 1				

Part 3. Did you enjoy Unit 1?

Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly 3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	The activities in Unit 1 were presented in a fun way.				
(b)	The tasks were appealing to me.				
(c)	The instructors used a variety of activities.				
(d)	The class felt boring.				

(e) Think about the tasks and activities that you did in Unit 1. Write down at least two activities that you enjoyed the MOST.

_____

(f) Write down two activities that you liked the LEAST from Unit 1.

_____

Part 4. Organization

Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly 3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	Unit 1 was well organized.				
(b)	The objectives of each lesson were clear to me.				
(c)	The stages of the lessons guided me to achieve the objective of the lesson.				
(d)	The lessons from Unit 1 prepared me for the evaluation.				
(e)	I had sufficient time to complete the tasks in class.				

Part 5.

(a) What did you learn in Unit 1?

_____

_____

(b) What would you like to change about the course?

_____

_____

(c) As a result of your work in Unit 1, which skills have you improved the most? CIRCLE one of the options below.

Speaking Writing Listening Reading

(d) Please make any additional comments in the space below.

Appendix G

Student-Teacher Performance Assessment Instrument

Teacher evaluation[1]

The purpose of this instrument is to obtain information about our performance as teachers. **Circle the name of the teacher you are evaluating:**

Andrea Fabián Yannick

A. Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Excellent 2- Very Good 3- Average 4- Poor

	Teacher's performance	1	2	3	4
(a)	Teacher is prepared for class.				
(b)	Teacher manages time well.				
(c)	Teacher gives instructions clearly.				
(d)	Teacher uses activities that help students learn.				
(e)	Teacher gives students opportunities to participate.				
(f)	Teacher makes the classroom a positive place to learn.				
(g)	Teacher uses materials that help students learn.				
(h)	Teacher gives useful feedback.				
(i)	Teacher respects students.				
(j)	Teacher helps students when they ask for help.				

B. Please write about something that your teacher knows how to do really well.

____

C. Please write about something you believe your teacher can improve.

____

Thank you so much for your feedback!

[1] Adapted from: https://www.researchgate.net/file.PostFileLoader.html?id=586aa5074048544a01464a94&assetKey=AS%3A446159287263234%401483118407[illegible]

Appendix H

Unit 1: Getting it right!

Objective	Tasks	Skills	Language Focus	Strategies	Time allotted
a)	Guessing meaning from context	R W S	**Vocabulary** *Subordinators*: Nevertheless, furthermore, thereby, indeed, on the other hand, thus, meanwhile, in addition. *Lexical expressions:* merge into, engage in farming, per capita, per day, stagnant, cease, vanish, sewage, phenomena, hydraulics, hydrodynamics, conduit, eddies, efflux, drag, non-viscous, raft, resistive, advent, render, laminar flow, parallel plates.	**Metacognitive**: Monitoring leaning process	One lesson

			Grammar *Passive Voice:* Such movement is called "the flow." The movement can be regarded as forms of flow. History could be regarded as forms of flow. The science of flow has been classified into hydraulics and hydrodynamics. Canals were discovered in Egypt. *Expletives to give information from other sources or to show distance:* It is believed that... It has been confirmed that canals had been constructed more than 4000 years B.C.		

			Nominalization: Throwing balls and hitting golf balls are all acts of flow. *Fronting*: So also are… and so also is the resistance. Noun + noun collocations: Water system, irrigation canals, water channels. **Pronunciation** -ed endings		
b)	Identifying the main idea from aural text	L W S	**Vocabulary** *Lexical expressions:* To account for, at normal conditions, drag and lift, aneurism, stress, shearing stress, tensile stress, planes, tangential, dye, momentum, dash-line, adjacent, viscosity, no-slip condition, stirrer, shear strain rate.	**Cognitive:** Identifying main ideas, supporting details, and examples.	Two lessons

			Culture-related expressions: Is that ringing a bell? **Grammar** *Conditionals:* If I do this, this gap will move. Linear momentum is conserved if there are no external forces. If I have a flow over a wing, then the fluid that is touching the wing is not moving with respect to the wing. *Simple Future and modals to explain scientific principles:* A fluid that is in contact with a surface will have the velocity of that surface. The mass that disappeared from one place must be somewhere else.	**Metacognitive:** Evaluating leaning process	

			Pronunciation Shearing, substance, surface, thermodynamics, vapor, situation, viscosity, dye, quantitative, measure, Newtonian, momentum, kinematic.		
c)	Assembling a machine	R W S	**Vocabulary** *Lexical expressions:* Far enough, glue something in place, cut off, cut along, inserted into, attach to, turn freely, ladder, set something aside, thread up, tie, end (of an object), edge, crane, axle, spool, thread, slits, tooth pick, winch, string, wind (verb), load, snugly, even (adjective). **Grammar** *Imperatives for providing instructions:* Lay two sticks vertically on a flat surface. Glue them in place.	**Cognitive:** Guessing meaning from context **Metacognitive:** Monitoring leaning process	One lesson

			Repeat the pattern on the opposite side. **Pronunciation** Key words: crane, vertically, winch, wind, spool, thread, ladder.		
d)	Explaining how machines work	L W S	**Vocabulary** *Lexical expressions:* It comes at a cost, the bulk of our research, similar to, to couple, stick the landing, as far as the quad's concerned, quadricopter, quads, propellers, algorithm, roll, pitch, yaw, hover, inherently, spill, model-based design, nudges, augment, pointer, relinquish, exploit, roughly, maneuver, triple flip, diver. *Transition words:* Unlike, in fact, like before, in this instance.	**Cognitive:** Guessing meaning from context **Metacognitive:** Evaluating leaning process	Two lessons

			Culture-related expressions: We can't help but to hold our breath. **Grammar** *Causative verbs:* That's how we can make the quad hover. We let the pole drop. *Present participles in adjectival functions:* A moving ball, cameras serve as an indoor global-positioning system. *Correlative conjunctions:* Not only to hover but also balance this pole. Machines cannot only perform dynamic maneuvers on their own; they can do it collectively.		

			Modals for speculation: They may be used to improve the human condition. They may be misused and abused. **Pronunciation** - s/es endings for plurals and verbs (quads, propellers, pairs, hovers, hexacopters, models, machines, algorithms, cameras)		

Unit 2: Job, here I come!

Objective	Tasks	Skills	Language Focus	Strategies	Time allotted
a)	Writing a resume	R W S	**Vocabulary** *Noun phrases:* cross-functional management, customer database, product updates, project-management role, distribution control, cost analysis, and others. *Action verbs*: Attend, train, inspect, perform, work, supervise, complete, receive, maintain, develop, enforce, adapt, deliver, recruit, test, map and others. **Grammar** *Simple past and descriptions:* I was in charge of... I used to...	**Cognitive:** Searching for details and key words, identifying examples and proofreading. **Metacognitive:** Monitoring and managing their own learning.	Two lessons

			I would... We developed... **Pronunciation** Review regular verbs –ed ending		
b)	Participate in a job interview simulation.	S L	**Vocabulary** *Expressions for past actions:* A few weeks/months ago... Last year/decade/... Two years ago... During 2016... From 2015 to 2016... **Grammar** *Present perfect & present perfect continuous:* I have been... We have been... I have been working... I have been developing I have been researching... **Pronunciation**	**Cognitive** Repetition for clarification. Pausing to clarify ideas. Summarizing and organizing information. **Metacognitive** Performance evaluation and monitoring.	Two lessons

			Modals contractions & linking: I've / we've / they've		
c)	Advocating for a specific proposal	S L	**Vocabulary** *Persuasive Language:* I'd strongly suggest... I'd recommend... From my experience... Studies have proved... Most professionals... The latest trends... **Grammar** *Modals for hypothetical situations:* The company should consider... We should keep in mind ... They must think of ... We might want to consider... **Pronunciation** Modal contractions review	**Cognitive** Probing questions. Summarizing meaning and repetition of ideas. **Metacognitive** Performance evaluation and problem solving.	One lesson

Unit 3: Going international!

Objective	Tasks	Skills	Language Focus	Strategies	Time allotted
a)	Requesting information via e-mail.	R W S	**Vocabulary** Replacement, quotation, invoice, to fit dimensions, defective, have X repaired/replaced **Grammar** *Formal requests:* Could you... Would you... I would be grateful if... Please send me... **Pronunciation** Could and would. Intonation patterns for yes/no questions with could and would	**Cognitive:** Identifying main ideas, supporting details, and examples, text reconstruction. **Metacognitive:** Advanced organization	Two lessons
b)	Giving explanations via e-mail	L W S	**Vocabulary** Condenser, compressor, inlet, outlet, suction line, discharge line,	**Cognitive:** Identifying main ideas, supporting details, and	Two lessons

			refrigerant flow, metering device, valve **Grammar** *Justification of requests:* It's extremely important that... We are in urgent need of... *Conjunctions*: Although, even though, because, due to, and but. **Pronunciation** *Realization of key vocabulary terms:* Although, even though, suction, metering, refrigerant	examples, summarizing, information transfer, and proofreading. **Metacognitive:** Advanced organization	
c)	Presenting a project	L S R	**Vocabulary** Set up, come across a problem, end up, put together, iron out, think over, work X out.	**Cognitive:** Linguistic inferencing, paralinguistic	Two lessons

			Grammar *Simple present for introductory statements:* The topic of my presentation is... The purpose of today's presentation is... My/our objective is... *Present Perfect/Present Perfect continuous:* We've developed...We've been working on **Pronunciation** Review of contractions: I've, we've, I'd, We'd	inferencing, and resourcing **Metacognitive:** Advanced organization, and performance evaluation **Socioaffective:** Cooperative	
d)	Participating in a meeting	L S R	**Vocabulary** Brainstorm, consensus, wrap up, schedule, launch, lead, hand over, sum up	**Cognitive:** Paraphrasing, questioning for clarification	Two lessons

			Grammar *Clarifying and referring to previous points:* Let me expand on that... Let me put it another way... Let's go back to my earlier point... *Interrupting*: I'm sorry, but... I'm sorry to interrupt, but... *Keeping your turn:* I'm sorry but I haven't finished. **Pronunciation** Intonation patterns for interrupting, asking for clarification and taking turns.	**Metacognitive:** Advanced organization, directed attention, performance evaluation **Socioaffective:** Cooperation	

Appendix I

Instrument 1- Course Evaluator

The purpose of this instrument is to gather data to determine if the students used the appropriate ESP vocabulary and the correct grammatical structures needed to effectively explain how cranes are built.

B. Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Always 2- Usually 3- Sometimes 4- Almost Never

	Students' performance	1	2	3	4
a)	During the main task, Ss used the appropriate name of each part of a crane to explain how to build their crane.				
b)	During the main task, Ss used the vocabulary related to materials to explain how to build the crane.				
c)	During the main task, Ss used imperatives to explain how to build the crane.				
d)	During the post-task, Ss used imperatives to explain how they built a model crane.				
e)	During the post-task, Ss used sequence markers to explain how cranes are built.				

C. If you rated any of the previous statements with a 4 (poor), please provide us with some information about what made you rate the statement as such in the spaces below.

_____

_____

_____

D. Based on your observation, why do you think

1. the Ss succeeded/ didn't succeed in using the appropriate ESP vocabulary needed to effectively explain how model cranes are built?

_____

_____

_____

2. the Ss succeeded/ didn't succeed in using imperatives to effectively explain how model cranes are built?

_____

_____

_____

Thank you so much!

Appendix J

Instrument 2- Course Evaluator

The purpose of this instrument is to gather data to determine if the students used the appropriate ESP vocabulary and the correct grammatical structures needed to defend a proposal.

A. Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1. Agree Completely 2- Agree Mostly 3- Disagree Mostly 4- Disagree Completely CR- Can't recall

	Students' performance	1	2	3	4	CR
a)	Ss used the appropriate ESP vocabulary needed to defend a proposal.					
b)	Ss used the modal auxiliaries (could, would, should) when defending their proposals.					
c)	Ss used other necessary grammar structures to defend their proposals.					
d)	Ss described their proposals clearly.					

B. If you rated any of the previous statements with a 4 (disagree mostly), please provide us with some information about what made you rate the statement as such in the spaces below.

_____

_____

_____

C. Based on your observation, why do you think

1. the Ss succeeded/ didn't succeed in using the appropriate ESP vocabulary needed to defend a proposal?

_____

_____

_____

3. the Ss succeeded/ didn't succeed in using the modals "can/ could/ should/ would" to defend a proposal?

_____

_____

_____

Thank you so much!

Appendix K

Proposal Assessment Rubric (20%)			
Student's name:			
Category	**Description**	**Points assigned**	**Score**
Strategies	Student is able to use at least one speaking strategy studied in class	1 pt	
Language use	Student is capable of using proper English structures and pronunciation.	1-2 pts	
Vocabulary	Student uses useful vocabulary studied in class in his/her proposals.	1-3 pts	
Communication	Student is able to clearly describe his/her own proposal	1-4 pts	
	Total	**10 pts**	
Comments			

Appendix L

Job Interview Simulation Rubric (20%)					
Student's name:					
Category	**Description**	**Points assigned**			**Score**
		Excellent	**Average**	Poor	
Strategies	Student is able to use at least one speaking strategy studied in class	**5 pts**	3 pts	**1 pt.**	
Communication	Student is able to clearly describe his/her own ideas and point of view.	**5 pts**	**3 pts**	**1pt**	
Vocabulary	Student uses useful vocabulary studied in class in his/her interview.	**5 pts**	**3 pts**	**1pt**	
Language use	Student is capable of using proper English structures and pronunciation.	**3 pts**	2 pts	**1 pt.**	
Dress code/Body language/ Manners	Student shows understanding of these features by using the tips given in class.	**2 pts**	**1 pt.**	**0.5 pt.**	
	Total				**20 pts**
Comments					

Appendix M
Unit 2 - Job, here I come!

Handout 61 - Self-assessment

Name: _____ _____**pts/ 15 points**

- In the pairs, discuss the following questions:

1. How did you feel defending your proposal in front of the class?
2. Was it difficult to evaluate a classmate? Why? Why not?
3. What do you think that you can improve when defending a proposal of your own?

- Individually, please rate the following statements. Indicate your answer by placing an X in the appropriate column according to the scale below. This section will count as part of your evaluation today.

5-Excellent 4-Very Good 3- Average 2-Poor 1-Very Poor

	Your performance	1	2	3	4	5
1.	I was able to describe a proposal of my own for a specific problem.					
2.	I used one or more strategies learned in class to defend my proposal.					
3.	I was able to express my ideas clearly.					
	Total					

Appendix N

Course Assessment-Unit 1

The following questionnaire is designed to collect student feedback on Unit 1. Your answers are very important to us and will help with the improvement and success of the course.

Part 1. Course Content

Please take a moment to rate the following statements. Indicate you answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly

3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	The content presented in Unit 1 was relevant to me.				
(b)	The content presented in Unit 1 was interesting to me.				
(c)	The content was presented in a realistic way.				
(d)	The content of Unit 1 reflected what I normally read in my engineering program.				
(e)	I will continue to use the strategies I learned in Unit 1 in my engineering program.				
(f)	The content from Unit 1 has made me a better reader.				

Part 2. How difficult was Unit 1?

Please rate the following items. Indicate your answer by placing an X in the appropriate column.

1- Extremely Easy 2- Easy

3- Difficult 4- Extremely Difficult

	Statements	1	2	3	4
(a)	The tasks from Unit 1				
(b)	The readings from Unit 1				
(c)	The strategies presented by the instructors				
(d)	The evaluations of Unit 1				

Part 3. Did you enjoy Unit 1?

Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly

2- 3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	The activities in Unit 1 were presented in a fun way.				
(b)	The tasks were appealing to me.				
(c)	The instructors used a variety of activities.				
(d)	The class felt boring.				

(e) Think about the tasks and activities that you did in Unit 1. Write down at least two activities that you enjoyed the MOST.

_____

(f) Write down two activities that you liked the LEAST from Unit 1.

Part 4. Organization

Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly
2- 3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	Unit 1 was well organized.				
(b)	The objectives of each lesson were clear to me.				
(c)	The stages of the lessons guided me to achieve the objective of the lesson.				
(d)	The lessons from Unit 1 prepared me for the evaluation.				
(e)	I had sufficient time to complete the tasks in class.				

Part 5.

(a) What did you learn in Unit 1?

_____

(b) What would you like to change about the course?

_____

(c) As a result of your work in Unit 1, which skills have you improved the most? CIRCLE one of the options below.

Speaking Writing Listening Reading

(d) Please make any additional comments in the space below.

Appendix O

Course Assessment-Unit 2

The following questionnaire is designed to collect student feedback on Unit 2. Your answers are very important to us and will help with the improvement and success of the course.

Part 1. Course Content

Please take a moment to rate the following statements. Indicate you answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly

3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	The content presented in Unit 2 was relevant to me.				
(b)	The content presented in Unit 2 was interesting to me.				
(c)	The content was presented in a realistic way.				
(d)	The content of Unit 2 reflected what I normally read in my engineering program.				
(e)	I will continue to use the strategies I learned in Unit 2 in my engineering program.				
(f)	The content from Unit 2 has made me a better reader.				

Part 2. How difficult was Unit 2?

Please rate the following items. Indicate your answer by placing an X in the appropriate column.

1- Extremely Easy 2- Easy

3- Difficult 4- Extremely Difficult

	Statements	1	2	3	4
(a)	The tasks from Unit 2				
(b)	The readings from Unit 2				
(c)	The strategies presented by the instructors				
(d)	The evaluations of Unit 2				

Part 3. Did you enjoy Unit 2?

Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly

2- 3- Disagree Mostly 4- Disagree Completely

3-

	Statements	1	2	3	4
(a)	The activities in Unit 2 were presented in a fun way.				
(b)	The tasks were appealing to me.				
(c)	The instructors used a variety of activities.				
(d)	The class felt boring.				

(e) Think about the tasks and activities that you did in Unit 2. Write down at least two activities that you enjoyed the MOST.

(f) Write down two activities that you liked the LEAST from Unit 2.

Part 4. Organization

Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly
2- 3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	Unit 2 was well organized.				
(b)	The objectives of each lesson were clear to me.				
(c)	The stages of the lessons guided me to achieve the objective of the lesson.				
(d)	The lessons from Unit 2 prepared me for the evaluation.				
(e)	I had sufficient time to complete the tasks in class.				

Part 5.

(a) What did you learn in Unit 2?

(b) What would you like to change about the course?

(c) As a result of your work in Unit 2, which skills have you improved the most? CIRCLE one of the options below.

Speaking Writing Listening Reading

(d) Please make any additional comments in the space below.

Appendix P

Course Assessment- Students' Responses

The following questionnaire is designed to collect student feedback on the course evaluations. Your answers are very important to us and will help with the improvement and success of future courses.

Part 1. The Evaluation Tasks

Please take a moment to rate the following statements. Indicate you answer by placing an X in the appropriate column.

1- Completely Agree 2- Mostly Agree

3- Mostly Disagree 4- Completely Disagree

	Statements	1	2	3	4
(a)	The evaluations consist of realistic tasks that an engineer would do.				
(b)	I felt motivated while doing the evaluations because of the use of authentic activities that an engineer needs to do at work.				
(c)	I felt adequately prepared to perform well on the evaluations because they consisted of tasks that I am familiar with as an engineering student.				
(d)	The evaluations were impossible to complete because I needed more preparation.				
(e)	After completing the evaluation tasks, I feel prepared to do them in real life.				
(f)	The instructions for the evaluations were clear.				
(g)	The evaluations were very different to the activities I saw in class.				
(h)	I felt nervous during the evaluation.				
(i)	The evaluations were fun.				
(j)	The evaluations were boring.				
(k)	I dislike these kinds of evaluations.				

(l)	I felt frustrated during the evaluations.				

Part 2. Materials

Please rate the following items. Indicate your answer by placing an X in the appropriate column.

1- Completely Agree 2- Mostly Agree

3- Mostly Disagree 4- Completely Disagree

	Statements	1	2	3	4
(a)	The materials used for evaluations were realistic.				
(b)	The materials were attractive.				
(c)	The materials used for evaluations motivated me.				
(d)	The materials used for evaluations were irrelevant.				

Part 3. Rubrics

Please rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Completely Agree 2- Mostly Agree

3- Mostly Disagree 4- Completely Disagree

	Statements	1	2	3	4
(a)	I knew what was going to be evaluated.				
(b)	The descriptions on the rubrics were clear.				
(c)	The course prepared me to achieve the highest score on the rubric.				
(d)	The descriptions on the rubric made me feel confident in what I had to do.				

Part 4. Preferences

Please answer the following questions.

(e) Which of the evaluations was your favorite? Why?

(f) Which of the evaluations was your LEAST favorite? Why?

(h) Would you recommend the type of evaluation used in this course for future courses? Why?

Appendix Q: Lesson plans and Materials

Unit 1- Getting it right!
Instructor: Jose Fabián Elizondo
Assistant: Sánchez & Pilgrim

Lesson Plan #1
Week 1 - Class 1
08/07/2017

Unit goal: By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General Objective: By the end of the class, students will be able to show understanding of how the course is structured and will be able to introduce themselves.

Specific Objectives: By the end of this lesson, the Ss will:

1. describe their course expectations by talking about their immediate and delayed needs when using English.
2. show understanding of how the course is structured by taking a short survey in pairs.
3. introduce themselves while explaining what mechanical engineering means to them.
4. work with classmates to answer trivia questions and solve problems by competing in a game of jeopardy.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
	Trs will welcome Ss. Trs will introduce themselves.	S			5 min
1	In groups of 4, Ss are given a large printout in which they are asked: 1. What are 3 things I could do better **today** if I knew English? 2. What are 3 things I will need English for at **work**? 3. What are 3 things you really want to study in **this course**? Ss are to answer these questions in groups and be ready to present their answers to the class.	S L W			20 min
2	Tr projects syllabus and asks Ss for elements that they might want to see included in it. Tr also explains how to use the Google Drive folder created for this class.	S L			20 min
2	Ss are to access the folder and the survey called "**Course Syllabus Trivia.**" Ss will take the Google Forms survey in pairs by scanning a QR code. The survey deals with questions about the course program and the calendar. Ss will have 10 minutes to answer all of the questions and then Tr will project each question and Ss will	R S			15 min

	corroborate whether or not they were right. Tr will clarify any question Ss may have.				
3	Tr will place several objects on a table. Ss are given one post-it note. They are told that they are to write their names on that note and to put it on one of the objects that they think involves mechanical engineering. Ss then are to work in larger groups (based on the objects they chose) and are given **Handout 1**. They are to introduce themselves and explain why they chose the object they selected.	R S L	**Introducing oneself** 1. My name is X. 2. I live in X. 3. I am interested in X. 4. I would like to work for X. **Explaining oneself** ✓ I chose this object because X. ✓ I think this object involves mechanical engineering because X. ✓ The processes to make this product are X & X.		15 min

4	Ss are divided into groups of four. They are told that they will participate in a game of jeopardy. https://www.playfactile.com/gearupucr Tr will explain the rules of the game and the categories to Ss. The categories include: ME at the UCR, Challenges, It's getting Personal, and My teachers. Tr will determine which group goes first, second and so on. Each group chooses a category and a monetary amount. If the group answers correctly the money is added to their bank. Incorrect answers result in the amount being deducted from their bank. For Challenge $400, one member of the group sits with their back to the board. The Tr projects image of the board and another member of the group must describe the image in detail so that the S sitting can draw. The pair has 1 minute to complete the challenge. For Challenge $500, Tr projects the maze on the board and Ss use a marker to solve the maze. After all the questions in the categories are answered, Ss wager an amount for Final Jeopardy. The group with the most money at the end wins.	S L R W			30 min

Unit 1: Getting it right!
Handout 1- What's your name?
Instructions:

A. Introduce yourself to the group, completing the following phrases.
    1. My name is X.
    2. I live in X.
    3. I am interested in X (mechatronics, aerospace, alternative energy).
    4. I would like to work for X (Boston Scientific, Procter and Gamble, a public institution)
B. Talk about the object you chose before. You may use the following expressions:
    - ✓ I chose this object because X.
    - ✓ I think this object involves mechanical engineering because X.
    - ✓ The processes to make this product are X & X.
C. As a group, complete the following sentence:
   Mechanical engineering is about

Universidad de Costa Rica
English for Mechanical Engineering Students
Elizondo, Pilgrim, and Sánchez

Unit 1: Getting it right!
Handout 1- What's your name?
Instructions:

B. Introduce yourself to the group, completing the following phrases.
    1. My name is X.
    2. I live in X.
    3. I am interested in X (mechatronics, aerospace, alternative energy).
    4. I would like to work for X (Boston Scientific, Procter and Gamble, a public institution)
D Talk about the object you chose before. You may use the following expressions:
    - ✓ I chose this object because X.
    - ✓ I think this object involves mechanical engineering because X.
    - ✓ The processes to make this product are X & X.
E. As a group, complete the following sentence:
   Mechanical engineering is about

Material 1

Needs Analysis & Class Expectations

Instructions:
In groups, answer the following questions.

1. What are 3 things I could do better today if I knew English?

a. _____
b. _____
c. _____

2. What are 3 things I will need English for at work?

a. _____
b. _____
c. _____

3. What are 3 things I really want to study in this course?

a. _____
b. _____
c. _____

Material 2

Material 3

Image taken from: https://www.dreamstime.com/stock-illustration-engineer-cartoon-illustration-funny-structural-plans-image65245622

Material 4

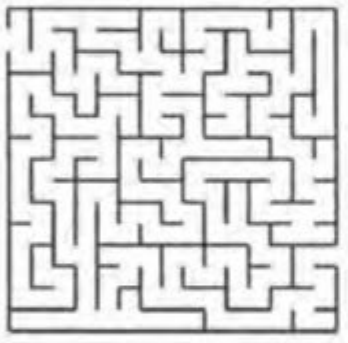


Image taken from: https://www.pinterest.co.uk/pin/354588170638012430/

Unit 1- Getting it right!
Instructor: Jose Fabián Elizondo
Assistant: Sánchez & Pilgrim

Lesson Plan #2
Week 1 - Class 2
08/09/2017

Unit goal: By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General Objective: By the end of the week, students will be able to show understanding of a short text in the field of fluid mechanics while applying techniques to deal with difficult or unknown words.

Specific Objectives: By the end of this lesson, the Ss will:

1. describe what they do when they encounter a word they may not know in a reading by playing a game.
2. identify the function of different suffixes and their role in determining parts of speech by answering some "brain teasers."
3. recognize six steps to follow to deal with unknown words by matching the name of the technique to its description.
4. apply the different techniques to deal with unknown words in pairs by practicing the six steps studied in class.
5. apply the techniques to deal with unknown words both individually and collectively by completing an info-gap activity.
6. identify the main idea of a short text in the field of fluid mechanics.
7. evaluate other students' guesses by analyzing the results of the info-gap activity.
8. rate the efficacy of the techniques by filling out a small questionnaire.
9. use noun + noun collocations to describe concepts within the field of fluids mechanics.

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** To begin the class, Ss are told to take out their phones to play a game. They are to type *kahoot.it* in any browser. They are told to write a PIN (given by Tr at the moment) and to create and write a username for the game. Ss will play in pairs, so they only need one phone per pair. Ss are told that the objective of the game is to see what they do when they encounter a difficult word in a reading. For this game, three sentences were extracted from Unit 1 from the book *Introduction to Fluid Mechanics*. In each sentence, the Tr had previously selected one word that may be unknown or difficult for Ss and will be displayed in bold. Ss try to say what the meaning of these words is by tapping one of the four definitions given to them. Ss will play one practice round first to understand the game.	R W S L	**Useful Language:** • I think option X is correct because... • How about option X? • I agree/disagree with you.		10 min

	Sentences for the game: 1. Prehistoric **relics** of irrigation canals were discovered in Egypt and Mesopotamia, and it has been confirmed that canals had been constructed more than 4000 years BC. a. old books from an earlier time. b. old books that are important now. c. objects that survived from an earlier time. d. objects that are new and belong to our modern times. 2. Water in cities is said to have begun in Jerusalem, where a reservoir to store water and a **masonry**, or stonework, channel to guide the water were constructed. a. A channel made of a specific material. b. A channel made of high-tech materials. c. A channel made with little or no help from human beings. d. A channel made without the intervention of human beings. 3. The city water system in those days guided relatively clear water from far away to fountains, baths and public buildings. Citizens then **fetched** the water from water				

	supply stations at high street corners, etc. a. used b. drank c. cleaned d. obtained An assistant teacher will write the useful language on the board before the class starts. After Ss respond, Tr asks Ss what they did to discover the correct meaning of those words. The Ss who get the highest score are given a prize.				
2	**Pre-task I** Ss are told that there are many techniques to deal with difficult words. One of them is understanding suffixes and the parts of speech. Tr writes on the board: **suffixes**: small pieces included at the end of a word. hammer = hammer**s** (suffix to create plural nouns) Tr explains that to understand what they are and how they function, they will complete one activity first.	R W S L	**Useful Language:** ✓ Can you repeat that? ✓ How do you spell that? ✓ What is the meaning of X?	**Metacognitive:** Socio-affective	15 min

	Ss are given **Handout 2**. Ss are divided into four groups: A, B, C, D. Tr asks a volunteer to read the instructions. Then Tr models the activity with an assistant teacher. They are to solve three "brain teasers" by completing a chart in an info-gap activity. Ss will be exposed to the suffixes –tion and –ment to create nouns, -al and –ic to create adjectives,–ed to create regular verbs in the past, and –ly to create adverbs. Ss complete the charts and Tr then checks answers on the board by eliciting the right answers. Tr asks Ss to do the brain teasers individually and then compare answers with other classmates. Tr models #1 for students. Ss are asked to report back to the class. Tr points out that the categories of noun, verb, adjective, and adverb are called parts of speech and they can help Ss understand the function of a word in a text.				

3	**Pre-task II** Tr says that there are more tips they can follow to deal with difficult words. For that, they are to complete **Handout 3**. In this handout, Ss are to match the name of each technique to its description. Ss are instructed to complete this task in pairs and later compare their answers in a group of 4. Ss are asked to check their answers with the Answer Key provided at the bottom of the page.	R W S L		**Cognitive:** Dealing with unknown words	10 min
4	**Pre-task III** Ss are told that now they are going to put into practice some of those techniques. In groups of 3 students, they are to provide the meaning of 3 words given in the Practice section of Handout II by applying the techniques learnt. Tr then asks each group what technique helped them understand each word.	R S L W		**Cognitive:** Dealing with unknown words	
5 & 6	**Main Task** Ss are separated into Student A, B, and C. Tr distributes **Handout 4**. Ss are instructed to figure out the meaning of three words and to write down the technique	R W S L	**Useful Language:** • Are you student X?	**Cognitive:** Dealing with unknown words **Metacognitive:** Socio-affective	25 min

	they used to do so. Each student (A, B, and C) has three words to define, which are given to them in the first chart. All Ss A are to work together; all Ss B are to work together, and so forth. As a second instruction, Ss are told that they are to complete the second chart asking their classmates for the information missing. They are to write down the three words missing, their meaning, and the technique used by that student. Once Ss have all of the words in the reading, they are to read the entire text and choose the option that best describes the main idea of the text.		• Do you have word number X? • I knew that word because... • I think this word means... • I think we can use technique #X because... •		
7	**Post-task I** *Planning and Reporting* In groups, Ss are to analyze the meaning of the words given and are to agree or disagree. Tr projects Answer Key-Handout 4 (a) Ss report back to the class. And then Tr projects Answer Key-Handout 4 (b)				10 min

	Tr then elicits the correct answers and Ss make the necessary changes in their handouts.				
8	**Post-task II** Ss are given a short questionnaire on the use of techniques to deal with unknown words and their learning process. Ss answer it individually and then Tr discusses questions in an open class. Tr distributes Handout **5.**	R W S L	✓ Which technique helped you the most? ✓ Which technique didn't help you much? What did you do instead? ✓ Do you think these techniques will make you a better reader? Why or why not?	**Metacognitive:** Monitoring learning progress	10 min
9	**Language Focus** Ss are given **Handout 6**. They will find explicit explanations on how to construct noun + noun collocations. They are told these constructions can also be used to deal with unknown words.	R W S L	**Language Focus: Noun + Noun collocations**		15 min

	They are asked to complete the two exercises. They are asked in exercise A to create noun+ noun collocations, using the information from the main task (Handout III). In exercise B, they are asked to come up with examples of words with this construction that they can find in the field of fluids mechanics.				

Unit 1: Getting it right!

Handout 2-Understanding Suffixes + Parts of speech

Instructions: Individually, answer the "brain teasers" at the bottom of the page. For that, you need to complete the following chart. Move around the class to find a classmate that has the information you need to complete the chart.

Student A

What is the word in C2?
What word is in box A3?

	1	2	3
A	utilization	invention	development
B			
C			
D			

Useful Language:

- ✓ Can you repeat that?
- ✓ How do you spell that?
- ✓ What is the meaning of ___X___?

Brain Teasers

1. What can you write at the end of a word to make it a **noun**?

   _____

   (Clue: see the words in Line A)
2. What can you write at the end of a word to make it an **adjective**?

   _____

   (Clue: see the words in Line B)
3. What can you write at the end of a regular **verb** to give it a meaning **in the past**?

   _____

   (Clue: see the words in Line C)
4. What can you write at the end of a word to make it an **adverb**?

   _____

   (Clue: see the words in Line D)
5. What can you do to **deal with difficult words** based on this exercise?

   _____

Some parts of speech: nouns, verbs, adjectives, adverbs

Unit 1: Getting it right!

Handout 2-Understanding Suffixes + Parts of speech

Instructions: Individually, answer the "brain teasers" at the bottom of the page. For that, you need to complete the following chart. Move around the class to find a classmate that has the information you need to complete the chart.

Student B

What is the word in C2?
What word is in box A3?

	1	2	3
A			
B	practical	experimental	prehistoric
C			
D			

Useful Language:

- ✓ Can you repeat that?
- ✓ How do you spell that?
- ✓ What is the meaning of ___X___?

Brain Teasers

1. What can you write at the end of a word to make it a **noun**?

   _____

   (Clue: see the words in Line A)
2. What can you write at the end of a word to make it an **adjective**?

   _____

   (Clue: see the words in Line B)
3. What can you write at the end of a regular **verb** to give it a meaning **in the past**?

   _____

   (Clue: see the words in Line C)
4. What can you write at the end of a word to make it an **adverb**?

   _____

   (Clue: see the words in Line D)
5. What can you do to **deal with difficult words** based on this exercise?

   _____

Some parts of speech: nouns, verbs, adjectives, adverbs

Unit 1: Getting it right!

Handout 2-Understanding Suffixes + Parts of speech

Instructions: Individually, answer the "brain teasers" at the bottom of the page. For that, you need to complete the following chart. Move around the class to find a classmate that has the information you need to complete the chart.

Student C

What is the word in C2?

What word is in box A3?

	1	2	3
A			
B			
C	developed	called	discovered
D			

Useful Language:

- ✓ Can you repeat that?
- ✓ How do you spell that?
- ✓ What is the meaning of ___X___?

Brain Teasers

1. What can you write at the end of a word to make it a **noun**?

   _____

   (Clue: see the words in Line A)
2. What can you write at the end of a word to make it an **adjective**?

   _____

   (Clue: see the words in Line B)
3. What can you write at the end of a regular **verb** to give it a meaning **in the past**?

   _____

   (Clue: see the words in Line C)
4. What can you write at the end of a word to make it an **adverb**?

   _____

   (Clue: see the words in Line D)
5. What can you do to **deal with difficult words** based on this exercise?

   _____

Some parts of speech: nouns, verbs, adjectives, adverbs

Unit 1: Getting it right!
Handout 2-Understanding Suffixes + Parts of speech
Instructions: Individually, answer the "brain teasers" at the bottom of the page. For that, you need to complete the following chart. Move around the class to find a classmate that has the information you need to complete the chart.

Student D

What is the word in C2?
What word is in box A3?

	1	2	3
A			
B			
C			
D	effectively	relatively	approximately

Useful Language:
- ✓ Can you repeat that?
- ✓ How do you spell that?
- ✓ What is the meaning of ___X___?

Brain Teasers

1. What can you write at the end of a word to make it a **noun**?

   _____

   (Clue: see the words in Line A)
2. What can you write at the end of a word to make it an **adjective**?

   _____

   (Clue: see the words in Line B)
3. What can you write at the end of a regular **verb** to give it a meaning **in the past**?

   _____

   (Clue: see the words in Line C)
4. What can you write at the end of a word to make it an **adverb**?

   _____

   (Clue: see the words in Line D)
5. What can you do to **deal with difficult words** based on this exercise?

   _____

Some parts of speech: nouns, verbs, adjectives, adverbs

Unit 1: Getting it right!
Handout 3-Dealing with difficult words[1]

To deal with difficult words, you may use the following techniques. To understand what each one is about, match the name of the technique to its description. There are two extra descriptions.

Name of technique		Description
1. part of speech	( )	a. pay attention to pictures and drawings
2. definitions	( )	b. determine if the word is a noun, verb, adjective, or adverb
3. suffixes	( )	c. look for a synonym or antonym in the same sentence
4. ignored words	( )	d. analyze the little pieces that make words
5. Spanish use	( )	e. if you understand the idea, ignore the word
6. synonym and antonyms	( )	f. think of a similar word in Spanish
		g. look for a definition before or after the word
		h. look up the word in a dictionary

Practice
In pairs, read the following paragraph extracted from the book *Introduction to Fluid Mechanics* by Y. Nayakama and guess the meaning of the underlined words, using the techniques studied.

"Hydraulics developed as a purely **empirical** science with practical techniques beginning in prehistoric times. Our ancestors **settled** to engage in farming and their **hamlets** developed into villages" (Nakayama 1998, p.1).

Word to guess	Meaning	Technique used
1. empirical		
2. settled		
3. hamlets		

[1] **Answers** 1(b), 2(g), 3(d), 4(e), 5(f), 6(c)

Unit 1: Getting it right!

Handout 4 **Student A**

The science of flow has been classified into hydraulics, which developed from experimental studies, and hydrodynamics, which developed through **(1) theoretical** studies. In recent years, however, both have **(2) merged** into the single discipline called fluid mechanics, not considered as completely different study fields. Hydraulics developed as a purely empirical science with practical techniques beginning in **(3) prehistoric** times. As our ancestors settled to engage in farming and their hamlets developed into villages, the continuous supply of a proper quantity of water and the transport of essential food and materials posed the most important problems. In this sense, it is believed that hydraulics was born in the utilization of **(4) water channels,** also called passages, and ships. Prehistoric relics of irrigation canals, typically man-made, were discovered in Egypt and Mesopotamia, and it has been confirmed that **(5) canals** had been constructed more than 4000 years **(6) BC**. The city water system in those days guided relatively clear water from far away to fountains, baths and public buildings. Citizens then **(7)** _____ the water from water supply stations at high street corners etc. The quantity of water a day used by a citizen in those days is said to be approximately 180 liters. Today, the amount of water used **(8)** _____ per day in an average **(9)** _____ is said to be approximately 240 liters. Therefore, even about 2000 years ago, a considerably high level of cultural life occurred.

Adapted from (Nakayama, 1998, pp. 1-2).

A. Write the meaning of these words and the name of the technique you used to do so.

Word to define	Meaning	Technique used
1. theoretical		
2. merged		
3. prehistoric		

B. Complete this chart based on the information **Student C** has.

Word to define	Meaning	Technique used
7.		
8.		
9.		

C. Based on the text, circle its **main idea** (author's general message) from the options below:

1. Hydraulics and hydrodynamics are considered one single discipline and they are both necessary for cultural life to occur.
2. Transporting goods and supplying people with drinkable water helped hydraulics to develop as a science starting in ancient times.
3. People in the past used almost as much water as people do now. This happened as the result of farming and building cities.

Unit 1: Getting it right!

Handout 4 **Student B**

The science of flow has been classified into hydraulics, which developed from experimental studies, and hydrodynamics, which developed through **(1)** _____ studies. In recent years, however, both have **(2)** _____ into the single discipline called fluid mechanics, not considered as completely different disciplines. Hydraulics developed as a purely empirical science with practical techniques beginning in **(3)** _____ times. As our ancestors settled to engage in farming and their hamlets developed into villages, the continuous supply of a proper quantity of water and the transport of essential food and materials posed the most important problems. In this sense, it is believed that hydraulics was born in the utilization of **(4) water channels**, also called passages, and ships. Prehistoric relics of irrigation canals, typically man-made, were discovered in Egypt and Mesopotamia, and it has been confirmed that **(5) canals** had been constructed more than 4000 years **(6) BC**. The city water system in those days guided relatively clear water from far away to fountains, baths and public buildings. Citizens then **(7) fetched** the water from water supply stations at high street corners etc. The quantity of water a day used by a citizen in those days is said to be approximately 180 liters. Today, the amount of water used **(8) per capita** per day in an average **(9) household** is said to be approximately 240 liters. Therefore, even about 2000 years ago, a considerably high level of cultural life occurred.

Adapted from (Nakayama, 1998, pp. 1-2).

A. Write the meaning of these words and the name of the technique you used to do so.

Word to define	Meaning	Technique used
4. water channels		
5. canals		
6. BC		

B. Complete this chart based on the information **Student A** has.

Word to define	Meaning	Technique used
1.		
2.		
3.		

C. Based on the text, circle its **main idea** (author's general message) from the options below:

1. Hydraulics and hydrodynamics are considered one single discipline and they are both necessary for cultural life to occur.
2. Transporting goods and supplying people with drinkable water helped hydraulics to develop as a science starting in ancient times.
3. People in the past used almost as much water as people do now. This happened as the result of farming and building cities.

Unit 1: Getting it right!

Handout 4 **Student C**

The science of flow has been classified into hydraulics, which developed from experimental studies, and hydrodynamics, which developed through (1) **theoretical** studies. In recent years, however, both have (2) **merged** into the single discipline called fluid mechanics, not considered as completely different disciplines. Hydraulics developed as a purely empirical science with practical techniques beginning in (3) **prehistoric** times. As our ancestors settled to engage in farming and their hamlets developed into villages, the continuous supply of a proper quantity of water and the transport of essential food and materials posed the most important problems. In this sense, it is believed that hydraulics was born in the utilization of (4) _____, also called passages, and ships. Prehistoric relics of irrigation canals, typically man-made, were discovered in Egypt and Mesopotamia, and it has been confirmed that (5) _____ had been constructed more than 4000 years (6) _____. The city water system in those days guided relatively clear water from far away to fountains, baths and public buildings. Citizens then (7) **fetched** the water from water supply stations at high street corners etc. The quantity of water a day used by a citizen in those days is said to be approximately 180 liters. Today, the amount of water used (8) **per capita** per day in an average (9) **household** is said to be approximately 240 liters. Therefore, even about 2000 years ago, a considerably high level of cultural life occurred.

Adapted from (Nakayama, 1998, pp. 1-2).

A. Write the meanings of these words and the name of the technique you used to do so.

Word to define	Meaning	Technique used
7. fetched		
8. per capita		
9. household		

B. Complete this chart based on the information **Student B** has.

Word to define	Meaning	Technique used
4.		
5.		
6.		

C. Based on the text, circle its **main idea** (author's general message) from the options below:

1. Hydraulics and hydrodynamics are considered one single discipline and they are both necessary for cultural life to occur.
2. Transporting goods and supplying people with drinkable water helped hydraulics to develop as a science starting in ancient times.
3. People in the past used almost as much water as people do now. This happened as the result of farming and building cities.

Handout 5-Does this work?

Instructions: Answer the following questions having in mind the techniques to deal with difficult words studied today.

1. Which technique helped you the most? Why?

2. Which technique didn't help you much? What did you do instead?

3. Do you think these techniques will make you a better reader? Why or why not?

Universidad de Costa Rica
English for Mechanical Engineering Students
Elizondo, Pilgrim, and Sánchez

Handout 5-Does this work?

Instructions: Answer the following questions having in mind the techniques to deal with difficult words studied today.

1. Which technique helped you the most? Why?

2. Which technique didn't help you much? What did you do instead?

3. Do you think these techniques will make you a better reader? Why or why not?

Unit 1: Getting it right!
Handout 6

Language Focus: Noun + Noun collocations

Noun + Noun collocations

It is very common to use two nouns together to show that one thing is a part of something else. **Examples from the reading**: fluid mechanics & irrigation canals.

Uses:

- ✓ We can use noun modifiers to describe the material something is made of. **Examples**: metal gauges & copper wires.
- ✓ We use measurements, age, or value as noun modifiers.
  Examples: a 20-amp-circuit, a twenty-year warranty, & a two-million-dollar wind turbine.
- ✓ It is common to have two nouns together and readers/listeners have to work out what they mean.
  Examples:
  (a) circuit breaker= something that breaks current flow when a fault is detected.
  (b) flow rate= volume of fluid which passes per unit time.
- ✓ Sometimes we have more than two nouns together. Examples: metal pressure gauges & concrete power plants.
- ✓ Noun modifiers come after adjectives. **Examples:**
  an **old** zinc fuse &
  a **new** aluminum nozzle.

Practice:

A. With each of the nouns provided below create a modified noun, using a noun + noun construction.
*Clue: You may go back to **Handout III** to find some of these words.*

1. water: _____
2. irrigation: _____
3. system: _____
4. stations: _____
5. corners: _____

Metal pressure

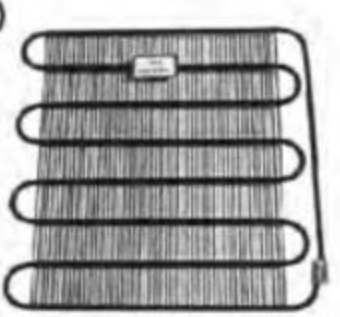
B. Take a look at the following pictures and describe these objects in the spaces below, using noun + noun collocations. You may use the list of materials to write your sentences.

List of Materials
polymer, wood, wool, cardboard, gold, glass, silver, aluminum, rubber, paper, iron, steel, ceramic, leather, polystyrene, brick

1. 
hose

2. 
t bulb

3. 
disc brake rotor

4. 
evaporator

5. 

Descriptions:

1. _____

2. _____

3. _____

4. _____

5. _____

Lesson Plan #3

Instructor: Yannick Pilgrim **Week 2 - Class 1**

Assistant: Elizondo & Sánchez **08/14/2017**

Unit goal: By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General Objective: By the end of the week, students will be able to identify the main idea and supporting details from aural texts in the field of mechanical design by watching videos used as supplemental materials in class successfully.

Specific Objectives: By the end of this lesson, the Ss will:

1. identify machines that can be considered perpetual motion machines.
2. activate previous knowledge to discuss the concepts of the laws of thermodynamics and perpetual motion machines by completing a mind map.
3. discriminate the main idea of a short text from supporting details by categorizing sentences.
4. identify the main idea of a short segment of an aural text by applying the tips studied in class.
5. determine the main idea of a complete TED Ed video by ticking a checklist.
6. show understanding of supporting details in a complete TED Ed video by ticking a true and false checklist.
7. present how possible it is to build perpetual motion machines using modern mechanical engineering techniques.
8. identify which tip was the most and the least helpful when identifying main ideas and supporting details.
9. recognize the contracted forms of the verb be and auxiliary verbs by circling contractions in excerpts of the transcript of the TED Ed video.
10. correctly pronounce some of the contracted forms of the verb be and auxiliary verbs by re-reading statements to a classmate.

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr shows a slide with three pictures of machines that can be considered perpetual motion machines. Ss are asked what it is they have in common. 1. Perpetuum Mobile of Villard de Honnecourt 2. 15th-century wheel by Taccola 3. Boyle's perpetual motion scheme	S			5 min
2	Tr then asks Ss to use the notes they brought as homework to discuss the concepts of the rules of thermodynamics and perpetual motion machines by completing a mind map **(Handout 7).** Ss report back to the class. Tr tells Ss that today they will be watching a video that can be used as extra material for one of their classes. Tr tells them that a good way to prepare oneself before a class is by doing what they just did: doing some research on the topics to cover and by activating previous knowledge. Tr tell Ss that to activate previous knowledge they create a mind map,	S L R W	Useful language: ✓ I think the concepts are/aren't related because... ✓ These machines can/can't work because... ✓ The 1st/2nd rule of thermodynamics explains that...	**Cognitive:** Activating previous knowledge	10 min

	write a list of words, or just think about what they know about a topic.				
3	**Pre-task 1** Tr tells Ss that on many occasions Ss have difficulties understanding the main idea of a video because they focus too much on structures or words they don't understand. On some other occasions, Ss don't know how to identify the main idea. Tr tells Ss that today that will be the focus of the class: identifying the main idea of a text by following some tips. Tip 1: Ss are given **Handout 8**. They will be given some information about identifying the main idea and supporting details. Tr has volunteers read the tips provided. Ss are to categorize the sentences as (M) for the main idea or (D) for supporting details.	R S W	**Useful language:** ✓ I think #X is the main idea because... ✓ #X can't be a detail because ... ✓ This can be a detail because it talks about...	**Cognitive:** Identifying main ideas and supporting details	15 min
4	**Pre-task II** Ss will be given **Handout 9**. Tr goes goes over Tip 2, asking Ss to read the description aloud. Ss are to identify the main idea of a segment of a video about perpetual motion machines	L R W S		**Cognitive:** Identifying main ideas and supporting details	15 min

	by applying Tips 1 and 2. Tr plays only the first 56 seconds of the video. Ss are to share their answers with a classmate. Tr asks Ss to report back to the class.				
5 & 6	**Main Task** Ss will be given **Handout 10**. Ss are asked to watch the entire video once and to determine what they main idea is. Ss share with classmates and report back to the class. Tr elicits some of the tips used to find the main idea. Ss are asked to watch the video a second time and are to find some supporting details in the video. Ss share with classmates. Tr plays video third more time so that Ss can verify their answers. Then they are to report back to the class. Tr elicits some of the complications they may have had while finding details.	L R W S	**Useful Language:** ✓ What did you choose for the main idea? ✓ What did you write in #X? ✓ I didn't hear anything about #X. Did you? ✓ I didn't understand X. Did you?	**Cognitive:** Identifying main ideas and supporting details	30 min
7 & 8	**Post-task I** Planning and Reporting Ss are given **Handout 11**. They are asked to answer some opinion questions based on the				15 min

	video and the possibility/impossibility to build perpetual motion machines today using modern technology. Tr asks Ss if the machines shown in the Warm up can be re-assessed and put to work. Ss are also asked to think of the most useful and the least useful tip they learned today that helped them identify main ideas and supporting details. Ss share in groups and report back to the class.				
9 & 10	**Post-task II** Language Focus **Ss are given Handout 12.** Ss are asked to read the description of contractions aloud as an open class. Tr asks Ss to recognize the contracted forms of the verb be and auxiliary verbs by circling contractions in excerpts of the transcript of the TED Ed video. Tr goes over the pronunciation of contracted forms with Ss. First, Ss attempt to pronounce the list on their own working in groups, and then Tr asks Ss for volunteers to read the list of contractions.		**Useful language:** ✓ How do you pronounce the contraction in #X? ✓ The contraction in #X is difficult for me. Can you help you me pronounce it? ✓ I'm not sure how to pronounce #X. Any ideas? ✓ I think #X is pronounced like this (your pronunciation).		15 min

	Ss are asked to write the contracted forms of underlined statements and then to read those statements to a classmate. Tr elicits answers from Ss and corrects pronunciation if necessary.		What do you think?		

Unit 1: Getting it right!
Handout 7- Mind map

Strategy: Activating previous knowledge. Try to write all of the words you already know related to the concepts of **perpetual motion machines and thermodynamics.**

Useful language:

- ✓ I think the concepts are/aren't related because X.
- ✓ These machines can/can't work because X.
- ✓ The 1st/2nd law of thermodynamics explains that X.

Unit 1: Getting it right!
Handout 8-Main Ideas

Tip 1: Identifying the main idea

To identify **the main idea** of a text, consider the following:

1. The main idea is the main point, or the most important idea, that the author wants to present.
2. It can be normally found at the beginning or at the end of a paragraph.
3. Normally, it is explicitly presented in the text and can be repeated several times.
4. In conversations or class lectures, main ideas are spoken more slowly and clearly.

To identify **supporting details** in a text, consider the following:

1. They present reasons, examples, or specific information, such as dates, names, years, or statistics.
2. Normally, they are not repeated several times.
3. In conversations or class lectures, main ideas are spoken more rapidly.

Instructions:

I. In pairs, read the following sentences and underline the main idea.
II. Write in the parentheses (M) for the main idea or (D) for supporting details.

Perpetual motion machines

( ) a. Other perpetual motion machines do not consider elements such as friction.
( ) b. Some perpetual motion machines violate the second law of thermodynamics.
( ) c. Some perpetual motion machines violate the first law of thermodynamics.
( ) d. There are some problems with perpetual motion machines.
( ) e. An example of a perpetual motion machine that violates the first law of thermodynamics is a lightbulb powering a solar panel that would charge a phone.

Useful language:
✓ I think #X is the main idea because...
✓ #X can't be a detail because ...
✓ This can be a detail because it talks about...

III. Arrange the sentences into one coherent paragraph, using their letters to order them.
Write your sequence here: a _____, b _____, c _____, d _____, e _____.

IV. Share your sequence with your classmates.

Unit 1: Getting it right!
Handout 9-Listening to main ideas

Tip 2: Pace & clarity

As explained in Handout II, main ideas tend to be spoken more slowly and clearly. However, there are more cues that can help you identify the main idea when listening to an audio or watching a video.

Other elements to pay attention to:

1. Normally, speakers become very excited when saying the main idea. Consequently, their volume might increase, and their intonation might go up when saying the main idea.
2. There might be some pauses after saying the main idea so that people have time to take notes or process the information.
3. Speakers may put more emphasis on pronouncing words when saying the main idea so that the audience understands perfectly.

Instructions:

I. Watch the following segment of a **TED Ed**[2] video on perpetual motion machines.
II. Write in the parentheses (M) for the main idea or (D) for supporting details.
III. Put into practice Tips 1 and 2 to identify the main idea and supporting details.

( ) a. An example of perpetual motion machine is a windmill that produced the breeze it needed to keep rotating.
( ) b. A wheel was supposed to spin forever if mercury flowed from one side of the wheel to the other.
( ) c. Another example of perpetual motion machine is a lightbulb whose glow provided its own electricity.
( ) d. Perpetual motion machines are defined as devices that can do work indefinitely without any external energy source.
( ) e. Around 1159 A.D., a mathematician called Bhaskara the Learned sketched a design for a wheel containing curved reservoirs of mercury.

IV. Share your answers with a classmate. Did you use Tips 1 & 2? Why or why not?
Watch the video again and arrange the sentences into one coherent paragraph, based on the video.

Write your sequence here: a _____, b _____, c _____, d _____, e _____

V. Share your sequence with your classmates. Check it with the Answer Key.

Answer Key [illegible]

2 Video taken from: https://www.youtube.com/watch?v=A-QgGXbDyRo

Unit 1: Getting it right!

Handout 10-Understanding expository videos

Instructions:

A. Watch the complete TED Ed video about perpetual motion machines and select the main idea from the options provided.

1. Perpetual motion machines could work if they extract energy from external sources.
2. Perpetual motion machines are defined as devices that can do work indefinitely without any external energy source.
3. Perpetual motion machines may work with exotic forms of matter we don't know yet.
4. Perpetual motion machines don't work because they violate different laws of physics.

B. Write the tips you used to get the main idea of the video:

_____

C. Watch the video one more time and answer the following questions[3]. Only one option is correct.

1. Why will Bhaskara's wheel stop spinning? Because...

a. Mercury is too dense.
b. of its flawed axle design.
c. it needs to be placed in a vacuum.
d. the center of mass is lower than the axis.

2. Two out of the three people below seriously worked on perpetual motion machines. Who was not mentioned in the video?

a. Robert Boyle.
b. Leonardo da Vinci.
c. Bhaskara the learned.

3. Why does the second law of thermodynamics make perpetual motion machines impossible (to date)?

a. There is no negative work.
b. Energy is always conserved.
c. Systems try to achieve equilibrium.
d. Energy will always leech out (escape) of a system as heat.

D. Share your answers with a classmate. You may use the Useful Language box.

E. Watch the video one more time to confirm your answers.

Useful language:

- ✓ What did you choose for the main idea?
- ✓ What did you choose in #X?
- ✓ I didn't hear anything about #X. Did you?
- ✓ I didn't understand X. Did you?

[3] **Taken** and adapted from: https://ed.ted.com/lessons/why-don-t-perpetual-motion-machines-ever-work-netta-schramm#review

Unit 1: Getting it right!
Handout 11- Impossible?

Instructions: In groups, answer the following questions based on your own opinion and the video. Each group will present one of the questions to the rest of the class.

1. Which of the laws of thermodynamics is a greater obstacle to the successful achievement of perpetual motion machines, and why: the first (energy cannot be created or destroyed) or the second (energy tends to "leech out" of systems)?

2. Should we stop trying to invent a perpetual motion machine because our current understanding says it's impossible, or should we continue? If we try and fail, can we learn anything from the process itself?

3. Can we use modern day technology to make old perpetual motion machines work? Think of the machines we talked about at the beginning of the class (Perpetuum Mobile, 15th-century wheel, Boyle's perpetual motion scheme).

4. Do you think you can create a perpetual motion machine? Why or why not?

5. **For all of the groups:**
   a. What do you think was the most useful and the least useful tip you learned today that helped you identify main ideas and supporting details?
   b. Do you think that what you learned today can make you a better listener/student? Why or why not?

Unit 1: Getting it right!
Handout 12 -Language Focus

Contractions

When people speak, sometimes it is difficult to understand what they say for several reasons. One of them is because of the use of contractions.

Contractions are short forms of words; for example, instead of saying
"they **have** investigated perpetual motion machine models," you can say
"**they've** investigated perpetual motion machine models". In this case, **they've** is the contraction of **they have**.

Structure:
Read the following lines from the transcript of the video about perpetual motion machines and circle the contractions.
Clue: You can find them by detecting an apostrophe (').

1. "There's just one problem. They don't work."
2. "They'd have to create some extra energy, breaking the first law of thermodynamics."
3. "It's hard to conclusively say we'll never discover a perpetual motion machine because there's still so much we don't understand about the universe."
4. "Perhaps we'll find new exotic forms of matter that'll force us to revisit the laws of thermodynamics."

The following are the most common contractions[1]:
'm = am (I'm)
're = are (you're, we're, they're)
's = is and has (he's, she's, it's)
've = have (I've, you've, we've, they've)
'll = will (I'll, you'll, he'll, she'll, it'll, we'll, they'll)
'd = had and would (I'd, you'd, he'd, she'd, it'd, we'd, they'd)

Uses:
People use contractions to:
- ✓ sound more inviting.
- ✓ speak faster.
- ✓ save time.

[1] Taken and adapted from: http://dictionary.cambridge.org/grammar/british-grammar/writing/contractions

Practice

A. Write the contracted forms of the underlined expressions in the following sentences.

Sentence to analyze	Contracted form
1. I have done some research on perpetual motion machines.	
2. My professors are all very talented physicists. They are always finding new ways to understand our world.	
3. However, my lab professor is exceptional. I know she will discover exotic matter at some point.	
4. Human beings are very curious. They would dedicate they entire life conducting experiments if they could.	

B. Be ready to read them aloud.

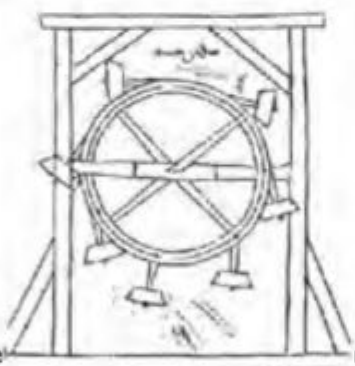
C. Get in pairs and take tums reading the original sentences and the new sentences with the contracted forms of the underlined expressions.

Material 5

Unit 1-Getting it right!

Warm-up

What do these machines have in common?



Perpe **inecourt** **15th-cent**

Boyle's **eme**

Unit 1: Getting it right! **08/16/2017** **Instructor: Yannick Pilgrim**
Week 2-Class 2 **Lesson Plan #4** **Assistant: Elizondo & Sánchez**

Unit goal: By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General Objective: By the end of the class, students will be able to identify the main idea and supporting details from aural texts in the field of fluid mechanics while watching videos used as supplemental materials in class successfully.

Specific Objectives: By the end of this lesson, the Ss will:

1. define "fluid mechanics" by unscrambling a set of slips of paper.
2. make predictions about the contents of a lecture by brainstorming concepts that can be covered in an introductory class on fluid mechanics.
3. categorize discourse markers by selecting a name from a word bank.
4. identify discourse markers in a segment of a lecture by circling the discourse marker used by the speaker.
5. practice note-taking techniques by using the Cornell Method.
6. take notes to complete a diagram effectively.
7. identify the main idea and supporting details of the lecture by using their notes.
8. explain a section of the lecture by explaining a part of the diagram.
9. pronounce sentences with reduced forms of words.
10. evaluate the usefulness of the Cornell method and the use of diagrams for identifying the main idea and supporting details in a lecture.

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** In pairs, Ss are given an envelope and are to unscramble the definition of a **fluid** given by Ph.D. Roger Rangel in his lecture *Intro to Fluid Mechanics*[5]. "A substance that deforms continuously when acted on by a shearing stress of any size." One assistant Tr will write on the board: **This definition refers to** a. energies b. solids c. fluids Tr elicits the correct construction of the sentence and writes the sequence on the board. Then Tr asks Ss to take a minute to complete the statement on the board.	R S			10 min Done by 5:10 pm

[5] Taken and adapted from: https://www.youtube.com/watch?v=pAuQ4Hj2ZrU&t=91s

	Once Ss discuss, Tr elicits responses and tells Ss that the topic for the class deals with fluid mechanics.				
2	**Pre-task I** Ss are told that today they will be able to understand the main idea and supporting details from a lecture (a university class) and for that they will study new strategies. Ss are given **Handout 13.** Individually, Ss are to make predictions about the contents of a lecture by brainstorming concepts that can be covered in an introductory class about fluid mechanics. Then Ss are to work in groups of four and compare predictions. Tr then elicits responses and fills out Handout I on the board using Ss responses.	W S		Cognitive: predicting	10 min Done by 5:20 pm
3 & 4	**Pre-task II** Tr tells Ss that to understand a video or a lecture successfully, there are some elements they should pay attention to. The first one is discourse markers. Ss are given **Handout 14**. In part A, Ss are given a chart with discourse markers and are	R W S L	Discourse markers: *to illustrate *also *as a result *likewise		15 min Done by 5:35 pm

	to select a proper name for each category from a word bank. Tr elicits correct responses from Ss and goes over the list to make sure Ss understand the meaning of the expressions. In part B, Ss are to listen to a segment* of a lecture about fluid mechanics and to circle the discourse markers they hear. Ss do this part individually. Ss are then to compare with a classmate. Tr plays audio one more time for Ss to confirm their answers and then projects Handout II on the board and asks Ss come to the board to circle the right answers. *Tr plays from minute 12:40 to 16:08.				
5	**Pre-task III** Tr tells Ss that another element they need to pay attention to is to how they take notes when watching a video or listening to a lecture. For this reason, Tr explains that he will share the Cornell Method with them. Tr points out that this method is commonly used in contexts such as lectures, meetings, and conferences.	R L W S	Vocabulary: Lift, drag, aneurism, plume, shearing stress	Cognitive: The Cornell Method	20 min Done by 5:55

	Tr asks assistants to distribute **Handout 15**. Tr projects it. This is blank version for taking notes using the Cornell Method. Tr will explain the following: 1. Note-taking section: Use this largest section to write down the main ideas of the lecture or text. 2. Cue section: After you've finished taking notes, use the smaller cue section to generate your own questions that clarify meanings. 3. Summary section: Use this small space at the bottom of your page to summarize what you've written on the page in 2-4 sentences. Then Tr goes over the tips for taking notes. Tr asks Ss to read them aloud. Individually, Ss are to write their own notes from minute 12:40 until minute 16:08. They are reminded that they need to add				

	information related to the main idea and supporting details. Ss compare their answers in groups of 3. Tr then asks Ss to come to the board and fill in the projection of Handout III using their notes.				
6 & 7	**Main Task** Ss are to continue taking notes while watching the lecture from minute 16:08 until minute 22:35 in **Handout 16**. Ss compare their notes and watch the video one more time. Tr tells Ss that they will use the notes taken to complete a diagram to check their understanding. Tr distributes **Handout 17.** Ss go back to their groups of 3 and complete the diagram using all of the information they collected in their notes. Tr and assistants monitor Ss' production and make sure they are on the same track.	L W S		Cognitive: Using the Cornell Method Identifying the main idea and supporting details	25 min Done by 6:25 pm
8	**Post-task I** Planning and reporting Each group is assigned a different section of the diagram and is to explain what notes they	R S L			10 min Done by 6:35

	used to select the information needed to complete that section.				
9	**Post-task II** **Language focus** Tr distributes **Handout 18**. Tr read the description of connected speech with Ss. Tr plays video from minute 12:30 to minute 13:43. Ss are to circle the expressions they hear (either in their full form or in some reduced form). Before watching the video, Tr models the difference between a full and a reduced form using a sample sentence. Tr elicits answers from Ss so that they can practice saying phrases using connected speech.		Reduced forms: gonna, wanna, kindofa, lemme		15 min Done by 6:50 pm
10	**Post-task III (optional)** Ss are given **Handout 19**. They are to evaluate the usefulness of the Cornell method and the use of diagrams for identifying the main idea and supporting details in a lecture.	R W S L			Assigned as homework.

	Tr conducts an open class discussion about the use of those tips to help them understand the main idea and supporting details from a video or a lecture.				

Unit 13: Getting it right!
Handout I-What is the lecture about?
Strategy: Predicting. If a lecture or a video has the title "Introduction to fluid mechanics," what do you think the speaker will talk about?
Instructions: Write everything you think will be discussed in the lecture.

Your predictions

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Elizondo, Pilgrim, and Sánchez

Unit 13: Getting it right!
Handout I-What is the lecture about?
Strategy: Predicting. If a lecture or a video has the title "Introduction to fluid mechanics," what do you think the speaker will talk about?
Instructions: Write everything you think will be discussed in the lecture.

Your predictions

Unit 1: Getting it right!

Handout 14-Discourse Markers

When listening to a speaker, understanding the connection between his/her ideas can help you identify something really important, such as the main idea or a detail the speaker wants you to remember.

Instructions:

A. Read the information in the charts[6] and match the best title for each chart with its description, using the categories given. Be ready to share your selection with a classmate.

1. Title:	2. Title:	3. Title:	4. Title:	5. Title:
• To illustrate, • For example, • For instance, • Such as...	• Therefore, • As a result, • Consequently, • Since...	• Also, • Furthermore, • Additionally, • As well as	• In other words, • Essentially, • In essence, • In plain English,	• Today we should discuss... • Hopefully what you learn in a class like this will... • After today, you should be able to...

6. Title:	7. Title:	8. Title:	9. Title:	10. Title:
• Likewise, • Similarly, • Equally, • Equivalent to...	• In a nutshell, • To sum up, • In conclusion, • In summary,	• On the other hand, • However, • In contrast,	• This is important. • You'll see this again. • Remember this.	• First, • Let me start by, • Second, • Then,

Discourse markers show:	
a. Addition	b. Rephrasing
c. Test clues	d. Examples
e. Contrast	f. Cause and effect
g. Summary	h. Comparison
i. Introductions for main ideas	j. Sequence

B. Watch the following segment of the lecture "Introduction to Fluid Mechanics" given by Ph.D. Roger Rangel at the University of California and circle the discourse markers you hear in the charts.

Answer Key:

(f) 10, (c) 9, (a) 8, (g) 7, (h) 6, (i) 5, (q) 4, (e) 3, (j) 2, (p) 1

[6] Taken and adapted from: http://www.etown.edu/offices/learning/Listening_For_Main_Ideas.aspx

Unit 1: Getting it right!
Handout 15-The Cornell Method

The Cornell Method for taking notes can help you have a record of each video you watch or class you attend to. Listen to your teacher's explanation.

Cornell Notes

Video/Class: _____
Date: _____

Cue Column (Key questions)	**Note-taking Column** (main ideas, important dates, people, formulas, repeated information)

Summary (2-4 sentences in your own words)

The following are some tips that can help you take notes better:

- ✓ write short sentences (no more than 10 words).
- ✓ use your own words (unless it is a quote that you will need later).
- ✓ use abbreviations (FM= fluids mechanics)

Instructions: Watch the same segment of the lecture "Introduction to Fluid Mechanics" once more and try to take some notes, using the Comell Method.

Unit 1: Getting it right!

Handout 16-Using The Cornell Method

Instructions: Continue watching the lecture and take the necessary notes using the Cornell Method.

Cornell Notes

Video/Class: _____

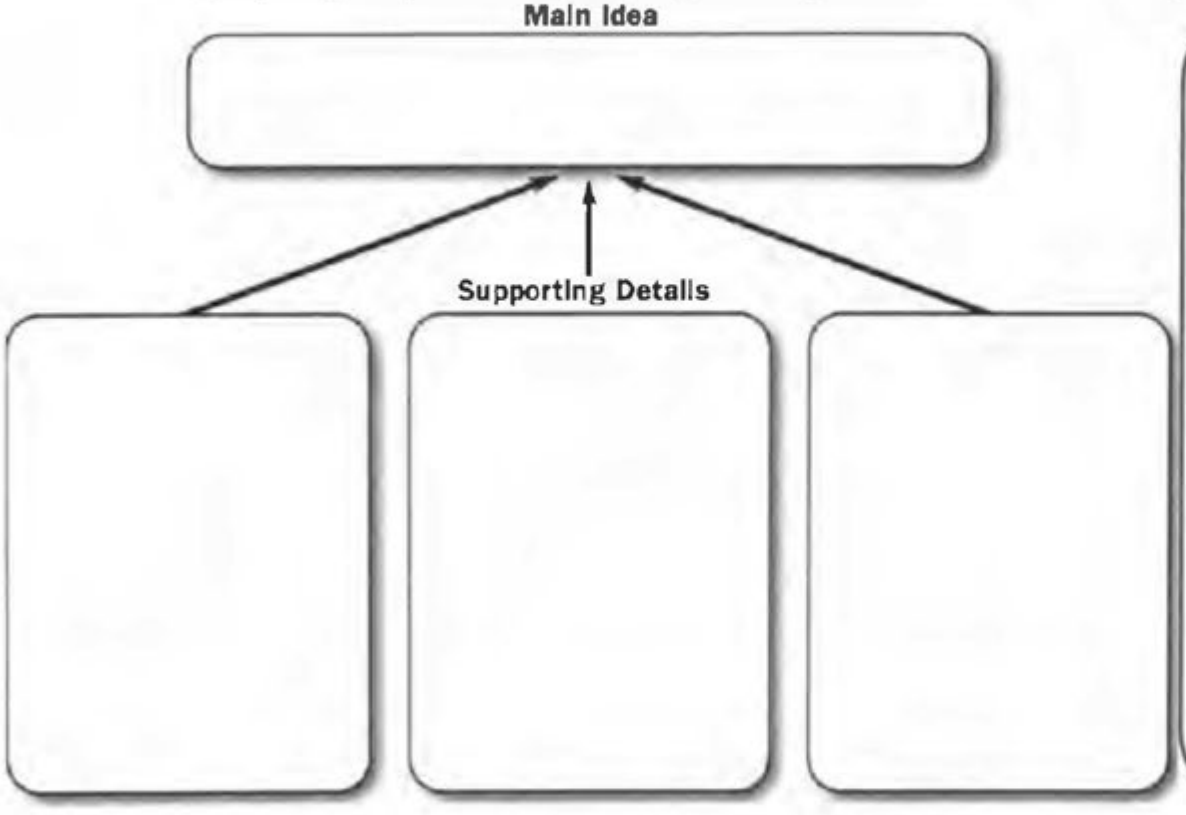
Date: _____

Cue Column (Key questions)	**Note-taking Column** (main ideas, important dates, people, formulas, repeated information)

Summary (2-4 sentences in your own words)

Unit 1: Getting it right!
Handout 17- Main idea and Supporting details

Instructions: In groups of 3, complete the following diagram using your **notes** from Handouts 15 & 16.



Important details:

1. Remember that the main idea is commonly repeated. Was there anything repeated?
2. What was the purpose of the initial quote by Parviz Moin & Kim?
3. What are some examples of problems that deal with fluid mechanics?
4. What is a fluid? Are fluids just liquids?
5. What is stress? What is its formula?
6. Which are the types of stress? Which ones affect fluids?

Unit 1: Getting it right!
Handout 18- Language Focus

Connected Speech

When people speak, they don't always pronounce every single word completely. Like with contractions, some sounds are not emphasized or are linked to others.

Instructions:

A. Pay attention to this very short clip from the lecture and circle the expressions that you hear.

Full form	Reduced form
Example: **I'm going to** start this lecture by...	**I'ma** start this lecture by...
1. Let me go; let me here switch to the computer.	1. Lemme go; lemme here switch to the computer.
2. showing you this statement	2. showing you thistatement.
3. It is kind of a nice way to...	3. It's kinofa nice way to...
4. You are going to; you're about to drink a fluid.	4. You're gonna; you're about to drink a fluid.

Structures

There are many forms for these reductions. Sometimes sounds can be eliminated, and sometimes they are just neutralized or reduced.

These are some types of reductions:

Eliminating sounds or words	Changing consonants radically	Liking words
✓ Some sounds can be eliminated: • Let me=**lemme** • Let him*= **letim** *The same happens with other pronouns: Let her= **let'er** Let them= **let'em**	✓ If a word ends in **[t]** and the next word is **"you,"** you can pronounce the [t] as "ch".	✓ If a word finishes in one sound and the next word starts with that sound, eliminate one of them and pronounce the two words as one. • This statement= **thi**statement • It's about time the speaker...= It's about**i**me the speaker...
✓ Some words can be eliminated: • going to= gonna • want to= wanna • I'm going to= I'ma	• What you mean is... = **Whatcha** mean is... • Don't you think...? **Doncha** think...? • I'm going to let you... **I'ma letcha**...	✓ If there are prepositions or small words next to each other in one sentence, pronounce them together as one word. • It's kind of a nice way to... It's **kindofa** nice way to...

Practice

D. Write the reduced forms of the underlined expressions in the following sentences.

Sentence to analyze	Contracted form
1. <u>I am going to</u> study fluid mechanics this coming semester.	

2. I really like thermodynamics. Don't you?	
3. This statement is kind of a difficult concept to understand.	
4. Let them talk about tensile stress because we want to discuss shearing stress.	

E. Be ready to read them aloud.
F. Get in pairs and take tums reading the original sentences and the new sentences with the contracted forms of the underlined expressions.

Useful language:

✓ How do you pronounce the reduction in #X?
✓ The reduction in #X is difficult for me. Can you help you me pronounce it?
✓ I'm not sure how to pronounce #X. Any ideas?
✓ I think #X is pronounced like this (your pronunciation). What do you think?
✓

Handout 19-Strategies

Instructions: Answer the following questions having in mind the strategies we used today to identify the main idea and supporting details in a video (lecture).

A. Please take a moment to rate the following statements. Indicate your answer by placing an X in the appropriate column.

1- Agree Completely 2- Agree Mostly 3- Disagree Mostly 4- Disagree Completely

	Statements	1	2	3	4
(a)	The strategy **"predicting"** helped me understand the main idea of a lecture.				
(b)	The strategy "predicting" helped me understand the supporting details of a lecture.				
(c)	The Comell Method helped me understand the main idea of a lecture.				
(d)	The Comell Method helped me understand the supporting details of a lecture.				
(e)	Using a diagram helped me understand the main idea of a lecture.				
(f)	Using a diagram helped me understand the supporting details of a lecture.				

B. Answer these questions based on your experience today.

1. Which strategy helped you the most? Why?

_____

_____

2. Which strategy didn't help you much? What did you do instead?

_____

_____

3. Do you think these strategies will make you a better listener/student? Why or why not?

Material 6

3. a substance that deforms

1. continuously when acted on

2. by a shearing stress of any size

.....

3. a substance that deforms

1. continuously when acted on

2. by a shearing stress of any size

.....

3. a substance that deforms

1. continuously when acted on

2. by a shearing stress of any size

Unit 1: Getting it right!
Instructor: Andrea Sánchez
Assistant: Elizondo & Pilgrim

Lesson Plan #5
Week 3 - Class 1
08/21/2017

Unit goal: By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General Objective: By the end of the class, students will be able to employ reading strategies when reading texts on the field of mechanical design by following instructions to assemble a model crane correctly.

Specific Objectives: By the end of this lesson, Ss will:

11. identify different types of machines and some parts of a crane by matching the words with the correct part.
12. present how a model crane can be built using materials at home by describing the materials they would use and by drafting a model crane.
13. identify the materials needed to build a model crane in class by scanning important details through a text.
14. follow written instructions to build a model crane while dealing with difficult words using reading techniques.
15. monitor their understanding of the text by answering a check list.
16. express what strategies they used to accomplish the task successfully by referring to a list provided.
17. explain the steps required to build a machine, using imperatives.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** In groups of four, Ss have a small competition game. Trs will be in charge of three different stations in which Ss will find a large printout (see **Warm-up Poster**). It will contain illustrations of simple machines and some parts of a crane. Ss are to identify them by matching their correct names given in slips of paper to the correct images in the printout (see **Warm-up Words to match**). Each group then shows their large printout to the rest of the class and Tr provides feedback. Ss who get all of the names right get a prize.	R W S	**Vocabulary** *lever, wedge, screw, wheel, axle, pulley, winch, crane, hook, counterweight, boom, hoist, jib.*		15 min minutes Done by 5:15 pm.

2	**Pre-task 1** Tr says: "As you may see, there is an emphasis on one machine. Yes, cranes. But before we get started, we wanted to know if you think that building a model crane in class is possible with materials you can find at home." Ss are given **Handout 20**. Ss are to answer the following questions in their groups: 1. Think if it is possible to create a crane with materials you can find at home. 2. Think of the materials you would use for creating a crane. 3. Draw a very simple draft of what you would do in class." Ss have time to think of their answers and then they report back to the class.	S R W	**Vocabulary** Materials: metal, wood, steel, glass, aluminum, paper, wire, leather, cardboard. **Useful language:** • Building a crane is possible/impossible because... **Useful language (materials):** • For the counter weight, we can have a wooden ... • For the boom, we may use a plastic... • For the hoist, we can use a metal... • For the hook, we can use a leather...	Negotiation / Turn taking	20 min Done by 5: 35 pm
3	**Pre-task II** Tr says:	R W	**Useful language:**	**Scanning**	10 min

	"Well, let us tell you about our proposal. It is very simple but illustrates the purpose of moving one object from one location to the other using a pulley system. For this, we're giving you the instructions on how to build a model crane and please complete **Handout 21** with it." In this handout, Ss are instructed to determine which materials they will need for building a model crane in class after scanning the text *Let's build a crane*!*. Trs will bring more materials than the ones needed with the purpose of having Ss use scanning to pick only the materials they are instructed to use. A table with the materials will be set in a corner of the classroom, and Ss are to take the materials they require from the table only once. Tr says:	S	• How many X do you think we'll need? • Do we need X at all? (+) Yes, I think we'll need some X. (-) No, I think we're good. • Do you think we have everything we need? (+) Yes, I think we have it all. (-) I'm not sure. Can we double check?		Done by 5:45 pm

	"For this activity you have to use a strategy called scanning. It consists of looking only for specific information in the reading quickly. Only look for the materials and the quantities needed for building your crane."				
4 & 5	**Main Task** Ss are to work in pairs and follow the instructions to build their crane (After reading the text *Let's build a crane*!). Ss are told to deal with difficult words by use reading strategies learned in previous classes while reading, if necessary. They are to circle the words they don't know and fill the chart in **Handout 22** while building their crane. A poster will be posted on the board that exemplifies some reading strategies from previous classes (see **Poster for Reading Strategies**). Ss will have already studied these strategies during week 1;	R W S	**Vocabulary:** spool, thread, ladder, popsicle sticks, end (noun), slits, snugly, toothpicks, set aside, tie, string, winch, far enough, cut off, cut along.	**Cognitive:** • Dealing with difficult words • Identifying main ideas and supporting details	30 min Done by 6:15 pm

	hence, there is less emphasis on strategies this time.				
6	**Post-task 1** *Planning* In groups of 4, Ss will share what they came up with after following the instructions. Each new group is assigned one of the five steps from the reading *Let's build a crane*!* and they are to explain to the class what the step was about and if they had any complications with it. If so, they are to explain how they solved the problem. *Reporting* Ss report back to the class. Each subgroup presents their step and what they did to overcome issues. As an open class, Tr motivates Ss to discuss which were the words that they circled and what they did to guess their meaning.	S L R		**Metacognitive strategy:** Monitoring progress	15 min Done by 6:30 pm

	Tr clarifies any clues that Ss might have missed when applying this strategy. Ss then are asked to think of the technique they used the most when reading the instructions. They are to answer these questions in their groups: 1. Which technique was the most effective? 2. Which technique didn't help much? What did you do instead?				
7	**Post-task 2** *Language Focus* Ss are to follow the instructions in **Handout 23**. Ss are to go back to the reading and complete some blanks with the imperative that begins each paragraph. Then Tr will ask Ss to read the structure, function and examples of imperatives aloud. Ss are to write 5 steps for building a machine using	R W S	**Grammar** *Imperatives for providing instructions:* Lay two sticks vertically on a flat surface. Glue them in place. Repeat the pattern on the opposite side. **Pronunciation** Key words: crane, vertically, winch, wind, spool, thread, ladder.		15 min Done by 6:45 pm

	imperatives and sequence markers. Ss share their sentences with a classmate.				

Unit 1: Getting it right!

Handout 20- Is it possible?

Instructions: In groups, answer the following question and be prepared to share your answers with the class.

- ✓ Is it possible to create a model crane with materials you can find at home?
- ☐ If your answer is **yes**, think of the materials you would use for creating a crane and draw a very simple draft of what you would build in class.
- ☐ If your answer is **no**, be ready to explain to the class why not.

Useful language:

- Building a crane is possible/impossible because X.

Useful language (materials):

- For the counterweight, we can have a wood X.
- For the boom, we can use a paper X.
- For the hook, we can use a glass X.

List of Materials
polymer, wood, wool, cardboard, gold, glass, silver, aluminum, rubber, paper, iron, steel, ceramic, leather, polystyrene, brick

Universidad de Costa Rica
English for Mechanical Engineering Students
Elizondo, Pilgrim, and Sánchez
Unit 1: Getting it right!
Handout 20-Is it possible?
Instructions: In groups, answer the following question and be prepared to share your answers with the class.
✓ Is it possible to create a model crane with materials you can find at home?
☐ If your answer is **yes**, think of the materials you would use for creating a crane and draw a very simple draft of what you would build in class.
☐ If your answer is **no**, be ready to explain to the class why not.
Useful language:
• Building a crane is possible/impossible because X.
Useful language (materials):
• For the counterweight, we can have a wood X.
• For the boom, we can use a paper X.
• For the hook, we can use a glass X.
List of Materials
polymer, wood, wool, cardboard, gold, glass, silver, aluminum, rubber, paper, iron, steel, ceramic, leather, polystyrene, brick

Unit 1: Getting it right!
Handout 21- Scanning

Outside of the class there is a table with materials for you to build a model crane. There is a limited supply of materials for everybody. The supplies are available on a first come, first served basis.

Instructions:

1. In pairs, scan through the reading ***Let's Build a Crane*** for the number and the kind of materials you will need to build a model crane.
2. You only have **one** chance to go outside to get materials; consequently, you must have a definite inventory before you go get your materials.
3. You may take this list with you to make sure you bring everything you will need.

Quantity	Object

Useful language:

- How many X do you think we'll need?
- Do we need X at all?
  (+) Yes, I think we'll need some X. (-) No, I think we're good.
- Do you think we have everything we need?
  (+) Yes, I think we have it all. (-) I'm not sure. Can we double check?

Unit 1: Getting it right!
Handout 22

Dealing with difficult words

In the spaces below, write the words/phrases unknown to you and write the number of the strategy you used to guess the meaning of those words.

Unknown word/phrase	Paragraph where you found it	Strategy used
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Monitoring your understanding

If you don't understand something, ask yourself:

- ✓ Should I go back and read the paragraph/sentence again?
- ✓ Where did I stop understanding?
- ✓ Is the problem a word or the structure of a sentence?
- ✓ Can you use any of the previous techniques?

Unit 1: Getting it right!
Handout 23

Language Focus: Imperatives

Instructions: Individually, read the information on the use of imperatives. Then, do Part A individually and Part B in pairs.

Imperatives

Go back to the reading ***Let's Build a Crane***. Write in the lines the first word in each paragraph:

1. _____ 2. _____ 3. _____

4. _____ 5. _____ 6. _____

Structure:

- ✓ As you can see, imperatives are verb forms that **(are/ aren't)** conjugated.
- ✓ Use "**do not**" or "**don't**" before the verb to make the statement negative.
- ✓ Don't write a subject when using imperatives.

Function:

- ✓ Imperatives are used to give instructions or commands.
- ✓ They are commonly used with sequence markers: first, second, third, then, next, after that, lastly, finally, among others.

Example:
Instructions to build a model crane in class:

1. First, find the right materials.
2. Then, follow the instructions in the DIY reading.
3. After that, make sure you do everything in every step.
4. Finally, check that the hook can lift a light load.

Practice

A. Individually, think of a machine you know how to build. In the following spaces, write 5 steps for making it, using sequence markers and imperatives.

Instructions

to_____

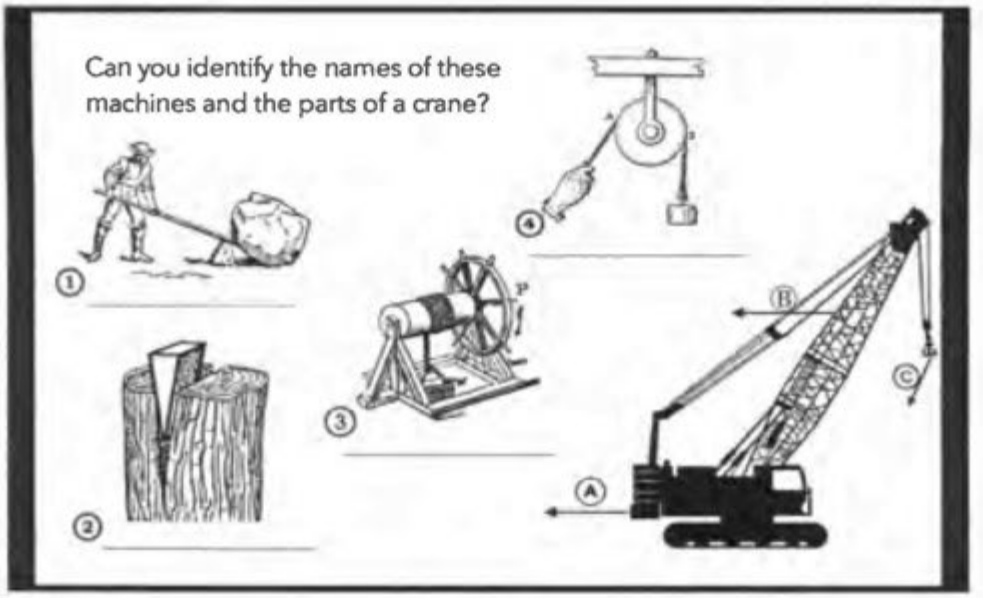
1. _____.
2. _____.
3. _____.
4. _____.
5. _____.

B. Share what you did in exercise A with a partner. Ask your classmate if these 5 steps are the only ones required to build that machine or if you need more. In case there are more steps, try to explain what the other steps are about.

Useful Language

- ✓ Can you repeat that instruction again? I didn't quite understand it.
- ✓ Are all of the steps clear?
  (+) Yes, they are.
  (-) No, not really. Can you explain step X again?
- ✓ Are these all of the steps necessary to build that machine?
  (+) Yes, they are.
  (-) No, they aren't. There are X more. Let me tell you about them...

Material 7A



Material 7B

Let's Build a Crane*!

Cranes are traditionally used in the construction industry or where there is a need to move heavy items. Cranes use a pulley system to reduce the strain and increase the weight that can be moved. Some cranes have magnets rather than hooks to grab items and move them. A model crane can be built using simple craft items and supplies from around the home. This model can be built with either a magnet or hook.

MAKING A MODEL CRANE

1. Lay two Popsicle sticks vertically on a flat surface. The sticks should be parallel and far enough apart to put a thread spool between them. Place one thread spool between the Popsicle sticks, so the ends of the Popsicle sticks are even with the outside of the spool of thread. Glue them in place. This will be the top of the arm of the crane.

2. Cut the front off of the cereal box. Measure the Popsicle sticks from the previous step against the edge of the box, and cut two slits along the top, front edge. The crane will be inserted into these slits in a subsequent step.

3. Insert a pencil into the center of the second thread spool. The pencil should fit snugly, so the spool turns when the pencil is turned. Add glue as necessary to firmly attach the pencil to the spool. Set the spool inside the box with the pencil ends extended over the sides of the box. The spool should turn freely when the pencil is turned.

4. Glue toothpicks across both Popsicle sticks in a ladder pattern. Repeat pattern on the opposite side, and glue in place. Set aside to dry completely. Once dry, insert the bottom of the sticks into the previously cut slits on the cereal box. Place the sticks at a 45-degree angle to the bottom of the box, and glue in place. Set aside to dry.

5. Tie one end of the string to the thread spool attached to the pencil. Thread the string up through the arm of the crane and over the spool at the top. Tie the other end to a paper clip or button magnet to complete the crane. Turn the pencil to wind the "winch" of the crane and move the "load" at the other end.

Tip

Cut a small "V" out of the cereal box where the pencil lies across the top to hold the winch more securely in place.

***Taken and adapted from:** http://sciencing.com/build-crane-school-project-5993565.html

Material 9

Reading Strategies

Techniques to deal with difficult words
1. Analyze suffixes
2. Analyze the part of speech (is it a noun, verb, adjective, or an adverb?)
3. Try to find a definition, synonym, or antonym in the sentence before or after the word.
4. Analyze noun+ noun collocations
5. Think of a similar word in Spanish.
6. If available, pay attention to pictures in the text.
7. Ignore the word when it is unnecessary because you understand the main idea.
8. Confirm your guess by asking a classmate or a teacher: **Does (a word) mean X?**

Examples:

1. **The jib, or the boom, is the projecting arm of a crane.**

In this example, we can find a definition next to the word.

2. **A cardboard box can be useful to make a model crane at home.**

In here, the noun+noun collocation shows that the word "cardboard" is related to the word "box", so it can be a material.

3. **Place one spool between the sticks.**

In this example, we see that the word "spool" is a noun because there is a quantifier before it. Also, by looking at the picture, you can identify the spool because it is between the sticks.

Unit 1: Getting it right! **Lesson Plan #6**
Instructor: Andrea Sánchez **Week 3 - Class 2**
Assistant: Elizondo & Pilgrim 08/23/2017

Unit goal: By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General Objective: By the end of the week, students will be able to practice techniques for increasing reading speed while identifying main ideas and supporting details.

Specific Objectives: By the end of this lesson, the Ss will:

1. determine their reading habits by playing a "people bingo."
2. identify their current reading speed by applying a formula while reading a text about fluids.
3. self-assess their reading speed by answering a small questionnaire in groups.
4. identify repeated patterns by practicing scanning exercises with words related to fluids mechanics.
5. identify the main idea in a small paragraph using eye fixation strategies about the features of fluids.
6. build reading speed through repeated reading.
7. identify supporting details while practicing techniques for increasing reading speed by playing a game in groups.
8. evaluate reading strategies by taking a small survey.
9. correctly pronounce the different realizations of the possessive 's.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Ss are told that today they will practice one more strategy to become better readers: increasing reading speed. Tr explains that as busy students they need to learn to read fast to make the most out their time. Ss are given **Handout 24**. Ss are to play a people bingo. They are to ask other Ss for their reading speed and reading habits. The idea is to help them see the gap in their reading practices. Tr then elicits responses from Ss.	R S L W			10 min Done by 5:10 pm
2 & 3	**Pre-task I** Tr tells Ss this next exercise will help them identify their current reading speed. One assistant will write on the board (the figure represents 10-second intervals): 1 2 3 4 5 6 (1 minute) 7 8 9 10 11 12 (2 minutes) 13 14 15 16 17 18 (3 minutes) 19 20 21 22 23 24 (4 minutes)	R S W L	**Useful Language:** 1. My reading speed is X. 2. I think I'm (not) doing okay because X. 3. I need/don't need improve my reading speed because X.	**Cognitive:** Increasing reading speed	15 min Done by 5:25 pm

	Tr tells Ss that they will read a 250-word text as they normally do to determine their reading speed. Tr tells Ss that she will be pointing at the next number in the sequence to indicate that 10 seconds have gone by. When Ss finish reading, they must look at the board immediately and write the number the Tr is pointing at. Ss are given **Handout 25**. They are told that they cannot see the reading until they are instructed to do so. Tr reminds Ss they must write the number she is pointing at when they finish reading. Ss are then asked to answer 5 true/false questions to determine reading comprehension. Tr elicits responses and invites Ss to calculate their reading speed in words per minute (wpm) by using an equation: **X÷Y *x* 6= z** Here, **X** is the number of words in the text. **Y** is the number of 10-second intervals the person needed to read the text. **6** is the number of 10-second intervals in a minute.				

	Z is the reading speed in words per minute (wmp). For example, if a person takes 180 seconds (18 ten-second intervals) to read the text, the equation will read: **250÷18 x 6= 83.3** The reading speed is 83.3 wpm. An assistant writes on the board: 1. **My reading speed is X.** 2. **I think I'm (not) doing okay because X.** 3. **I need/don't need improve my reading speed because X.** After obtaining their reading speed, Ss are to share their reading speed rates with other students and discuss whether they believe they are doing okay or not in terms of reading speed, using the questions on the board. One assistant will pass around a list in which Ss have to write their names and their reading speed in wpm. Tr tells Ss that they will compare this list with their reading speed rates at the end of the course.				

	Tr also tells Ss that the average university student normally reads 300 wpm, which will be our goal.				
4	**Pre-task II** Ss are told that to improve their reading speed there are several tips they can practice. Tr tells that today they will be practicing three of them. Assistants distribute **Handout 26**. Ss are told to look at the image in the first column and then circle the same image in the next columns. For this, they will be working in three groups and the student who finishes circling all of the identical images gets the candy that will be in the center of the group. Ss must use scanning to identify key information moving their eyes rapidly, not focusing on meaning. (in groups of 4 = candy)	R W S L	**Vocabulary:** Heat, aerospace, fluids, & aesthetics.	**Cognitive:** Scanning	5 min Done by 5:30 pm
5	**Pre-task III** Ss are told that there is another technique to read faster. It is about making fewer fixations (several jumps when we read line after line) and reading in chunks, or sense groups (units of meaning). Tr writes on the board: **Building a crane/was an easy task/ last Monday.**	L R W S	**Useful language:** ✓ What did you write in #X? ✓ I think the main idea in X is X. ✓ I didn't read anything about #X. Did you?	**Cognitive:** Making fewer fixations **Cognitive:** Identifying main ideas	15 min Done by 5:45 pm

	Tr points out that an efficient reader would make this separation of sense groups and would only have three fixations, and not 9 (as a slow reader would since he would read word for word). Now another assistant writes on the board: **When we** **talked about** **building a crane in class** **many people said it was** **a very easy task last Monday.** Tr explains that to make fewer fixations, they must force themselves to make only one fixation per line by moving their index finger/pen down the center of the column and making their eyes follow it. Tr tells Ss not to sound the words they read, as this will slow them down. Ss then are given **Handout 27**. In new groups of 4, Ss are to sit in a circle and write in their handouts the main idea of a small text. They are to make as fewer fixations as possible. Each Ss will be given a different reading and a copy of Handout IV. When the Tr instructs it, Ss are to read the reading (that has been set out in		✓ I didn't understand X. Did you?		

	narrow columns) and to write its main idea in the handout. Ss will have one minute per reading. Tr will instruct when Ss have to give their reading to the person sitting to their right. Ss do the same as before. They will do this four times. Tr will give 15 seconds to do the reading and one minute to write the main idea of the text. Ss then compare the main ideas they wrote down in their handouts. Tr elicits responses and verifies Ss understood the main ideas were understood correctly.				
6	**Pre-task IV** Tr tells Ss that the last tip for increasing reading speed is called repeated reading. To practice it, Tr tells Ss that they will be given a 100-word text and are to read it four times in one minute. Ss are given **Handout 28.** Then they are to answer one quick question to check comprehension. Tr checks answer in an open class. Tr signals when the one minute starts and finishes so that everyone works at the same time.	R W S	**Vocabulary:** Amusement park, steep, roller-coaster, potential energy, kinetic energy.		10 min Done by 5:55 pm

	Tr tells Ss that they can increase their reading speed by focusing on reading the same paragraph over and over again for short periods of time, instead of spending a lot of time just reading the text once. This happens because old information once read is easier to understand and analyze. Tr tells Ss that this speed is the one expected of them every time they read.				
7	**Main task** Ss are told that to put into practice all of the techniques studied today, they will be playing a game in which reading speed is what can make them win or lose. In groups of 3 students, they are to answer 10 questions from the reading. The first group that answers all of the questions correctly wins a prize. Tr will keep on her desk five sets of copies (one per team: **Handout 29**) and the assistants will help her time each student's reading time. To answer these questions, only one student per group can come to the front of the class and read for up to 2 minutes. Then this student must go back to his/her group and report what s/he	R S W	**Vocabulary:** Hydraulic lifts, jacks and rams; siphon hose, piston, bilge and sump pump. **Useful Language:** ✓ I think the answer for X is X. ✓ I didn't read anything about #X. Did you? ✓ What are we missing? We're missing #X. ✓ I think we're done. Right?	**Cognitive: Identifying main ideas**	20 min Done by 6:15 pm

	read about so that they can all answer the 10 questions. If the team needs more information to answer the questions, another student must come to the front of the class. Again this student will only have 2 minutes to read the text. The same goes for the last student. Tr tells Ss that if they need to read the reading once more, one of the students can do so once all of the students in the group have participated. The students are not allowed to write down any information while they read. The total reading time per group is 8 minutes (with groups of 3 students, plus 2 extra minutes). Once a group announces that they have all of the correct answers, Tr will check with her Answer Key. If they are correct, the game stops and those students are to share their answers with the rest of the class.				
8	**Post-task I** Planning and reporting Ss are given **Handout 30**. Ss will fill out a survey about the usefulness of the techniques	R W S L	**Useful language** ✓ The technique that helped the		15 min Done by 6:30 pm

	they learned today and about new goals and course of action to increase their reading speed.		most was X because X. ✓ A technique that didn't help much was X because X. ✓ I think this can make me a better reader because X. ✓ I will increase my reading speed because I will do X, Y, and Z.		
9	**Post-task II** Ss are given **Handout 31**. They are instructed to read the descriptions aloud with the class. Ss are to read a short description of possessives and the realization of the possessive 's. Ss complete an info-gap activity pronouncing the possessive 's with the different realizations. Then Tr elicits correct answers and pronunciations.	R S L W	**Useful language:** ✓ Can you repeat that? ✓ What is the meaning of X? ✓ How do you spell that? ✓ Is that pronounced with [s] or [z]?		15 min Done by 6:45 pm

Unit 1: Getting it right!

Handout 24- People Bingo

Instructions: Walk around the room asking people if they do what each box describes. If a classmate says **yes,** write their name on the line. If they say **no,** move on to another classmate. You may ask more than one question per person.

Useful Language:

- ✓ Do you X? Yes, I do/ No, I don't.

B	I	N	G	O
READ TWO ARTICLES PER WEEK **Name:**	READ FOR PLEASURE **Name:**	READ SCHOOL MATERIAL ONLY **Name:**	HATE READING **Name:**	READ 300 WORDS PER MINUTE **Name:**
READ SLOWLY IN ENGLISH **Name:**	READ FAST IN ENGLISH **Name:**	FREE SPACE	READ 500 WORDS PER MINUTE **Name:**	LOVE READING **Name:**
READ AT LEAST ONE BOOK PER MONTH **Name:**	READ SOCIAL MEDIA ONLY **Name:**	READ SLOWLY IN SPANISH **Name:**	READ FAST IN SPANISH **Name:**	READ 100 WORDS PER MINUTE **Name:**

Unit 1: Getting it right!
Handout 25- Reading Speed

What is mechanical engineering[1]?

"Mechanical engineering is a diverse subject that derives its breadth from the need to design and manufacture everything from small individual parts and devices (e.g., microscale sensors and inkjet printer nozzles) to large systems (e.g., spacecraft and machine tools). The role of a mechanical engineer is to take a product from an idea to the marketplace. In order to accomplish this, a broad range of skills are needed. The mechanical engineer needs to acquire particular skills and knowledge. He/she needs to understand the forces and the thermal environment that a product, its parts, or its subsystems will encounter; to design them for functionality, aesthetics, and the ability to withstand the forces and the thermal environment they will be subjected to; and to determine the best way to manufacture them and ensure they will operate without failure. Perhaps the one skill that is the mechanical engineer's exclusive domain is the ability to analyze and design objects and systems with motion. To put it simply, mechanical engineering deals with anything that moves, including the human body, a very complex machine. Mechanical engineers learn about materials, solid and fluid mechanics, thermodynamics, heat transfer, control, instrumentation, design, and manufacturing to understand mechanical systems. Specialized mechanical engineering subjects include biomechanics, cartilage-tissue engineering, energy conversion, laser-assisted materials processing, combustion, MEMS, microfluidic devices, fracture mechanics, nanomechanics, mechanisms, micropower generation, tribology (friction and wear), and vibrations. The American Society of Mechanical Engineers (ASME) currently lists 36 technical divisions, from advanced energy systems and aerospace engineering to solid-waste engineering and textile engineering."

Your speed: _____

Reading comprehension questions

After reading about mechanical engineering, write an X under **True** or **False**, according to the information provided in the text.

	True	False
1. The role of mechanical engineers is to sell products in the market.		
2. The reading mentions skills that a mechanical engineer must learn.		
3. The reading says mechanical engineering deals with everything that moves and that doesn't move equally.		
4. The reading mentions biomechanics as a specialized subject.		
5. The text explains what MEMS are.		

Calculating your reading speed: X÷Y *x* 6=

[1] Taken and adapted from: http //me columbia.edu/what-mechanical-engineering

Unit 1: Getting it right!
Handout 26- Eye fixation
Instructions: Look at the symbol, word, or sequence in the first column. Then, circle the element that is identical in the other columns. The person who completes every five elements first takes the candy given to each group. It must be put on your desk so that people can steal it in case another student finishes the following 5 elements before you do.

Line	Model to look at	Column A	Column B	Column C
1.	-*	--*	-*	*-
2.	^>	>^	^<	^>
3.	}}}\	}}}}\	}/}}	}}}\
4.	&*&	&*&	&&*	*&&
5.	heat	heap	hear	heat
	Take candy			
6.	%$#&	%#$&	%$#&	&%#$
7.	Ppdf	Pdfd	Pfdf	Ppdf
8.	***#	***#	***$	***@
9.	9283	9238	9832	9283
10.	aerospace	arrowspace	aerospace	spaceaero
	Steal candy			
11.	.,.76	.,.67	76.,.	.,.76
12.	][%!	][!%	][%!	[%!]
13.	=-><	+-><	=-><	=-<>
14.	Jhdsfjghrue	Jhdsfjghreu	Jhdsfjghrue	Jhdsfjghure
15.	fluids	fluidS	FLuids	fluids
	Steal candy			
16.	765	756	755	765
17.	btr	brt	btr	tbr
18.	πΩσ	πΩσ	σπΩ	ΩΩσ
19.	◆■◆🗁	◆◆◆🗁	🗁◆■◆	◆■◆🗁
20.	aesthetics	esthetics	aesthetics	Aesthetics
	Steal candy for the last time			

Unit 1: Getting it right!
Handout 27- Making fewer fixations

Instructions:

A. You will read four texts. You will have 15 seconds to read each text[8]. After reading each text, flip it and write down its main idea. You have 1 minute to write the main idea of each text. After that minute, give your reading to the person sitting to your right.

Text Number	Main Ideas
1.	
2.	
3.	
4.	

Remember the tips to read fast:

- ✓ Do not read word for word.
- ✓ Read using your peripheral view.
- ✓ Make fewer fixations by forcing yourself to read forward.
- ✓ Do not pronounce every word.

B. Be ready to share your answers with a classmate.

Useful language:

- ✓ What did you write in #X?
- ✓ I think the main idea in X is X.
- ✓ I didn't read anything about #X. Did you?
- ✓ I didn't understand X. Did you?

[8]Taken and adapted from: Nakayama, Y., & Boucher, R. F. (2000). *Introduction to fluid mechanics*. Oxford: Butterworth-Heinemann.

Text 1

Fluids are divided into liquids and gases.
A liquid is hard to compress
and as in the ancient saying
'Water takes the shape of the vessel containing it',
it changes its shape according to the shape of its container
with an upper free surface.
Gas on the other hand is easy to compress,
and fully expands to fill its container.
There is thus no free surface.

✂----------

Text 2

An important characteristic of a fluid
from the viewpoint of fluid mechanics
is its compressibility.
Another characteristic is its viscosity.
A fluid increases its pressure against compression,
trying to retain its original volume.
This characteristic is called compressibility.
Furthermore, a fluid shows resistance
whenever two layers slide over each other.
This characteristic is called viscosity.

Text 3

In general, liquids are called incompressible fluids
and gases compressible fluids.
Nevertheless, for liquids, compressibility
must be taken into account
whenever they are highly pressurized,
and for gases compressibility
may be disregarded whenever
the change in pressure is small.
Although a fluid is an aggregate of molecules
in constant motion,
the mean free path of these molecules
is 0.06pm or so.

Text 4

Fluid statics is concerned with the balance
of forces which stabilize fluids at rest.
In the case of a liquid,
as the pressure largely changes
according to its height,
it is necessary to take its depth into account.
Furthermore, even in the case of relative rest,
the fluid can be regarded
as being at rest if the fluid movement
is observed in terms of
coordinates fixed upon the vessel.

Unit 1: Getting it right!
Handout 28- Repeated Reading
Instructions:

A. Read the following text[9] 4 times within 1 minute.

5.2 Conservation of energy

Consider a roller-coaster running with great excitement in an amusement park (Fig. 5.2). The speed of the roller-coaster decreases when it is at the top of the steep slope, and it increases towards the bottom. This is because the potential energy increases and kinetic energy decreases at the top, and the opposite occurs at the bottom. However, ignoring frictional losses, the sum of the two forms of energy is constant at any height. This is a manifestation of the principle of conservation of energy for a solid.

Fig. 5.2 Movement of roller-coaster

B. Answer the following question:

What is the example of the roller-coaster trying to illustrate?

[9]Taken and adapted from: Nakayama, Y., & Boucher, R. F. (2000). *Introduction to fluid mechanics*. Oxford: Butterworth-Heinemann.

Unit 1: Getting it right!
Handout 29- Reading Competition
Instructions: Answer the following questions based on the reading. The first group to write all of the correct answers wins.

1. What are the two principles discussed in the first paragraph?

   _____

2. Why is Pascal's principle mentioned in paragraph 1?

   _____

3. Hydraulic lifts can be found in machines used by ...

   _____ & _____

4. What are two differences between a hydraulic jack and a hydraulic ram?

   _____

   _____

5. How do pumps work?

   _____

6. Are siphon hoses and piston pumps equally complex (according to the reading)?

   _____

7. What does the image on page 2 show?

   _____

8. What does a bilge pump do?

   _____

9. What does a sump pump do?

   _____

Useful Language:
- ✓ I think the answer for X is X.
- ✓ I didn't read anything about #X. Did you?
- ✓ What are we missing? We're missing #X.
- ✓ I think we're done. Right?

Unit 1: Getting it right!
Handout 30- Setting goals

Instructions:

A. Answer the following questions based on your experience today.

1. Which technique helped you the most? Why?

_____

_____

2. Which technique didn't help you much? What did you do instead?

_____

_____

3. Do you think these techniques will make you a better reader? Why or why not?

_____

_____

4. Do you want to increase your reading speed? If your answer is yes, please write down three things you plan to do to increase your reading speed.
   a. _____
   b. _____
   c. _____

B. In groups of 3, share your answers with your classmates.

Useful language

- ✓ The technique that helped the most was X because X.
- ✓ A technique that didn't help much was X because X.
- ✓ I think this can make me a better reader because X.
- ✓ I will increase my reading speed because I will do X, Y, and Z.

Unit 1: Getting it right!
Handout 31 A- Language Focus

The Possessive ('s)

When you need to indicate **possession** when writing or speaking, you can use an apostrophe (') and the letter **"s"** to do so.

For example, in the text you analyzed about the applications of fluid mechanics, there are expressions such as Bernoulli**'s** principle, Pascal**'s** principle, auto mechanic**'s** shop, a car**'s** fuel tank, and a plug**'s** ignition.

However, the **'s** is **not** pronounced in the same way in all of the cases.

Instructions:

B. Pay attention to how your instructor pronounces these expressions, and write a ✓ in the column that contains the pronunciation of the possessive you hear.

Expressions	Possible pronunciations		
	/s/	/z/	/ɪz/
1. Bernoulli's principle			
2. Pascal's principle			
3. mechanic's shop			
4. car's fuel tank			
5. plug's ignition			
6. a gauge's pressure			

Pronunciation Ti

/s/	/z/	/ɪz/
If a word ends in a voiceless sound, pronounce the 's as [s]. Examples: ✓ A mechanic**'s** shop ✓ Matt**'s** car jack	If a word ends in a voiced sound, pronounce the 's as [z]. Examples: ✓ Pascal's principle ✓ A plug**'s** ignition	If a word ends in s, z, ch, sh, x, ge, pronounce the 's as [ɪz]. Examples: ✓ A gauge**'s** pressure ✓ Reynolds**'s** experiments

Student A

Instructions
Your task is to fill in these empty boxes by asking your partner for the missing information. In turn, your partner will ask you questions about your six words. You should ask questions like the following:

What is the expression in C2?
What expression is in box A4?

	1	2	3	4
A	da Vinci's /z/ inventions		Reynolds's /z/ sketches	
B			Stoke's /s/ equation	Bernoulli's /z/ equation
C	Newton's /z/ rings	a scholar's /z/ view		

Useful language:

Can you repeat that?	How do you spell that?
What is the meaning of ___X___?	Is that pronounced with /s/ or /z/?

Follow-up: After you and your partner have finished filling in the missing information, compare your answers to see if you have understood each other correctly. Practice pronouncing any difficult words together.

Student B

Instructions
Your task is to fill in these empty boxes by asking your partner for the missing information. In turn, your partner will ask you questions about your six words. You should ask questions like the following:

What is the word in C2?
What word is in box A4?

	1	2	3	4
A		Chezy's /z/ formula		Mach's /s/ research
B	Pitot's /s/ experiment	Newton's /z/ laws		
C			Buckingham's /z/ theorem	a bullet's /s/ wave

Useful language:

Can you repeat that?	How do you spell that?
What is the meaning of ___X___?	Is that pronounced with /s/ or /z/?

Follow-up: After you and your partner have finished filling in the missing information, compare your answers to see if you have understood each other correctly. Practice pronouncing any difficult words together.

Material 10

Fluid Mechanics for Performing Work: HYDRAULIC PRESSES[10]

Though applications of Bernoulli's principle are among the most dramatic examples of fluid mechanics in operation, the everyday world is filled with instances of other ideas at work. Pascal's principle, for instance, can be seen in the operation of any number of machines that represent variations on the idea of a hydraulic press. Among these is the hydraulic jack used to raise a car off the floor of an auto mechanic's shop.

Beneath the floor of the shop is a chamber containing a quantity of fluid, and at either end of the chamber are two large cylinders side by side. Each cylinder holds a piston, and valves control flow between the two cylinders through the channel of fluid that connects them. In accordance with Pascal's principle, when one applies force by pressing down the piston in one cylinder (the input cylinder), this yields a uniform pressure that causes output in the second cylinder, pushing up a piston that raises the car.

Another example of a hydraulic press is the hydraulic ram, which can be found in machines ranging from bulldozers to the hydraulic lifts used by firefighters and utility workers to reach heights. In a hydraulic ram, however, the characteristics of the input and output cylinders are reversed from those of a car jack. For the car jack, the input cylinder is long and narrow, while the output cylinder is wide and short. This is because the purpose of a car jack is to raise a heavy object through a relatively short vertical range of movement—just high enough so that the mechanic can stand comfortably underneath the car.

In the hydraulic ram, the input or master cylinder is short and squat, while the output or slave cylinder is tall and narrow. This is because the hydraulic ram, in contrast to the car jack, carries a much lighter cargo (usually just one person) through a much greater vertical range—for instance, to the top of a tree or building.

PUMPS

A pump is a device made for moving fluid, and it does so by utilizing a pressure difference, causing the fluid to move from an area of higher pressure to one of lower pressure. Its operation is based on aspects both of Pascal's and Bernoulli's principles—though, of course, humans were using pumps thousands of years before either man was born.

A siphon hose used to draw gas from a car's fuel tank is a very simple pump. Sucking on one end of the hose creates an area of low pressure compared to the relatively high-pressure area of the gas tank. Eventually, the gasoline will come out of the low-pressure end of the hose.

The piston pump, slightly more complex, consists of a vertical cylinder alongwhich a piston rises and falls. Near the bottom of the cylinder are two valves, an inlet valve through which fluid flows into the cylinder, and an outlet valve through which fluid flows out. As the piston moves upward, the inlet valve opens and allows fluid to enter the cylinder. On the downstroke, the inlet valve closes while the outlet valve opens, and the pressure provided by the piston forces the fluid through the outlet valve.

One of the most obvious applications of the piston pump is in the engine of an automobile. In this case, of course, the fluid being pumped is gasoline, which pushes the pistons up and down

[10] Taken and adapted from: http://www.scienceclarified.com/everyday/Real-Life-Chemistry-Vol-3-Physics-Vol-1/Fluid-Mechanics-Real-life-applications.html

PUMPS FOR DRAWING USABLE WATER FROM THE GROUND ARE UNDOUBTEDLY THE OLDEST PUMPS KNOWN. *(Photograph by* Richard Cummins/Corbis. *Reproduced by permission.)*

by providing a series of controlled explosions created by the spark plug's ignition of the gas. In another variety of piston pump—the kind used to inflate a basketball or a bicycle tire—air is the fluid being pumped. Then there is a pump for water. Pumps for drawing usable water from the ground are undoubtedly the oldest known variety, but there are also pumps designed to remove water from areas where it is undesirable; for example, a bilge pump, for removing water from a boat, or the sump pump used to pump flood water out of a basement.

Material 11
Unit 1: Getting it right!
Reading Speed Record

Instructions: Write your name and your reading speed results in words per minute.

	Name	WPM
1.		
2.		
3.		
4.		
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Unit 1: Getting it right! **Lesson Plan #7**

Instructor: Jose Fabián Elizondo G. **Week 4 - Class 1**
Assistant: Sánchez & Pilgrim **08/28/2017**

Unit goal: By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General Objective: By the end of the class, students will be able to show understanding of a written and an oral text related to Newton's motion laws by building balloon-powered cars.

Specific Objectives: By the end of this lesson, Ss will:

1. define potential and kinetic energy by describing what happens to inflated balloons.
2. show understanding of an explanatory video about potential and kinetic energy used as a power source by answering true and false questions.
3. show understanding of written instructions to build balloon-powered cars by answering true and false questions.
4. design a balloon-powered car by following the recommendations given in a written and an oral text.
5. select the materials for building a balloon-powered car, sticking to a budget.
6. showing understanding of a troubleshooting guide by answering short questions.
7. build a balloon-powered car with materials Ss can find at home using their own designs.
8. test their balloon-powered car by detecting and correcting its flaws.
9. reflect on what made their cars successful or not in comparison to other groups by answering questions in groups.
10. describe the steps to make their balloon-powered cars using imperatives and sequence markers.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr tells Ss that today they will be practicing completing a task while using the strategies they have learnt in this month, which will be preparation for the "Academic Task" on Wednesday: their first evaluated task. Tr explains the sequence for the class today and on Wednesday. In groups, Ss are given an inflated balloon and there is a binder clip pressing the balloon's nozzle. On the board, one assistant writes: 1. What kind of energy is stored in the balloon? 2. What kind of energy is released if the binder clip is removed from the balloon's nozzle? (**remove the binder clip)** 3. Why does this happen? 4. Do you think this energy can power machines?	S L	**Vocabulary** balloon, nozzle, binder clip, potential energy, kinetic energy, thermal energy, friction. **Useful language:** ✓ The energy stored is X. ✓ If you remove the binder clip, the energy released is X. ✓ This happens because X. ✓ This energy can/can't power a machine because X.		10 min minutes Done by 5:10 pm.

	Ss are instructed to answer those questions, making use of the useful language written on the board.				
2	**Pre-task I** Tr tells Ss that the objective for today's class is that they will be designing and building their own balloon-powered cars. Tr says: "But before we get to the building part, to understand a little more of what you have to do, let's watch a short video. Please answer these questions based on the video." Assistants distribute **Handout 32**. Ss answer 6 true/false questions based on the video Balloon Car lesson plan, taken from: https://www.youtube.com/watch?v=jr3BOE_EpOk. Assistants write the Useful language on the board. Ss check answers in pairs, watch the video one more time, and then Tr elicits responses from Ss, and Tr asks them to justify the answers checked as false.	R L W S	**Vocabulary** pile, craft materials, zip along, inflate, attach the balloon to, straw, propel your car forward, go the farthest. **Useful language:** ✓ What do you have for #X? ✓ I think #X is true/false because X. ✓ What do you think about #X?	**Cognitive:** Identifying main ideas and supporting details	10 min Done by 5:20 pm

3	**Pre-task II** Ss are given **Handout 33**. Individually, Ss are to answer 6 true/false questions based on the guidelines for designing and building their cars. They are to show understanding of the text by using the strategies taught in previous lessons. They are given 5 minutes. Ss are to work in groups of 4 and share their answers. Tr elicits responses from Ss, and Tr asks them to justify the answers checked as false.	R W S L	**Vocabulary:** Propel, inflate, rubber, nozzle, wobble, wrapping, aim, deflate, skewer, bottle caps, tight, **Useful language:** ✓ What do you have for #X? ✓ I think #X is true/false because X. ✓ What do you think about #X?	**Cognitive:** Identifying main ideas and supporting details, dealing with difficult words, scanning	10 min Done by 5:30 pm
4 & 5	**Pre-task III** Ss are given **Handout 34**. Ss are to select the materials they will use to build their cars. Ss will be assigned a budget to "purchase materials." Trs will assign a price to each of the objects Ss can use, and Trs will keep track of each group's purchases.	S L R W	**Useful language:** ✓ We must buy X first. ✓ For the body/wheels/axles, we can use X. ✓ What else do we need? ✓ How much do we have so far?		15 min Done by 5:45 pm

	Ss are to design their cars by selecting the materials that fit their budget carefully. Their cars will need a body, wheels, and axles, and will be propelled forward by air escaping from a balloon.		✓ Are we sticking to our budget?		
6	**Pre-task IV** Ss are given **Handout 35**. In the same groups, Ss are to answer some questions related to how to troubleshoot some potential problems they may have while building or testing their cars. They have 5 minutes for reading and 5 minutes for discussing their answers. Ss are encouraged to share their answers in an open class discussion. Tr checks responses and understanding.	R W S L	**Vocabulary:** jerky, smooth, wobble, drift off, leak. **Useful language:** ✓ I didn't understand X part. Did you? ✓ What is the meaning of X? ✓ Should we use a dictionary? ✓ What did you write in #X?		15 min Done by 6:00 pm
7 & 8	**Main Task** Ss are to collect the materials they will need to build their cars and start building them. Once built, they are to test their cars to see if they want to make any improvements, using **Handout 36.**	R S L W	**Useful language:** ✓ First, we can measure/ cut/ or attach X to... ✓ Then, we can glue/ tape/wrap X.		25 min Done by 6:25 pm

	Ss are encouraged to go back to Handout 35 to solve any complications they might have. Ss will be told that the car that gets powered the farthest will win a prize. Finally, Ss race their final cars to see which one zips along the farthest.		✓ We need to fix X because the car is not X. ✓ The wheels wobble. What can we do? ✓ We can buy more X because X.		
9	**Post-task I** *Planning and Reporting* In the same groups, Ss are to answer these questions (written on the board): 1. How well did your design work compared to other groups? 2. What parts of your design worked well? 3. What parts of your design could you improve? In a circle, Ss share what they discussed in groups with the class. Ss are then asked to rate their performance today as a team from 1-10 (one being very poor, 10 being excellent).	R S L	**Useful language:** ✓ Our design did/didn't do well because X. ✓ Our X, Y, and Z worked well because X. ✓ I think we can improve our X because X.		5 min Done by 6:30 pm
10	**Post-task II** *Language focus*	S L	**Vocabulary:**		15 min

	In the same groups, Ss will be told to write a set of instructions to build the car they built, using imperatives and sequence markers. Ss then come to the board, show their model, and explain the steps to make it. Assistants write on the board: **For example,** **First, cut a water bottle.** **Then, attach a straw.**	W R	First, second, third, then, next, after that, finally.		Done by 6:45 pm

Unit 1: Getting it right!

Handout 32- Listening (main ideas + details)

Before designing your own balloon-powered car, watch the following video and answer these questions. Write an X under True or False, according to the information provided.

	True	False
6. You must buy new materials for making this project.		
7. The idea is that the car zips along using its own power.		
8. Kinetic energy is considered the energy of velocity.		
9. You need to attach a popsicle stick to the balloon to propel the car forward.		
10. The main idea of the video is to explain how the principle of kinetic energy can be used to power a toy.		
11. The main idea of the video is to explain how to insert a straw attached to a balloon to power a toy.		

Glossary:

zip along: move rapidly

propel: push or cause to move

Unit 1: Getting it right!
Handout 33-Reading (main ideas + details)

Balloon Car[11]

In this project, you will design and build balloon-powered cars. The cars are propelled forward by air escaping from a balloon, and can be built using a variety of different materials as shown in Figure 1.

Figure 1. Examples of two balloon-powered cars built with different materials.

Regardless of the materials used to build them, the basic operating principle of the cars is the same. When you inflate a balloon, it stores **potential energy** in the stretched rubber of the balloon and the compressed air inside it. When you release the balloon, air escapes out the nozzle, pushing the balloon forward (Figure 2). The stored potential energy is converted to **kinetic energy**, the energy of motion, as the balloon is propelled forward. According to **conservation of energy**, the amount of stored potential energy equals the resulting amount of kinetic energy. Eventually, the kinetic energy is converted to **thermal energy** (or heat) as friction slows the balloon down. The air escaping the balloon also demonstrates **Newton's third law of motion**: for every reaction there is an equal and opposite reaction.

Figure 2. Newton's third law of motion for an inflated balloon.

When you inflate a balloon and release it, it will tend to wobble and zoom randomly around the room. You can attach the neck of a balloon to a straw by wrapping a rubber band or tape around it several times, as shown in Figure 3. When you connect the straw to the body of a car, this allows you to aim the direction of the escaping air, so you can make sure it pushes the car forward. The car will initially **accelerate** as the balloon deflates, and eventually it will come to a stop as the balloon runs out of air and friction slows the car down.

[11] Taken and adapted from: https://www.sciencebuddies.org/teacher-resources/lesson-plans/balloon-car#teacherprep

Figure 3. Balloon attached to straw with rubber band.

Recommendations

1. **What materials could you use for the body of your car?**
   Examples include plastic bottles, cardboard boxes, or glued-together popsicle sticks.

2. **What materials could you use to build a wheel and axle?**
   One method includes threading a wooden skewer through a straw, and punching both ends of the skewer through plastic bottle caps (see Figure 1). You could do something similar with a pencil, piece of paper rolled into a tight tube, and CDs.

The goal is to see who can build a car that travels the farthest before coming to a stop. You will follow the engineering design process to design, build, and test your cars. This means you do not have to get your car "right" on the first try. You will be allowed to test and redesign your cars (as much as possible while time allows) before a final class competition.

3. Important: for sanitary reasons, **designate one student from each group to inflate their car's balloon, so you are not sharing straws.**

Comprehension Questions
Write an X under True or False, according to the information provided.

	Statements	True	False
12.	You can use external power sources for this project, such as batteries and solar panels.		
13.	Potential energy is what causes the car to stop moving forward.		
14.	There is only one way to attach the straw to the balloon.		
15.	Everybody can use different materials to build the body and the wheel and axle of their cars.		
16.	You must build a car perfectly the first time you try to build it.		
17.	There will be a competition to see whose car travels the fastest.		

Unit 1: Getting it right!
Handout 34- Design + Budget
Instructions:

A. In the space below, draw sketches of some ideas for your balloon car before you start building it. You must build one car per group only.
B. Choose the materials you will use keeping in mind your assigned budget. You cannot go over the limit of $100. The use of scissors and tape is unlimited.

List of items	Prices per unit	Number of items you are buying	Totals
water bottles	$20		
CDs	$5		
straws	$10		
pencils	$5		
balloons	$10		
skewers	$5		
bottle caps	$1		
popsicle sticks	$5		
cardboard boxes	$5		
paper clips	$2		
binder clips	$5		
			Your total:

Evaluation Rubric (to be used on Wednesday)

Element assessed	5	3	1	Tot. Pts.
For each of the following tasks, the group ...				
Materials selection	selected all of the necessary materials to build the rocket.	selected some of the necessary materials to build the rocket.	selected mostly unnecessary materials to build the rocket.	
Budget	uses $100 dollars or less.	uses more than $100 (up to $110 dollars)	uses more than $110.	
Total Points/Comments:				

Unit 1: Getting it right!
Handout 35- Troubleshooting

Troubleshooting[33]

You might encounter some problems when building you cars. Remember that overcoming these challenges is part of the engineering design process. However, here are some common problems and hints that can help you if you get stuck.

Car does not move at all

- Try inflating the balloon more. Pre-stretch the balloon by hand to make it easier to inflate.
- Make sure there is not too much friction on the axles. If you pick the car up, you should be able to spin the wheels freely.
- Try making the car lighter.

Car's motion is jerky and not smooth

- Make sure the wheels are centered on the axles. Off-center wheels will wobble as they roll.
- Make sure the wheels can rotate smoothly. Try spinning each wheel by hand. Is the wheel harder to spin at any point during the rotation? Is anything on the axle causing it to get stuck?

Car drifts off to one side

- Make sure the car's wheels are symmetric and aligned.
- Make sure the straw is centered on the car's body and pointed directly backwards.

Air leaks out of the balloon

- Wrap the rubber band or tape more tightly around the neck of the balloon to help seal any leaks.
- Make sure you pinch the tip of the straw firmly with your finger to prevent air from leaking out the end of the straw.
- Wait until you get to the testing area to inflate the balloon, and test the car very quickly before air has too much time to leak out.

Comprehension questions. Answer the following statements.

What can you do if...

1. you can't inflate your balloon?

   _____

2. the wheels don't turn?

   _____

3. your car moves backwards?

   _____

4. your balloon deflates before you test your car?

   _____

[33] Taken and adapted from: https://www.sciencebuddies.org/teacher-resources/lesson-plans/balloon-car#lesson

Unit 1: Getting it right!

Handout 36- Testing your car

Instructions: Follow these steps to test your balloon car. After testing, modify your car to try to improve it, and re-test. Record all test results in the data table.

Test your car

1. Important: for sanitary reasons, designate one person from your group to inflate the balloon. If that person gets tired, attach a new straw to your balloon.
2. Inflate the balloon by blowing through the straw.
3. Quickly press your finger over the tip of the straw.
4. Place the car on the floor and release your finger and watch the car until it comes to a stop.
5. Record how far the car traveled in the data table.
6. Note any problems with your car. For example, do the wheels wobble? Does it drift off to one side?

Test #1	Distance & observations
1	
2	
3	
4	
5	

Observation Sheet-Main Task (to be used on Wednesday)

Names: _____ _____ points/ 15 points

Element assessed	5	3	1	Tot. Pts.
For each of the following tasks, the group ...				
Use of English	uses English to communicate all the time.	uses English to communicate sometimes.	uses English to communicate rarely.	
Task	follows procedures as instructed all of the times.	follows procedures as instructed sometimes.	follows procedures as instructed rarely.	
Team work	allows all of its members to collaborate.	allows some of its members to collaborate.	allows very few of its members to collaborate.	
Total Points/Comments:				

Unit 1: Getting it right! **Lesson Plan #8**
Instructor: Jose Fabián Elizondo G. **Week 4 - Class 2**
Assistant: Sánchez & Pilgrim **08/30/2017**

Unit goal: By the end of this unit, the students will be able to use cognitive strategies and metacognitive strategies to improve their comprehension of both written and aural texts related to the fields of fluids and mechanical design.

General Objective: By the end of the class, students will be able to show understanding of a written and an oral text related to Newton's motion laws by building a two-stage balloon rocket.

Specific Objectives: By the end of this lesson, Ss will:

11. make predictions about the content of a video and a reading about Newton's motion laws and rocket launching by brainstorming concepts that may appear both in the video and the reading.
12. identify the functions of some parts of a rocket by matching pictures and definitions.
13. show understanding of an explanatory video on rocket launching by answering multiple choice questions.
14. show understanding of written instructions on how to build a two-stage balloon rocket by answering true and false questions.
15. select the materials to build a two-stage balloon rocket while sticking to a budget.
16. build a two-stage balloon rocket by following instructions from a manual.
17. detect the flaws in their two-stage balloon rockets by testing them.
18. self-assess their balloon rockets by answering reflection questions in groups.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1 & 2	**Warm-up** Ss are told that today they will have the first evaluated task, which will focus on listening and reading comprehension exercises. Ss are given **Handout 37**. They are to brainstorm predictions about the content of a video and a reading about Newton's motion laws and rocket launching. Ss share their ideas in pairs and while they do this, some Ss are encouraged to come to the board to write their predictions. Tr then goes over the concepts. In pairs, Ss then are given a bundle of 6 pieces of paper. They are to match the function of some parts of a rocket to their names. Tr elicits responses from Ss in an open class.	R W S L	**Vocabulary** action, reaction, friction, potential and kinetic energy, thermal energy, Newton, rocket, rocket parts, launch, space shuttle. **Useful language:** ✓ I think the video/text will be about X. ✓ What does a propulsion system/payload/nozzle do? ✓ I think a propulsion system's/payload's nozzle's function is to X. Right?	**Cognitive:** Predicting	15 min minutes Done by 5:15 pm.
3	**Pre-task I** Tr tells Ss that the objective for today's class is that they will build a two-stage balloon rocket as	R L W	**Vocabulary:** payload, orbit, depleted, thread, nozzle, released.	**Cognitive:**	15 min

	their academic task. But they need to complete some stages before, which will count for their final grade. Tr indicates that the first part of the evaluation will be listening comprehension. Video taken from: https://www.youtube.com/watch?v=XcdId35SMHY Assistants distribute **Handout 38**. Tr gives Ss time to read the questions silently. Individually, Ss are to answer 10 multiple choice questions. They will watch the video 2 times. Then, as a surprise Tr tells Ss to flip their Handouts. They are told they have 30 seconds to ask anybody in the classroom about something they didn't understand from the video. They can only talk to one person and go back to their seats. The idea behind this is to have Ss negotiate for meaning when watching videos. Tr plays the video one third time. Tr collects Handout 38. Assistants write useful language on the board.	S	**Useful language:** ✓ What do you think the video was about? ✓ I didn't understand the part about X. Did you? • Yes, I did. It was about X. • No, I didn't. Let's ask someone else.	Identifying main ideas and supporting details	Done by 5:30 pm

	In groups of 4, Ss share their answers from what they remember. Tr then projects Handout 38 and elicits correct responses.				
4	**Pre-task II** Ss are given **Handout 39**. They are to answer 10 true and false questions based on the reading "Building a two-stage balloon rocket." Individually, they will be given 1 minute to read the questions on page 3 and 5 minutes to read the entire reading. They are to answer as many questions as they can in those 5 minutes. Then, Ss are asked to sit in pairs and go over their answers. They will then be given 5 more minutes to read and some extra 10 minutes to finish the exercise. Ss can now write their two names in one sheet and they will be given the same grade. Assistants collect Handout 39, and Ss keep the reading. Tr then projects the questions and elicits responses from Ss.	R W S L	**Vocabulary:** tie, tightly, secure, loosen, bend, shut, clipped, straight, closely, evenly, sideways **Useful language:** ✓ What do you have for #X? ✓ I think #X is true/false because X. ✓ What do you think about #X? ✓ Should we change #X?	**Cognitive :** Identifying main ideas and supporting details, dealing with difficult words, scanning	20 min Done by 5:50 pm
5	**Pre-task III**	S	**Useful language:**		10 min

Ss are given **Handout 40**. In groups of 3, Ss are to select the materials they will use to build the balloon rocket. Ss will be assigned a budget to "purchase materials." Trs will assign a "price" to each of the objects Ss can use and Trs will keep track of each group's purchases. Ss are to build their rockets by carefully selecting the materials that fit their budget. Ss are to collect the materials they will need to build their rockets from a selection of materials the Trs have brought to class. To do so, Ss will show Handout 40 to Trs, and Trs will grade it immediately, using the rubric included, and keep it. Ss then take the materials they have requested.	L R W	✓ How many/much X do we need? ✓ We need one/two/three X. ✓ What else do we need? ✓ I think we're done!		Done by 6:00 pm
Main Task Ss are to build their rockets following the guidelines in the reading given for completing Handout 39. Once built, they are to test their rockets to see if they want to make any improvements, using **Handout 41**.		**Useful language:** ✓ First, we can measure/ cut/ or attach X to… ✓ Then, we can press/ tape/wrap X. ✓ We need to fix X because the rocket is not X.		30 min Done by 6:30 pm

	Ss are encouraged to go back to Handout 39 to solve any complications they might have. All Trs observe and evaluate how each group works by using the document "Rubric Main task," which Ss also have in Handout 41.		✓ We can more X because X.		
8	**Post-task I** *Planning and Reporting* Ss are given **Handout 42**. They are to self-assess their performance and answer some questions in groups. In a circle, Ss share what they discussed in groups with the class.		**Useful language:** ✓ Our rocket did/didn't do well because X. ✓ Our X, Y, and Z worked well because X. ✓ I think we can improve our X because X.		10 min Done by 6:40 pm

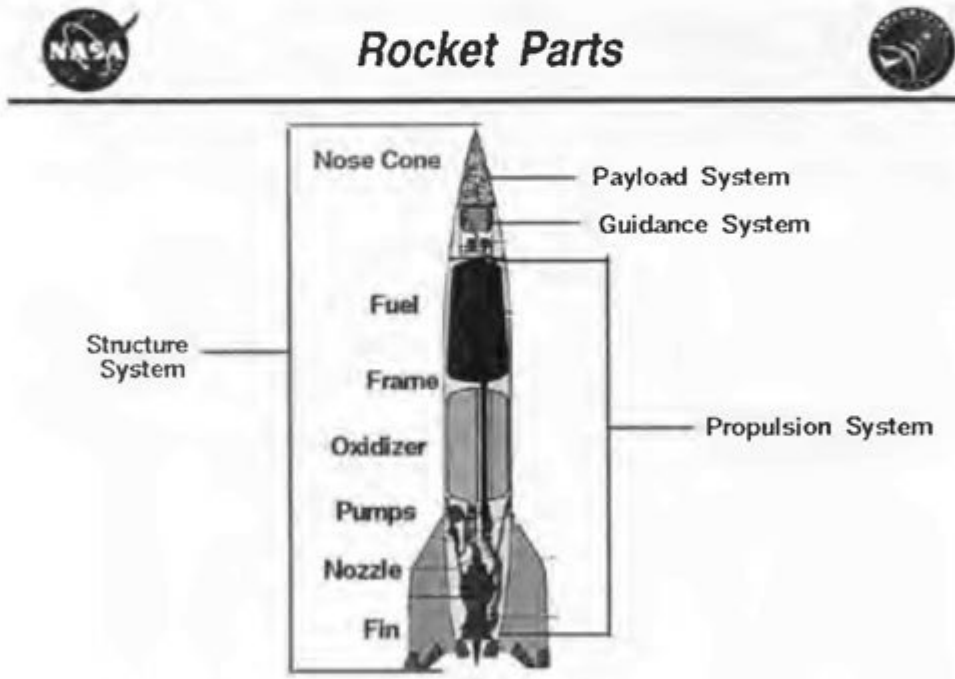
Unit 1: Getting it right!
Handout 37-Predicting

Strategy: Predicting. If a video/reading has the title "Newton's Motion Laws & Rockets," what do you think the video/reading will talk about?
Instructions: Write everything you think will be discussed in the video/reading.

Your predictions

Useful vocabulary[13]:

Unit 1:



[13] Image taken from: https://spaceflightsystems.grc.nasa.gov/education/rocket/Images/rockpart.gif

Unit 1: Getting it right!
Handout 38-Listening Comprehension
Name: _____ _____ points/ 10 points
Instructions: Individually, circle the option that best answers each question or statement.

1. What does the activity simulate? How real rockets use different stages to _____.
   a. be constructed
   b. push a payload into orbit
   c. show the principles of Newton's laws of motion

2. The first and the second stages are separated when _____.
   a. they reach an orbit together.
   b. the first stage continues travelling.
   c. fuel from the first stage is depleted.

3. For the activity, you need to use _____.
   a. round balloons
   b. modelling balloons
   c. any type of balloons

4. You must tie the fishing line to a heavy piece of furniture _____ threading the fishing line through the straws.
   a. after
   b. before
   c. right while

5. Why should you use a binder clip after inflating your balloon? To prevent it from _____.
   a. inflating
   b. bursting
   c. deflating

6. You must thread a second balloon _____ through the cardboard ring.
   a. partially
   b. carefully
   c. completely

7. The first balloon should be able to stay inflated after you remove the blinder clip if you _____ first.
   a. twist the second balloon's nozzle
   b. twist the first balloon's nozzle
   c. tape the first balloon's nozzle

8. If you tape both balloons together, they will not _____.
   a. deflate
   b. separate
   c. point in a straight line

9. Because of Newton's third law of motion, the balloons will move _____ when the air is released.
   a. forward
   b. backward
   c. in any direction

10. The second stage of this rocket _____ carry the dead weight of the first stage.
    a. should
    b. might need to
    c. doesn't need to

Unit 1: Getting it right!
Handout 39-Reading Comprehension

Building a two-stage balloon rocket[14]

a. Cut a piece of fishing line long enough to stretch across the room, with enough extra to tie it on both ends.
b. Thread the fishing line through two straws, pull it tightly across the room, then secure it at both ends (for example, tie it to two heavy pieces of furniture like desks).
c. Cut a small ring (slightly less than one inch long) from the paper towel tube.
d. Stretch the balloons to loosen them before inflating.
e. Inflate one balloon about 1/2 to 3/4 full. Do not inflate the balloon so much that it starts to bend significantly. Use a binder clip to pinch the balloon's nozzle shut so it doesn't deflate.
f. Pull just the balloon's nozzle through the cardboard ring, keeping it clipped shut.
g. Thread another balloon partially through the cardboard ring. Make sure its nozzle is facing the same direction as the first balloon. Note that the first balloon you inflated will be the second stage of your rocket, and vice versa.
h. This is the hard part; be patient! Inflate the second balloon such that it presses up against the inside of the cardboard ring, squeezing the nozzle of the other balloon shut. You should be able to remove the binder clip from the first balloon and have it stay inflated. This may take a few tries; if you have problems getting the first balloon to stay inflated, see the Troubleshooting section.
i. Use a binder clip to pinch the nozzle of the second balloon shut, and tape the balloons to the straws. Make sure the balloons and straws are pointed in a straight line.
j. Pull the balloons to one end of the fishing line. Remove the binder clip from the nozzle of the second stage (it should remain pinched shut by the cardboard tube. Then, remove the binder clip from the nozzle of the first stage, and closely watch what happens. The first stage should start to deflate, pushing the rocket forward. Eventually it will deflate enough that it stops pinching the nozzle of the second stage shut against the cardboard tube, so the second stage will start to deflate, and continue traveling along the string while leaving the first stage behind. It can be difficult to get this to work perfectly on the first try. If your students run into trouble, see the Troubleshooting section.

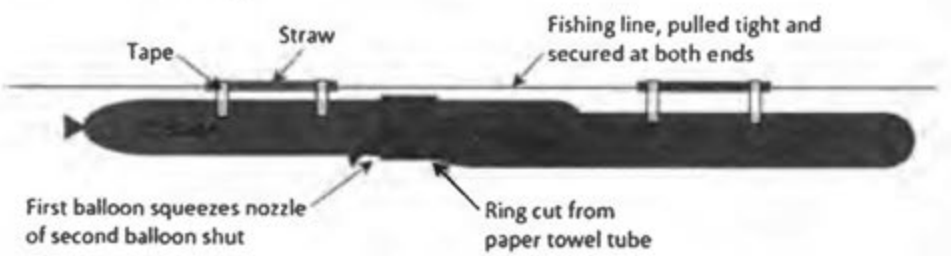


Figure 3. Two-stage balloon rocket setup.

Troubleshooting

It can be hard to get your rocket to work on the first try—don't get frustrated! If you have trouble getting the first balloon you inflate (the second stage of the rocket) to stay sealed, try keeping its nozzle pinched shut with a binder clip until right before you launch your rocket, or twisting the balloon a couple times to help seal the nozzle, as shown in Figure 4.

[14] Adapted from: https://www.sciencebuddies.org/teacher-resources/lesson-plans/two-stage-balloon-rocket#lesson

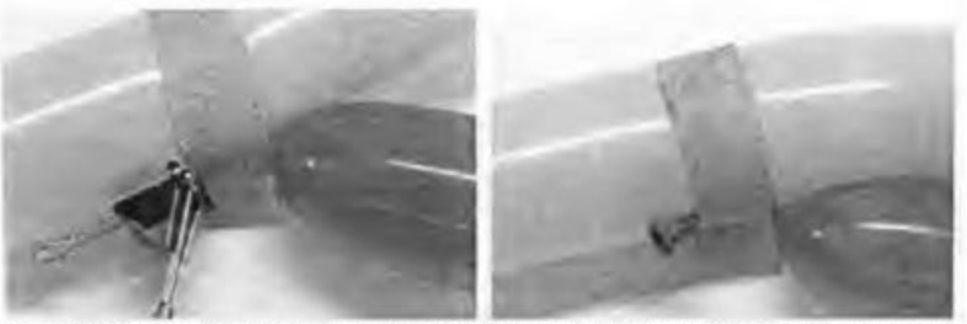


Figure 4. Keep the nozzle pinched shut with a binder clip (left) or twist the balloon a few times (right) if you have trouble with the second stage deflating early.

Do your best to make sure the balloons and straws remain in a straight line, as shown in Figure 5. If the balloons are curved or not aligned with each other, this will introduce extra friction along the fishing line and slow your rocket down. Stretching the balloons before you blow them up will help them inflate evenly instead of curving. Also make sure the balloons' nozzles are pointed along the fishing line, so the balloons are pushed forward when the air escapes. If the nozzles are pointed sideways, they will not push the balloons forward (remember Newton's third law!).

Figure 5. Balloons that are properly aligned (top) and misaligned (bottom).

Unit 1: Getting it right!
Handout 39-Reading Comprehension
Name: _____ _____ **points/ 10 points**

A. Write an X under True or False, according to the information provided. If a statement is false, the point will be given only if you justify your response.

	Statements	True	False
1.	When inflating the balloon, it can curve a little.		
2.	The second balloon's nozzle shouldn't face the same direction as the first balloon's nozzle.		
3.	The second balloon you inflate is the second stage of your rocket.		
4.	You should tape the balloons to the straws.		
5.	The first stage is the one that continues traveling along until the end.		
6.	Both balloons shouldn't deflate at the same time.		
7.	You can seal the balloons' nozzles by twisting them.		
8.	Figure 4 shows one way to seal the balloons' nozzle.		
9.	Friction can make your rocket slow down.		
10.	Figure 5 explains how to inflate the balloons.		

B. Justify the statements you checked as **False** only.

	Justifications
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Unit 1: Getting it right!
Handout 40-Budget
Names: _____ ____ points/ 10 points

Instructions:

A. In groups, choose the materials you will use, keeping in mind your assigned budget.
B. You cannot go over the limit of $100. The use of scissors and tape is unlimited.

List of items	Prices per unit	Number of items you are buying	Totals
round balloons	$20		
CDs	$5		
straws	$10		
pencils	$5		
modelling balloons	$20		
fishing line (per meter)	$1		
bottle caps	$1		
popsicle sticks	$5		
cardboard rings	$5		
paper clips	$2		
binder clips	$10		
			Your total:

Element assessed	5	3	1	Tot. Pts.
For each of the following tasks, the group ...				
Materials selection	selected all of the necessary materials to build the rocket.	selected some of the necessary materials to build the rocket.	selected mostly unnecessary materials to build the rocket.	
Budget	uses $100 dollars or less.	uses more than $100 (up to $110 dollars)	uses more than $110.	
Total Points/Comments:				

Unit 1: Getting it right!
Handout 41- Testing your rocket
Instructions: Follow these steps to test your rocket. After testing, modify your rocket to try to improve it, and re-test. Record all test results in the data table.

Test your rocket

7. Important: for sanitary reasons, designate one person from your group to inflate the balloon or use a balloon pump.
8. Be careful with how much you inflate the balloon. This may affect the final result.
9. Place the balloon on one side of the classroom and release the binder clip and watch the rocket until it comes to a stop.
10. Record how far the rocket traveled in the data table.
11. Note any problems with your rocket. For example, do the balloons deflate before you launch them? Do other groups' rockets seem to reach farther?

Test #1	Distance & observations
1	
2	
3	
4	
5	

Observation Sheet-Main Task
Names: _____ _____ **points/ 15 points**

_____

Unit 1: Getting it right!
Handout 42-Self-assessment
Names: _____ _____ **points/ 5 points**

Element assessed	5	3	1	Tot. Pts.
For each of the following tasks, the group ...				
Use of English	uses English to communicate all the time.	uses English to communicate sometimes.	uses English to communicate rarely.	
Task	follows procedures as instructed all of the times.	follows procedures as instructed sometimes.	follows procedures as instructed rarely.	
Team work	allows all of its members to collaborate.	allows some of its members to collaborate.	allows very few of its members to collaborate.	
Total Points/Comments:				

_____

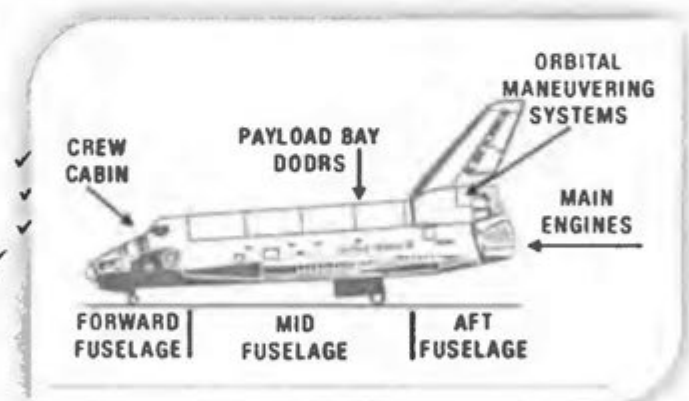
Instructions:
A. In the same groups, discuss the following questions:

4. How well did your rocket work compared to other groups?
5. What parts of your rocket worked well?
6. What parts of your rocket could you improve?

B. Please rate the following statements. Indicate your answer by placing an X in the appropriate column. This section will count as part of your evaluation today.

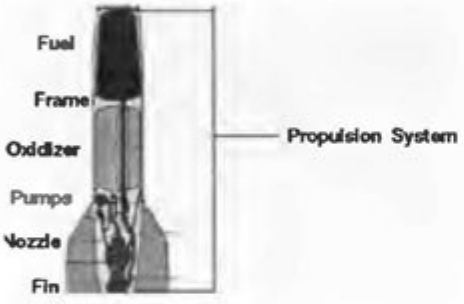
5-Excellent 4-Very Good 3- Average 2-Poor 1-Very Poor

	Your group's performance	1	2	3	4	5
(a)	The group used English to communicate all the time.					
(b)	The group followed procedures as instructed all of the times.					
(c)	The group allowed all of its members to collaborate.					



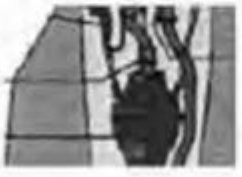
Material 12

This is where the crew of a space shuttle travels.



A system that contains fuel that can be depleted (used completely) to put a payload into orbit.

Nozzle



It regulates gas or liquid.

Unit 2 - Job, here I come!

Instructor: Yannick Pilgrim
Assistant: Sánchez & Elizondo

Lesson Plan #9
Week 5 - Class 1
04/09/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will write their own résumé by analyzing examples and reviewing international formal standards.

Specific Objectives: By the end of this lesson, Ss will:

1) show understanding of the concept of 21th century skills by classifying a list of skills as soft or hard.
2) show understanding of their own qualities/abilities by writing soft and hard skills needed to get a job in mechanical engineering.
3) define the parts of their own résumé after analyzing résumé samples.
4) identify adjectival and noun phrases from résumé samples to use in the construction of their own descriptions of qualities/abilities.
5) write the heading and summary of their own résumé by using model writing.
6) reflect on the résumé creation process by answering questions in groups.
7) mention reasons why creating an attractive résumé is important to get a job in mechanical engineering.

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will bring a rock and a cotton ball to class and place them on his desk. Tr will ask Ss which of the two is more appealing to them and why. In open class, Tr will use direct calling for 5 or 6 Ss to ask: *what do think are soft and hard skills? Why do you think they are important? Are they important for mechanical engineers?* After some answers, Tr will explain the concept of *21 century skills* adapted from http://edglossary.org/21st-century-skills/ by a brief explanation in class: "21st century skills refers to a set of "new" skills that address new market needs. Soft skills refer to emotional and interpersonal abilities while hard skills refer to technical, classroom-learned abilities." Then, Ss will make groups of 3 and be given a set of papers with skills written on them which they'll need to classify in hard and soft skills. Each	R S L	**Vocabulary** *Artistry, Leadership, literacy, entrepreneurialism, awareness, Environmental, wellness* **Useful Language** *What do you think X is?* *X looks like a X to me because X?*		15 min Done by 5:15pm

	Ss will be given a small glossary to help with possible difficult terms included on the skills description. After Ss classify the skills, each group will choose one soft and one hard skill and explain in open class why they classified them in a specific category.				
2	**Pre-task I** Ss will remain in groups of 3 and each group will be given a shooting silhouette. They will be instructed to imagine that they're looking for a job in mechanical engineering. Ss will be asked to discuss their best qualities/abilities to get the job using the 21 century skills. Then, they will write their qualities/abilities on the shooting target according to its importance towards getting the position desired. Ss will explain their silhouette in open class with a brief reasoning for their particular order.	W R S L	**Vocabulary** **Useful Language** *I think I am...* *I consider that I...* *For this job you need...* *I'm convinced that I am...* *People tell me that I am...*		10 min Done by 5:25pm

3	**Pre-task II** Tr tells Ss: "Now that you know what soft and hard skills are, you will use them in your own résumés, but first, we'll review the structure of a résumé." In pairs, Ss will be given an envelope with slips of paper that include possible résumé parts and their definitions. Each pair needs to negotiate and organize their own ideal résumé, post it on the board and briefly explain why they chose that specific order. In open class, the Trs will provide feedback by writing on the board a standardly accepted résumé order. Tr explains to Ss that a résumé is a very personal document and that everyone can choose to use a different résumé order. Ss then will fill out **Handout 41** with the standard and their desired résumé order.	S W R L	***Vocabulary*** *Heading, objective, education, experience, skills, activities and interests, references, summary, highlights.*	**Cognitive:** Negotiation	15 min Done by 5:40pm
4	**Pre-task III** Tr will draw Ss attention to the importance of choosing the correct	R W S	***Vocabulary*** *Team-player, self-starter, process*	**Cognitive** Scanning & negotiation.	10 min Done by 5:50pm

	words for a résumé and says: "Imagine that Intel's HR manager receives about 100 résumés a day. How can you get his/her attention? What sounds better to you? mechanical engineering student, or, goal oriented and culturally sensitive Mechanical Engineering student?" Ss will be introduced to the concept of adjectival phrases and noun phrases by an open class explanation and board examples. Tr says: "An adjectival phrase is a group of words that describes a noun or pronoun in a sentence. For example: internationally trained or goal-oriented. A noun phrase is a group of words that has a noun as the head. For example: internationally trained engineer or goal-oriented student. Both of them are mainly used in résumés to describe the applicant" Ss will be given **Handout 42.** They will find three stations in the class with several résumé samples. In pairs, students will be required to scan the different résumés in the different stations for adjectival and		*focused, creative entrepreneur summary, culturally sensitive* *Useful language* *Do you think I could be...?* *I like this description:...* *I think this description is (not) good for me because...* **Grammar** Adjectival & noun phrases		

	noun phrases. They will have 10 minutes to identify adjectival and noun phrases that relate to their reality and write them down in **Handout 42**. Trs will encourage Ss to use the useful language and monitor closely.				
5	**Main Task** Ss will work individually and write a draft for the heading and summary for their résumé in **Handout 43**. They will use information in **Handouts 41 & 42** as aids. Also, Tr will tell Ss: "Whenever you are not sure about how to start writing something, a good strategy is to check how other people have done it before and imitate it. This strategy is called modeling writing." Trs will closely monitor the Ss production and provide immediate feedback. Once they're done, Ss will work in pairs and share their headings and summary with their partners orally. Tr will instruct them to use the useful language on the board. Tr will model	R W L S	***Vocabulary*** *Performance driven engineer, detail oriented professional, results focused performer, solid team manager, technically skilled developer...* *Useful language* *I choose to use X because...* *I am good at X so I wrote...* *One of my strengths is...*	**Cognitive** Modeling writing	30 min Done by 6:20pm

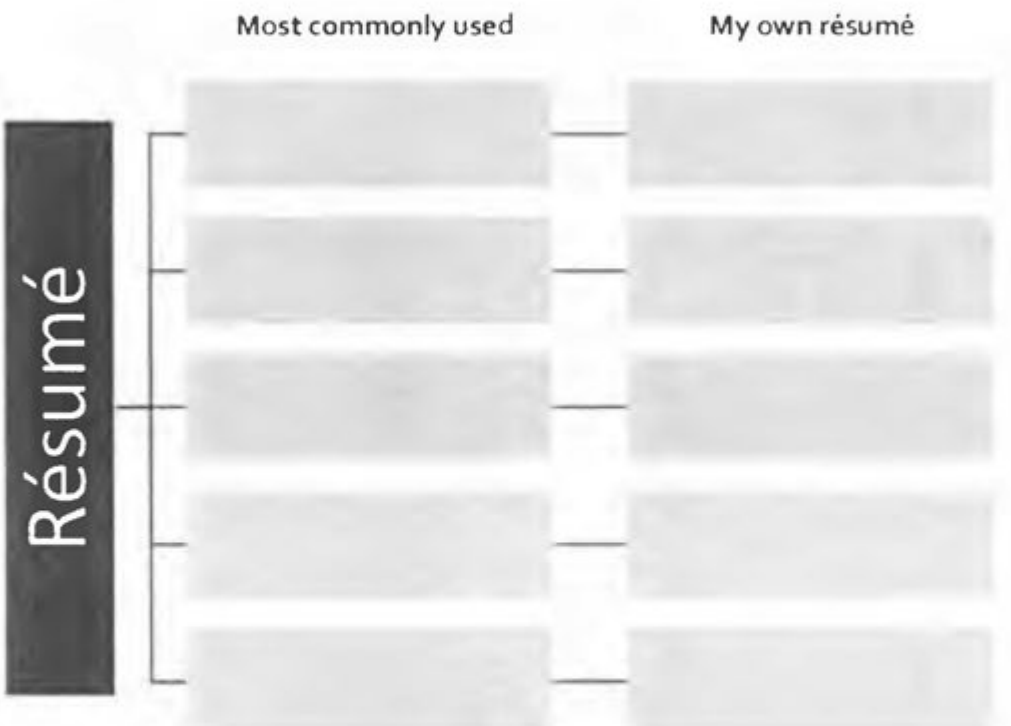
	the useful language with an assistant Tr.		*What do you think about this one?* *Would you write it in a different way?*		
6	**Post-task 1** *Planning and Reporting* Ss will work in groups of 3 discussing the following questions that assistant Trs will write on the board: -Why is designing a résumé important? -Which do you think are the most important parts of a résumé? -Is it difficult to describe yourself in a résumé summary? Why? Then Ss will report their findings in open class.	S L R	**Useful Language** *I think the most important part is X, because X.* *It's difficult/easy for me to describe myself in a summary because X.*	**Metacognotive** Monitoring learning	10 min Done by 6:30pm
7	**Post-task 2** Ss will work in pairs and they will be given **Handout 44**. Tr will ask some students to read the definitions and	R W S L	**Grammar** Adjectival & noun phrases **Useful language**		10 min Done by 6:40pm

	examples for adjectival and noun phrases. Then, Ss will work in pairs and be asked to create noun phrases with 4 adjectival phrases and to recognize adjectival and noun phrases in two résumé abstracts. This will review the concept introduced in Pre-task III. Also, in pairs Ss will briefly talk about the importance of using attractive adjectival and noun phrases in their résumé.		*I think attractive phrases are important in résumés because...*		

Unit 2 - Job, here I come!
Handout 41

Creating a résumé

- **Parts of a résumé** – According to the class discussion, complete the following chart with the most commonly used résumé parts and then the parts that you would like to use in your own résumé.



Monitoring your understanding

- ✓ I should create an attractive résumé because...

1)

2)

3)

Unit 2 - Job, here I come!
Handout 42

Creating a résumé

➢ Useful adjectival and noun phrases to use on a résumé –
Check the résumé samples on the different stations in class and write at least 10 adjectival and/or noun phrases that can be related to you.

1) *skilled designing engineer*	9)
2)	10)
3)	11)
4)	12)
5)	13)
6)	14)
7)	15)
8)	16)

An adjectival phrase is a group of words that describe a noun or pronoun in a sentence
Retrieved from http://dictionary.cambridge.org
e.g. **industrial control**

Expanding your understanding

✓ Can you think about other useful adjectival or noun phrases to use on your résumé?
*e.g. **Hard working** leader*

A noun phrase is a group of words that have a noun as the head
Retrieved from http://dictionary.cambridge.org
e.g. **industrial control systems**

Unit 2 - Job, here I come!
Handout 43

Creating a résumé

- Write a draft of a **heading** for your own résumé

Make sure all the information is accurate. The heading should be at the beginning of your résumé You should include information such as **address, phone number(s), email address** and **portfolio** or **webpage** link, in case you have one.

- Write a draft of a **summary** for your own résumé.
  Using modeling writing, utilize any of the samples below as a model to write a draft of your résumé summary.

MITCH ROZEN

SUMMARY

Ambitious, results-driven, detailed oriented Mechanical Engineer with a background in design, manufacturing and sales. Dedicated to providing innovative solutions to fulfill customer needs. Enthusiastic to learn new technologies. Proven experience to communicate technical concepts to both non-technical personnel and clients.

Unit 2 - Job, here I come!
Handout 44 - Language Focus

Adjectival and noun phrases

An ***adjectival phrase*** is a word or group of words that functions as an adjective in a sentence. They are commonly used to describe a noun.

For example: *internationally trained*
goal-oriented

A **noun phrase** is a group of words that has a noun as the head. They are used to mention people or things

For example:
troubleshooting production equipment
grain transfer systems

Adapted from http://awelu.srv.lu.se/grammar-and-words/selective-mini-grammar/

➢ Use any of the adjectival phrases in the box to create more attractive noun phrases. Compare your answers with your partner. Are they the same?

goal oriented	ambitious and empathetic
highly motivated	culturally sensitive

1)_____ student
2)_____ professional
3)_____ engineer
4)_____ team player

➢ Circle adjectival and/or noun phrases in the following résumé abstracts and compare your answers with your partner.

Forward thinking Mechanical Engineer with over seven years' experience in product design and development, project management, and quality assurance. Skilled in machining, adhesive bonding, brazing, soldering, and welding with a strong understanding of engineering mechanics, principles, and materials. Demonstrated leadership skills that optimize collaboration between departments to produce high-quality industrial machines and equipment.

Resourceful and reliable Mechanical Engineer with extraordinary troubleshooting and problem-solving abilities. Strong record in completing installation and repair projects by customer deadlines and within budget. Excellent manager of large and small engineering teams with high degree of

➢ Attractive adjectival and noun phrases are important in a mechanical engineering résumé because...

1)

2)

3)

Material 13

Unit 2 - Job, here I come!

Warm up – Distribute this set of slips to each group and instruct them to classify them as hard and soft skills.

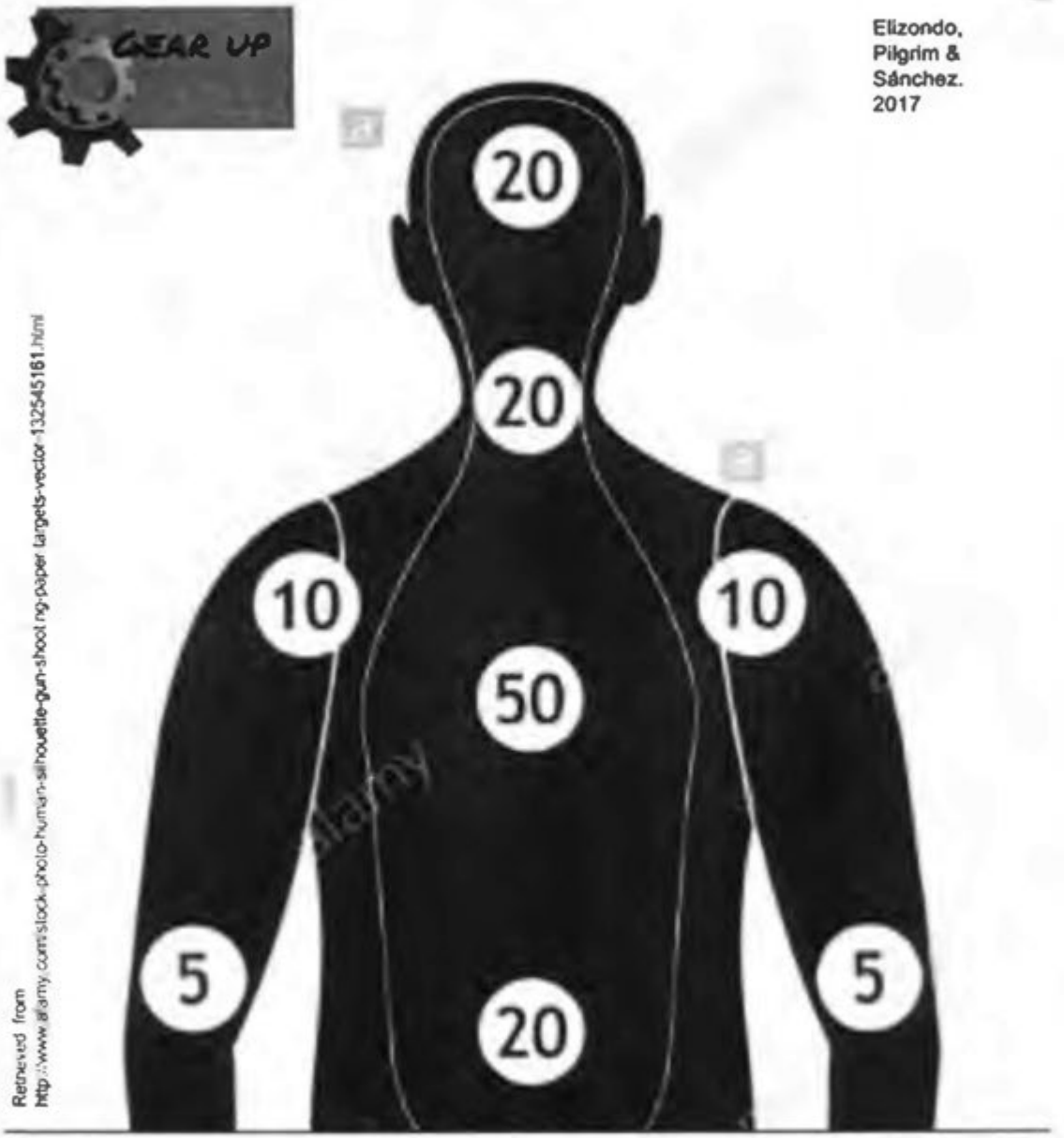
1. Critical thinking, problem solving, reasoning, analysis, interpretation, synthesizing information
2. Research skills and practices, interrogative questioning
3. Creativity, artistry, curiosity, imagination, innovation, personal expression
4. Perseverance, self-direction, planning, self-discipline, adaptability, initiative
5. Oral and written communication, public speaking and presenting, listening
6. Leadership, teamwork, collaboration, cooperation, facility in using virtual workspaces
7. Information and communication technology (ICT) literacy, media and Internet literacy, data interpretation and analysis, computer programming
8. Civic, ethical, and social-justice literacy
9. Economic and financial literacy, entrepreneurialism
10. Global awareness, multicultural literacy, humanitarianism
11. Environmental and conservation literacy, ecosystems understanding
12. Scientific literacy and reasoning, the scientific method
13. Health and wellness literacy, including nutrition, diet, exercise, and public health and safety

Material 14
Unit 2 - Job, here I come!
Pre-task II – Distribute this set of slips to each group and instruct them to structure their own résumé with them. Not all the parts need to be used.

HEADING	***ACTIVITIES AND INTERESTS***	***HIGHLIGHTS***
EXPERIENCE	***OBJECTIVE***	***SUMMARY***
SKILLS	***REFERENCES***	***EDUCATION***

Personal information. Includes name, addresses, e-mail address, and phone number.	*Optional. List of student organizations, professional associations, committees, and community involvement, high school activities only if directly relevant to your field. List interests such as music, sports, and arts if they pertain to your career interest.*	*Optional. Any extra information that you consider important for your future employers.*
Includes diverse working experiences, both paid and unpaid: Part-time work, Full-time work, Internships, Volunteering.	*Optional. Describes your immediate employment goal: position you are seeking, training and, sometimes, salary expectations.*	*List of key achievements, skills and experience related to the position for which you are applying.*
List of computer languages and programs, knowledge of foreign languages, laboratory and research skills, analytical and management skills and hard and soft skills not mentioned elsewhere.	*Optional. People who can provide positive information about you. If included, you may write "available upon request."*	*List of academic institutions attended, including study abroad experience. Include, locations, degrees and dates.*

Material 15



Elizondo, Pilgrim & Sánchez. 2017

Retrieved from http://www.alamy.com/stock-photo-human-silhouette-gun-shoot ng-paper targets-vector-132545161.html

Unit 2 - Job, here I come!

Instructor: Yannick Pilgrim
Assistant: Sánchez & Elizondo

Lesson Plan #10
Week 5 - Class 2
06/09/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will write their own résumé after analyzing examples and reviewing international formal standards.

Specific Objectives: By the end of this lesson, Ss will:

1) Show understanding of the descriptive phrases studied in the previous class by completing fill the blanks exercise.
2) Properly pronounce some action verbs and utilize them in sentences.
3) Show understanding of action verbs by using them properly in their own résumé drafts.
4) Clearly identify the different components of three parts of a resume: professional experience, education, & technical skills by observing a mechanical engineering résumé sample.
5) Create a draft of their own résumé by including key information for each section.
6) Enumerate any difficulty they had while creating the résumé draft.
7) Show understanding of the national and international market demands for mechanical engineers by analyzing a piece of news.

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr reviews the goal for the class and reminds Ss that they will continue writing their résumé today. Ss will be paired up by the teacher and be given **Handout 45.** Ss will be asked to complete a short fill in the blanks exercise in order to confirm their understanding of previous class descriptive phrases. Tr asks Ss to share their answers with their partner and check if they are the same. Tr tells Ss to take a look at the adjectives at the bottom of **Handout 45**. Tr tells Ss to	R S L W	**Vocabulary** **Useful language** For #X I chose... What did you choose for #X? Why did you choose X for #X?		10 min Done by 5:10pm

	discuss which ones they would use to talk about themselves. Once Ss are done, Tr will remind them that they had already used nouns and adjectives in their initial résumé drafts: "What else do you think is essential for an attractive resume?" Finally, the Tr will say: "Today we will focus on verbs that can make your résumé more attractive."				
2	**Pre-task I** Tr will display in the board a list of action verbs and its corresponding pictures. Tr will clarify the meaning of each verb using the pictures and practice some drills with Ss to clarify pronunciation.		**Vocabulary** Analyzed Applied prepared Attended Calculated Constructed	**Cognitive** Modeling writing	15 min Done by 5:25 pm

	Then, Ss will be ask to look underneath their desks. They will find a verb in each desk. Tr then will display some sentence examples in the board using the actions verbs previously studied. In pairs, students will use modeling writing using the examples in the board, the verbs from their desks and their personal experiences or situations. Assistant Trs will monitor closely and provide immediate feedback.		Developed Functioned Institutionalized Researched implemented Standardized **Useful language** What verb did you get? I think we could use… I would prefer to use… I don't think you should use…		
3	**Pre-task 2** Ss will work with a different classmate and be given Handout 46. Tr will ask Ss to identify and underline the	R W S L	***Vocabulary*** *Worked* *Designing* *Conducted*	**Cognitive:** Modeling writing	15 min Done by 5:40 pm

	verbs that they think can help them to describe present or past activities in the résumé abstracts. Then Ss are asked to use the verbs that they underlined to created sentences with their own experience that they could use in their own résumé. Assistant Trs will monitor closely. Ss will share their sentences with their partners and the Tr will check 2 or 3 in the board to correct grammar if necessary.		*Documented* *Identifying* *Reporting* *Created* *Constructed* **Grammar** -ed -ing ending for action verbs		
4	**Pre-task 3** Tr will tell students "Now we have more elements to describe ourselves and talk about what we do or did. Before we keep on writing our résumé, it is important to know	S R W L	*Useful language* *What components does* professional experience/ education/ technical skills has/have?		10 min Done by 5:50 pm

	what information to include in each part." Ss will work in pairs. Each pair will be given a resume sample in **Handout 47** and they will have to identify what components, meaning specific information, should be included on three specific parts of a résumé: professional experience, education, & technical skills.		*For* professional experience/ education/ technical skills they mention/ always include...		
5	**Main Task** Ss will work in pairs. They will be given **Handout 48**. Tr will ask Ss to take out Handouts from the previous class and use the ones for today's class to complete the different sections of a résumé draft. Tr will remind Ss that it is important to ask for their classmates' opinion while they	R W S L	*Useful language* *What do you think about this...?* *Can you help me with this section?* *Can you read this and tell me what do you think?* *What optional are you going to use?*	**Cognitive:** Modeling writing	30 min Done by 6:20 pm

	write using the useful language. Once they've completed the task, use numbering to divide the class in two groups. All the résumé drafts will be posted on two opposite walls and one team will read and check the other team's drafts. Ss will be encouraged to do any comments, corrections or suggestions to the résumé drafts. Trs may also write some corrections or comments. Once Ss are finished each Ss will pick up his/her own draft and read their classmates & Trs comments. Tr will a few minutes for specific feedback questions.				
6	**Post-task 1** *Planning*	S L	*Useful language*		10 min Done by 6:30 pm

	Tr will ask Ss to sit in a circle. Tr will ask some open questions: *-How do you feel now after finishing your résumé draft?* *-What it a difficult/easy task for you?* Then Tr will make the following question using direct nomination: - *What do you think is the most difficult task when creating a résumé?*		*For me, the most difficult task was...* *I think creating a résumé was easy/difficult because...*		
7	**Post-task 2** Ss will work in pairs and be given Handout 49. Tr will explain that national and international reality is important when you are looking for a job. Tr will ask Ss to read an adapted piece of	R S L		**Social** Cultural awareness	15 min Done by 6:45 pm

	news from ticotimes.net and discuss with their partner two questions related to the work market for mechanical engineering in Costa Rica.				

Unit 2 - Job, here I come!
Handout 45

- According to what was reviewed last class, use any of the descriptive phrases in the box to enhance your résumé summary. Compare your answers with your partner. Are they the same? Could you use any of these phrases in your own résumé?

goal oriented	ambitious and empathetic
highly motivated	culturally sensitive

1)_____ _____student
2)_____ _____professional
3)_____ _____engineer
4)_____ _____team player

- Take a look at the list of adjectives below. Which ones would you use to talk about yourself?

Useful Adjectives			
Innovative	Capable	Focused	Attentive
Efficient	Meticulous	Complex	Proficient
Proactive	Organized	Disciplined	Productive

Unit 2 - Job, here I come!
Handout 46

Creating a résumé

A. Underline verbs that can help to describe what you do now or what you did in the past in the following résumé abstracts.

-Worked as a mechanical engineering internee in operations and maintenance department.
-Designing in AutoCAD, ProE and SolidWorks.

-Identifying subsystems in mechanical systems to define test packages.
-Reporting and managing of mechanical projects.

-Conducted an array of long-term product development studies, experiments and qualification testing.
-Documented detailed process, product and sample observations, noting anomalies.

-Created and designed a test box that resulted in a better adjustment of seals during testing.
-Constructed blade designs for stack dampers significantly improving flow characteristics.

B. Using the verbs in the examples above, create three descriptions of your work of study that you could use in your own résumé.
e.g. *Participated in TEC's entrepreneurship program.*

1)

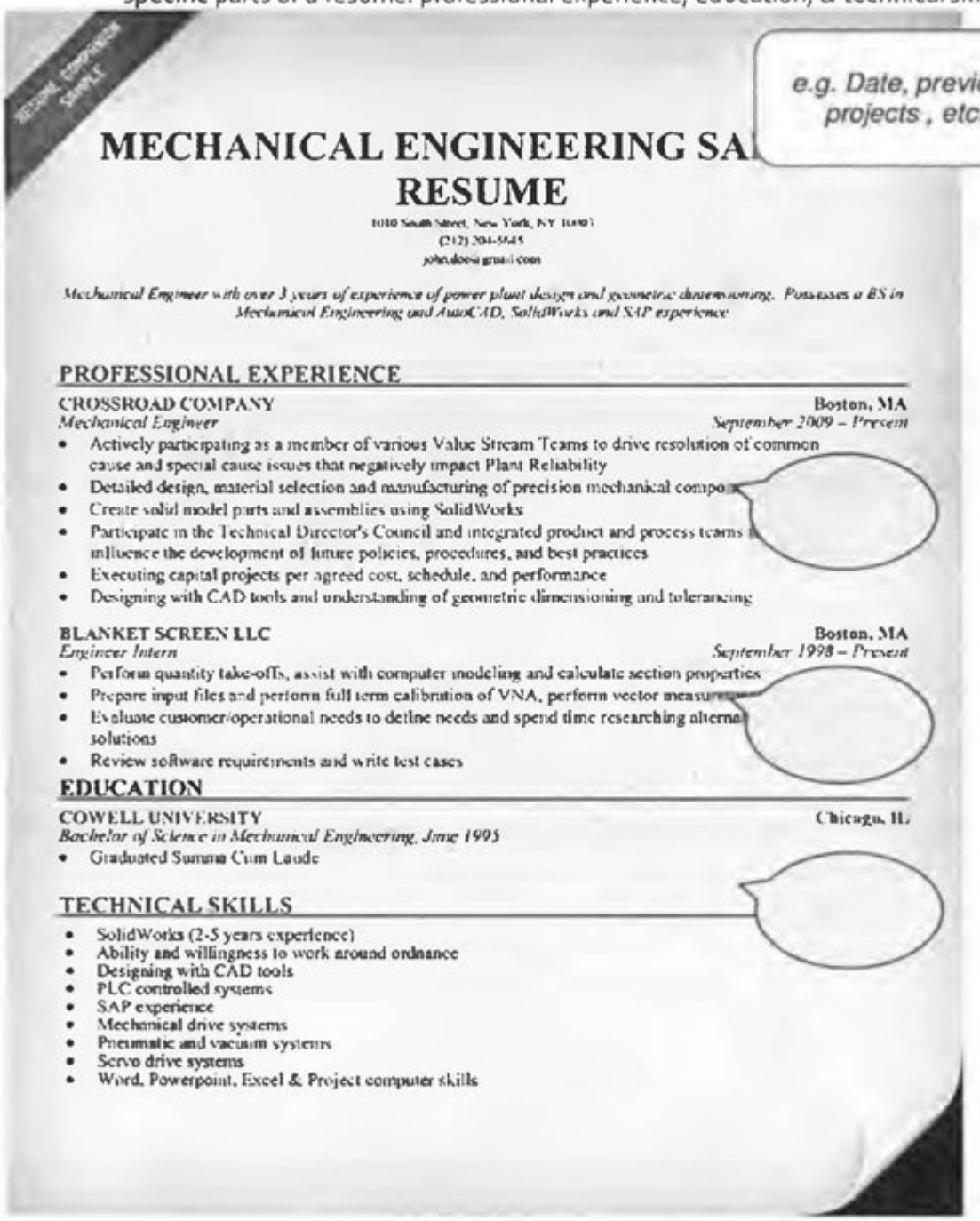
2)

3)

Unit 2 - Job, here I come!

Handout 47 **Creating a résumé**

- Identify and write in the bubbles what components should be included in **three specific** parts of a résumé: professional experience, education, & technical skills.



Unit 2 - Job, here I come!
Handout 48

Creating a résumé

- Write a draft for your own résumé by adding your personal information to each section. Please use information in previous handouts.

Heading	
Summary	
Experience	
Education	
Technical skills	
Optional	

Unit 2 - Job, here I come!
Handout 49

➢ Read the following piece of news from national press and discuss with your partner the questions below.

Recruiting companies offer jobs for bilingual professionals

L. ARIAS / FEBRUARY 10, 2016

Two consulting companies this week announced they are on the lookout for bilingual professionals in several areas.

Manpower Central America began an expansion process with 60 vacancies for immediate Costa Rica jobs in financial and accounting areas.

Candidates should submit résumés in English to the address below or bring a print version to Manpower offices in Plaza Mayor, Pavas, west of San José. before Feb. 24.

Applicants must be 100 percent bilingual (English-Spanish) and with a proven experience in process improvement, operations and logistics, or finance. Recruiters also will prioritize candidates with experience in multinational companies, shared services centers, or large domestic companies.

Adapted from http://www.ticotimes.net/2016/02/10/costa-rica-jobs-recruiting-companies-seeking-bilingual-professionals

➢ After reading Arias' article, discuss the following questions with your partner:

- What characteristics do you think potential employers look for in mechanical engineers?
- Which are the most desirable characteristics for mechanical engineers in the Costa Rican market?

Unit 2 - Job, here I come!

Instructor: Andrea Sánchez V.
Assistant: Pilgrim & Elizondo

Lesson Plan #11
Week 6 - Class 1
11/09/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will be capable of advocating for a specific proposal related to a hypothetical work problem.

Specific Objectives: By the end of this lesson, Ss will:

1) Show understanding of the national and international market demands for mechanical engineers by analyzing a news article.
2) Effectively apply the strategy of thinking aloud while preparation for a job interview.
3) Write a script for an original proposal by using the SAFER method.
4) Orally explain a possible solution for a problem to a classmate by following a script.
5) Effectively describe a proposal for a real life mechanical problem.
6) Correctly identify the intention of the modals *could*, *would* and *should* by completing an email.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will review the goal for the class and then tell Ss: "Last week you completed your résumé draft. Now, it's time to **talk** about what you wrote in your résumé and to tell your potential employers what you can do. Before doing that, let's take a look at what employers are looking for." Ss are given **Handout 49,** which includes a piece of national news related to the importance of English as a second language when looking for a job in Costa Rica. Ss will work in pairs and once they have read the adapted news, they will discuss two questions that will make them review concepts learned in the previous class.	R L S	**Useful language** I think employers in Costa Rica look for... A desirable characteristic for a mechanical engineer is... because...		10 min Done by 5:10pm

2	**Pre-task 1** Tr will ask some open questions to the class: -What do you do when you have a problem? -What do you do when you don't have the answer? -Do you always have someone to ask in case you have a question? After a few answers, Tr will say: "Now, we will have a short competition and we will review some academic concepts that you have probably studied in your mechanical engineering classes. Before doing that, please take a look at some words that you may be new to you" Tr will go over the glossary on the board and practice pronunciation. Tr will ask Ss to make groups of 3 and solve some easy academic questions with the application Kahoot.it (https://play.kahoot.it/#/k/414f0c56-4198-4c8f-9361-07e890fd826b) Ss	R S L	**Vocabulary** *Glossary on the board:* ***Path**:* small road, way or track ***Rebound:*** bounces back after hitting a hard surface ***Smooth**: with* an even and regular surface	**Metacognitive** -Think aloud -Monitor your learning	15 min Done by 5:25pm

	will have only 30 seconds to answer each question. Once done, the winners will receive a prize, and Tr will say: "In a future job interview, it is important to know the concepts, but is it even more important to be able to explain them." Tr will briefly explain the strategy of thinking aloud as preparation for a job interview: "For example, try to predict questions that you may have in a job interview, like 'Tell me a little bit about yourself' then in front of the mirror at home you can say something like this aloud: (Assistant teacher will imaginarily be in front of a mirror and say something about himself)" Ss will be given **Handout 50** and discuss a mechanical engineering problem while thinking aloud.				
3	**Pre-task 2** Tr will explain that there are several techniques to get prepared for a job	W R S	**Useful language** I think the problem starts...	**Cognitive** Creating a script	15 min Done by 5:40pm

	interview. Another one of them is writing a script. On the board, Tr will explain the SAFER method, adapted from BYU Mechanical Engineering Department online. Tr will use and adapted version of SAFER on the board to explain Ss the 5 steps that the method includes. Then, Ss will be given **Handout 51** and work on a script using the SAFER method in pairs. For the objectives of the class, Ss will only be required to complete the first three steps of the SAFER method.	L	A good way to solve the problem is... To solve this, we could use/ we will need...		
4	**Pre-task 3** Tr will tell Ss that another strategy to get ready for an interview is to ask another person related to the field of mechanical engineering to give us feedback on ideas and proposals. Ss will switch pairs and ask the new partner for some feedback on their scripts. Ss will practice their script orally and will use **Handout 51** to	S L R W	**Useful language** *Do you mind helping me with this problem?* *Do you think the summary/* approach/ framework is clear?		15 min Done by 6:05pm

	collect any feedback from their classmates. Assistant teachers will monitor closely and provide immediate feedback.		*What do you think about my proposal?*		
5	**Main Task** Ss will work in pairs. They will receive **Handout 52.** Tr will call Ss attention to the fact that the 1st pre-task was done in groups of 3 to emulate work environment. Pre-task 2 was done in pairs as sometimes we are asked to work with a partner and now, each one will be in charge of defending their own proposal. Tr will tell students that they will do a role play about a job interview which will be focused on one problem solving question. Ss must follow the roles given for each situation. The *applicant* can take 1 or 2 minutes to use the SAFER method before giving the answer to the recruiter. Ss will be given 15 minutes to work with	R L S	**Useful language** *In this case, we could...* *With the information given I would suggest to...* *For this particular case I believe you should...*		30 min Done by 6:35pm

	Situation 1 and another 15 minutes to work on Situation 2. Assistant teachers will follow up closely and give immediate feedback.				
6	**Post-task 1** Ss will be given **Handout 53** and work individually. Tr will explain briefly that modals are a particular group of verbs in English which help to set the function of the verb that follows them. In this case, Ss will review the use of could, would, should for suggestions, possibility or advise. Tr will review the modal's pronunciation with some open class drills. Tr will ask Ss to complete the email included in the Handout using the mentioned modals. Then, Ss will practice reading the emails aloud with a partner.	R W S L	***Useful language*** *I should...* *I could...* *I would...* ***Grammar*** *Modals: could, would, should.*		10 min Done by 6:45pm

Unit 2 - Job, here I come!
Handout 50

- In groups, discuss how you would solve the following problem. Make sure to think aloud.

You are at a job interview at Neo Nieto. You will be in charge of overseeing the production of air conditioning systems. However, they need to know how much you know about refrigerant gases. Please, briefly explain how these gases work and how you will oversee the manufacturing of air conditioning systems.

Monitor your learning

- ✓ Was it difficult for you to think aloud? Why?
- ✓ Do you consider that thinking aloud could help you with the preparation for a job interview? Why?

Unit 2 - Job, here I come!
Handout 51

Example using the SAFER method for a script

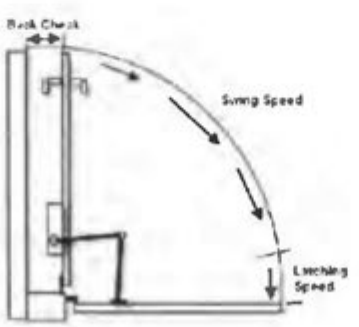
The US/Argentina solar observatory are launching the Cosmic Unresolved Background Instrument (CUBIC). CUBIC is sealed during launch then has to open its 'door' to operate. This door only has to open once. If it opens, CUBIC is a success; if it doesn't open, CUBIC fails. There are 3 methods for opening doors in space: motor, spring, and explosive bolts.
Motors: medium reliability; failure = CUBIC full or partial failure
Spring: medium reliability; failure = CUBIC full failure
Explosive bolts: very reliable; failure = damages entire CUBIC platform.
What would be your proposal and why?

Script

Summary CUBIC is a rocket that needs to open its door once in the space to operate. There are 3 options for door opening: motor, springs or explosives. I would suggest to use springs for this project.

Approach and assumptions I think springs will work better because they are easier to control with mechanic instruments even from earth by remote control. The strength is their reliability and a weakness can be that there is no plan B to cover them.

Framework



$$\frac{dF}{dt} = k(v_2 - v_1) \qquad Y(s) = \frac{k}{s}$$

spring

Unit 2 - Job, here I come!
Handout 51

- In pairs, create a script for a possible solution for the following problem using the SAFER method.

A private aqueduct in Guanacaste has been receiving an increasing amount of claims from their clients about the very poor pressure of water that they receive in their homes. They are in the process of hiring a mechanical engineer in order to address this situation. The question in the job interview is: what would be your proposal to fix the water pressure?

Script

Summary

Approach and assumptions

Framework

Unit 2 - Job, here I come!
Handout 52

➢ In pairs, role play de following situations. You have 10 minutes to work on each situation. As the *applicant* you may take 1 or 2 minutes to draft a SAFER method for your answer.

Student A

- **Situation 1**

You are a recruiter for Bioland S.A. who is looking for a mechanical engineering for your company.

Ask him/her some of these questions to start the interview:

1. Tell me a little about yourself.
2. Tell me about your educational background.
3. Do you have any work experience?
4. Then, present the applicant this situation:

> Our company, Bioland S.A., is running a social responsibility project in one of the indigenous reserves in Alta Talamanca. The project attempts to provide electricity for 17 houses which are located in an area of approximately 5000 Km^2. The access to the area is difficult. Bioland is deciding about using wind turbines or solar panels. What would be your recommendation and why?

- **Situation 2**

You are an engineer entry level applicant and submitted your résumé at a job fair. You were called in for an interview. The company is AgroSolutions S.A which specializes in farming improvement.

The recruiter asks some personal information questions and then he/she asks you to solve this problem:

> Costa Rican government has hired AgroSolutions S.A. to implement a water irrigation solution for a group of farmers in Tierra Blanca de Cartago. Water is precious and scarce resource in this area. There is a water spring about 12 kilometers north of Tierra Blanca that the Municipality is offering to use. How would you suggest to transport the water from the spring to Tierra Blanca?

Unit 2 - Job, here I come!
Handout 52

➢ In pairs, role play de following situations. You have 10 minutes to work on each situation. As the *applicant* you may take 1 or 2 minutes to draft a SAFER method for your answer.

Student B

- **Situation 1**

You just graduated from the University. You applied for an Engineer entry-level position at Bioland S.A. and they called you for an interview.

The recruiter asks some personal information questions and then he/she asks you to solve this problem:

> Our company, Bioland S.A., is running a social responsibility project in one of the indigenous reserves in Alta Talamanca. The project attempts to provide electricity for 17 houses which are located in an area of approximately 5000 Km². The access to the area is difficult. Bioland is deliberating about using wind turbines or solar panels. What would be your recommendation and why?

- **Situation 2**

You are a recruiter for AgroSolutions S.A. who is looking for a mechanical engineer for your company.

Ask him/her some of these questions to start the interview:
Tell me a little about yourself / Tell me about your academic education / Do you have any working experience?

Then, present this situation to the applicant:

> Costa Rican government has hired AgroSolutions S.A. to implement a water irrigation solution for a group of farmers in Tierra Blanca de Cartago. Water is precious and scarce resource in this area. There is a water spring about 12 kilometers north of Tierra Blanca that the Municipality is offering to use. How would you suggest to transport the water from the spring to Tierra Blanca?

Unit 2 - Job, here I come!
Handout 53

Language Focus: Modals

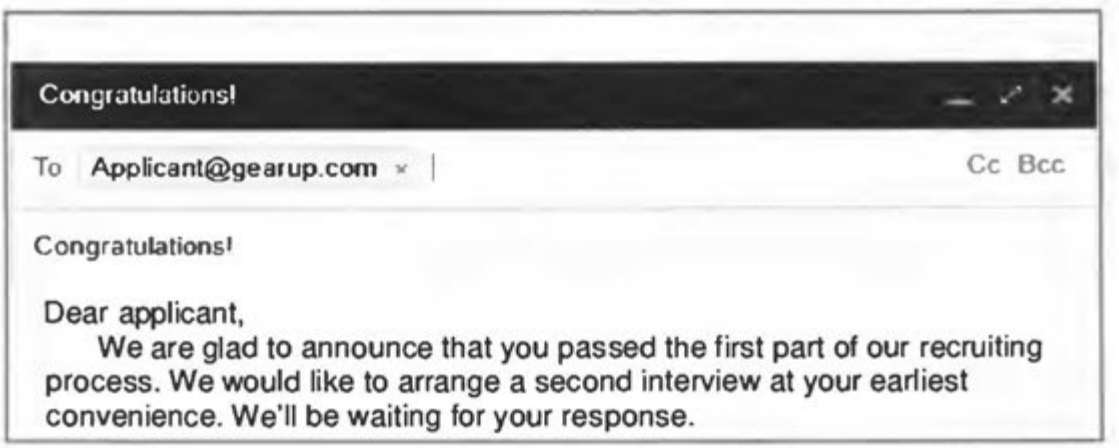
Could, would & should

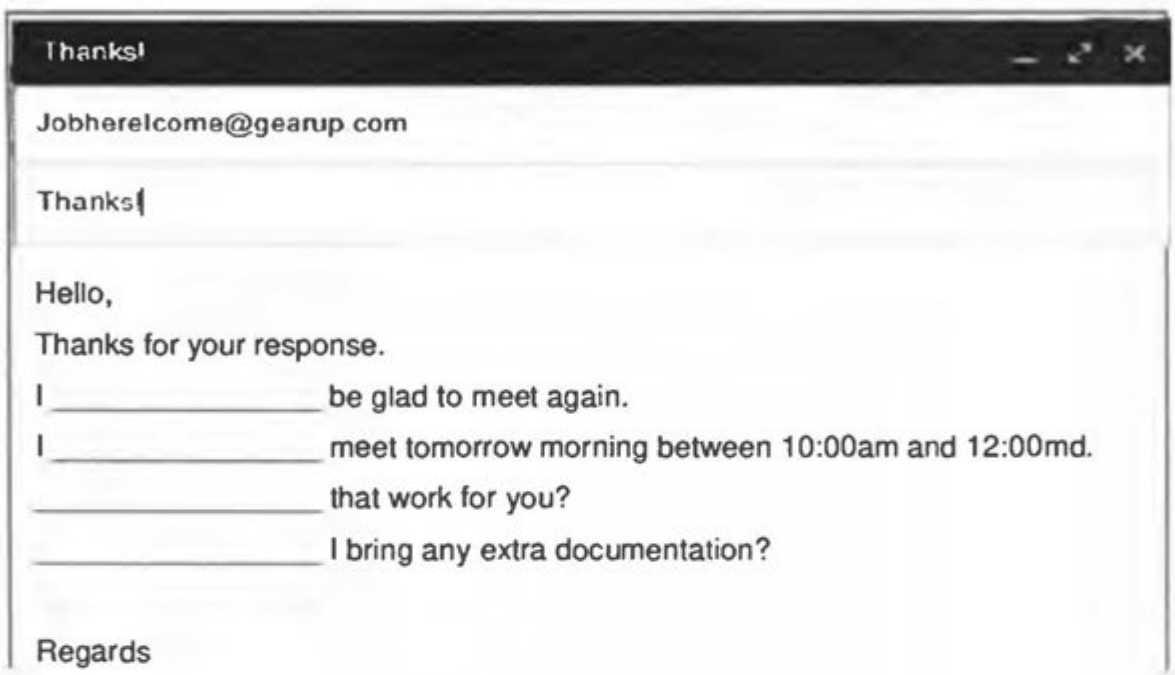
Modal verbs are used in together with verbs to express their function; for example, giving a suggestion or providing some advice. Verbs after the modals remain always in simple form:

For example:

- You *could* use a solar panel in order to lower the costs.
- You *should* advise the community to use alternative energy methods.
- In this case, I *would* start by check the systems' gradient.

➢ Use the modals above to fill in the blanks the response for the following email:




Thanks!
Jobherelcome@gearup com
Thanks!
Hello,
Thanks for your response.
I _____ be glad to meet again.
I _____ meet tomorrow morning between 10:00am and 12:00md.
_____ that work for you?
_____ I bring any extra documentation?
Regards

Unit 2 - Job, here I come! **Lesson Plan #12** **Instructor:**
Andrea Sánchez V. **Week 6 - Class 2**
Assistant: Pilgrim & Elizondo **13/09/2017**

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will be capable of advocating for a specific proposal related to a hypothetical work problem.

Specific Objectives: By the end of this lesson, Ss will:

1) Effectively speak about specific mechanical engineering concepts reviewed in previous classes.
2) Accurately explain a mechanical engineering concept in front of the class.
3) Talk about their own proposal for a specific problem while monitoring their projected confidence.
4) Orally defend their own proposal for a mechanical engineering problem in front of the class.
5) Correctly identify the function of the modals *could*, *would* and *should* by completing a dialogue.

Comments:

Reminder: A week from today they'll have their 2nd evaluation: Defending a proposal.

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Ss will play magical chairs with the variation that there will be no chairs taken out. Each desk/chair will have a mechanical engineering topic flipped upside down. When the music stops and the Ss find a sit, they will flip the card up and tell the classmate sitting in front everything they know about the topic on their chair. Their classmate will do the same with his own card. Ss will have 1 minutes to talk about the concepts, then, the music will play again. Tr will do the same drill 3 times making sure students don't repeat the same seat.	R L S	**Vocabulary** Mechanical design Alternative power sources Air conditioning system SolidWorks Electrical systems Solar panels Wind turbines Mechanical drawing Mechanical design		15 min Done by 5:15pm
2	**Pre-task 1** Ss will work in pairs. Each couple will randomly choose a mechanical	R W S L	**Vocabulary** Alternative power sources	**Cognitive** Dealing with difficult words:	15 min Done by 5:30pm

	engineering topic from a bag: Alternative power sources, mechanical design and air conditioning systems. They will be asked to create an explanatory flyer with the most important aspects of each concept; for example: definition, characteristics and importance for mechanical engineering. Tr will say: "Part of your future job is to explain very complex concepts in a simple way. A lot of times you will be communicating with operations workers or diverse staff who are not engineers. Remember when we studied dealing with difficult words while reading? We can apply some of the same strategies while speaking. For example, if you don't know the word *motor* in English, you can explain that it is the main part of the car that provides it with power to run. If you don't know the word, try to describe it. Also, what is a synonym for engine? Motor? Yes, we can also look for synonyms or antonyms when we don't know a word." Ss will present their flyers to the rest of the class and Tr will encourage that Ss		Mechanical design Air conditioning systems ***Useful vocabulary*** *In regards to air conditioning systems, we could say that...* *When talking about mechanical design, one can start by saying...* *In order to talk about alternative power systems we should start by...*	-Description -Synonyms / Antonyms	

	utilize the Useful language on the board along their presentation.				
3	**Pre-task 2** Tr will say "Sometimes the nature of the company will be very unfamiliar to you. A strategy to use in a job interview is to keep calm and show confidence to the interviewer. Whether your proposal is the best one or not, the confidence that you show in what you are saying is essential to convince your interviewer. In order to show confidence you should: -Speak at a normal pace: not too slow, not too fast. -Look the interviewer in the eye. -Use body language to show that you're paying attention. " Then, Ss will be asked to take one of the cards that will be posted on the wall. Some cards have company's needs and others have possible solutions to those needs. Ss will be asked to walk around the classroom and find the person who has the need that matches his/her solutions	R S L	**Vocabulary** Indigenous eolic energy wind turbines packing innovative to store twisted beverages seaweed solar panels **Useful language** Let me tell you what I have been working on... I work for a company that...	**Metacognitive** Self-monitoring	15 min Done by 5:45pm

	and the other way around. Then, they can address the need with more details and elaborate on their solution. At the end, each Ss will receive **Handout 54** and work in pairs to reflect on their learning process.				
4	**Main Task** Ss will work individually. They will randomly choose one of 3 hypothetical situations from a bag and work in a proposal using **Handout 55**. In Handout 55 they will use the SAFER method studied in the previous class to create a script for their proposals. After 15 minutes Ss will be asked to orally present their proposal in front of the class. All the proposals for the same situation will be presented in class and the Ss who did not choose the same situation will have 1 minute to ask questions. Then, the class will vote for the best proposal for each of the situations.	S L R W	**Useful language** *For the given situation I would suggest...* *In a situation like this one could...* *With the information given, I think we could...* *From my experience, I think you should*		40 min Done by 6:25pm

5	**Post-task 1** Ss will be given **Handout 56** and work individually. Tr will explain briefly that modals are a particular group of auxiliary verbs in English which help to set the function of the verb that follows them, for example, offering a suggestions, providing advice and others. In this case, Ss will review the use of could, would, should for suggestions, possibility or advice. Tr will review the modals pronunciation with some open class drills. Tr will ask Ss to complete the dialogue for a phone conversation included in Handout 56 using the mentioned modals. Then, Ss will practice reading the dialogues aloud with a partner.	R W S L	***Useful language*** *I should...* *I could...* *I would...* ***Grammar*** *Modals:* *Could, would, should.*		15 min Done by 6:40pm

Unit 2 - Job, here I come!
Handout 54

When defending your proposal, remember:

Show confidence in your proposal!

-Use body language to show that you're paying attention.
-Speak at a normal pace: not too slow, not too fast.
-Look the interviewer in the eye.

Monitoring your learning

- Were you able to express your ideas clearly?
- What was the most difficult part of expressing your ideas in English?
- Do you feel that you were able to transmit confidence?

Unit 2 - Job, here I come!
Handout 55 - Situations

Situation 1

The Biology School of the University of Costa Rica runs several rural programs. One of them is the production of *pianguas* in Golfito. Pianguas are crustaceans that live in the muddy roots of the mangroves. The extraction of pianguas has been done by hand for several generations. The process is slow and this increases the price of the product. The Biology School is attempting to industrialize the process and they have an available internship position for a mechanical engineer. The Biology School needs a mechanical design that will help the farmers to extract pianguas in a more efficient way. What would you suggest to do in this situation?

Situation 2

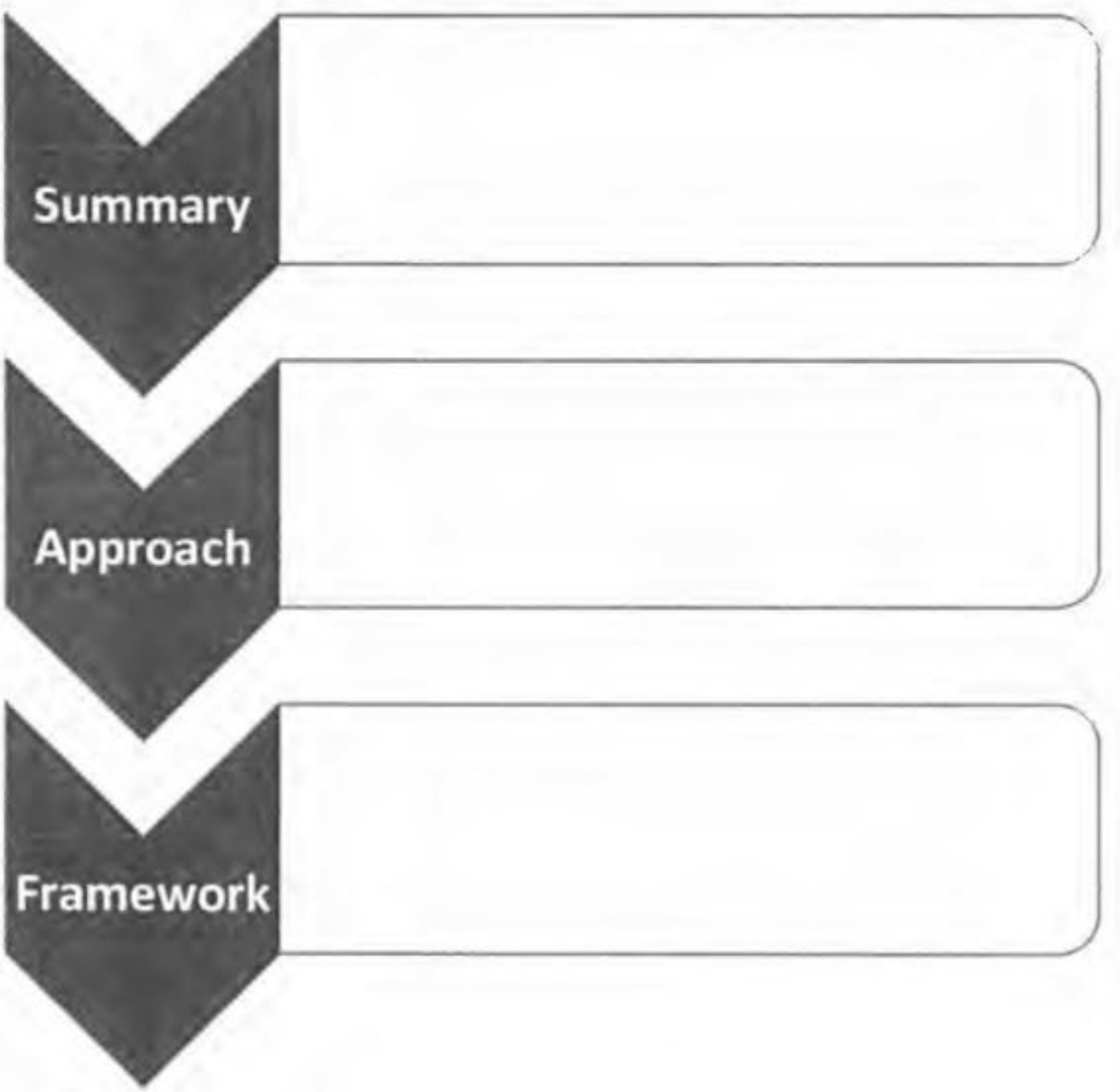
The community of Ngöbe in the boarder of Costa Rica and Panama is encountering a new problem for them. They don't have electricity. Most of their needs, from sheltering to cooking are met using wood. The community has overused the wood source available in the area and now they are facing severe deforestation. PNUD (Programa de Naciones Unidas para el Desarrollo) is looking for a mechanical engineer who can supervise a program that can help the Ngöbe community. How would you solve this situation?

Situation 3

Cima Hospital is opening a new facility in Liberia. Due to the nature of the business and the climate in Liberia, they have been meeting with many air conditioning companies in order to get the best deal. Cima is looking for the most efficient, innovative and inexpensive air conditioning system. The new hospital in Liberia will cover a total of 21000 m^2. What would be your proposal in this case?

Unit 2 - Job, here I come!
Handout 55

- **Read the situation that presents a mechanical engineering problem. Then, write a brief script, using the SAFER method studied last lesson, which will help you present your own proposal in front of the class.**



Unit 2 - Job, here I come!
Handout 56

Language Focus: Modals

Could, would & should

Modal verbs are used together with other verbs to express their function; for example, giving a suggestion or some advice. Verbs after the modals remain always in simple form:

For example:

- You *could* use a solar panel in order to lower the costs.
- You *should* advise the community to use alternative energy methods.
- In this case, I *would* start by check the systems' gradient.

*Would can also be used to express a desire.

➢ Use the modals above to fill in the blanks and complete the following phone conversation:

HR Manager: Hello, Mr./Ms. (1) _____
I'm calling you to let you know that you passed the first part of our recruiting process. We would like to arrange a second interview at your earliest convenience.

You/Applicant: Hello,
Thanks for your response.
I (2) _____ be glad to meet again.
I (3) _____ meet tomorrow morning between 10:00 a.m. and 12:00md. (4) _____ that work for you?
(5) _____ I bring any extra documentation?

HR Manager: That time works great. No, you don't need to bring any extra documents. It will be just an oral interview. Thanks. We will see you tomorrow.

You/Applicant: Thanks a lot. Good bye.

Material 16
Unit 2 - Job, here I come!
PreTask 1 Vocabulary

ALTERNATIVE POWER SOURCES
MECHANICAL DESIGN
AIR CONDITIONING SYSTEMS

Material 17
Unit 2 - Job, here I come!
Magical chairs vocabulary

MECHANICAL DESIGN
ALTERNATIVE POWER SOURCES
AIR CONDITIONING SYSTEM
SOLIDWORKS
ELECTRICAL SYSTEMS
SOLAR PANELS
WIND TURBINES
MECHANICAL DRAWING
MECHANICAL DESIGN
WATER PUMP

Unit 2 - Job, here I come!

Instructor: Fabian Elizondo
Assistant: Pilgrim & Sánchez

Lesson Plan #13
Week 7 - Class 1
18/09/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will be capable of advocating for a specific proposal related to a hypothetical work problem.

Specific Objectives: By the end of this lesson, Ss will:

1) Answer questions related to mechanical engineering problems by identifying possible issues presented in comic strips.
2) Explain a solution proposal by using realia.
3) Effectively deliver a solution proposal by using the strategy read and look up.
4) Successfully describe a solution proposal for a mechanical engineering problem in front of the class.
5) Correctly identify the function of the modals *could*, *would* and *should*.

Comments:

Hand out résumé feedback and results

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will read the objective for the class and will remind Ss that this class is a continuation from the previous one. Tr will draw Ss attention to some situations that may cause work problems. Vocabulary will be written on the board, and Tr will review pronunciation with choral and individual drills. Then, Tr will instruct Ss to look underneath their desks. Each desk will have a comic strip that represents a mechanical engineering problem. Ss have to go around the class and find a classmate who has the same comic strip. Then, Ss will answer in pairs: -Do you think that this is this a real problem in mechanical engineering? -As future engineers, what can we do to avoid this problem?	R L S	**Vocabulary** Budget issues Communication problems Overlook problems Overlook instructions Flexible solutions **Useful vocabulary** *I think the problem here is...* *One could solve this problem by...* *I would suggest doing...*		10 min Done by 5:10pm
2	**Pre-task 1** In the previous class, Ss were working on creating proposals for particular mechanical engineering work problems. Tr will tell Ss: "One problem that we can all relate to is	R S L	**Vocabulary** Materials: Mirror Magnets Potato Fruit peel		20 min Done by 5:30pm

	the need to get energy from alternative sources. El Angel S.A. is a local company committed to reducing its carbon emissions. They will build a new big processing plant in Cinchona, and they are looking for alternative ways to create electricity. On your desks, you will find different items. With your partner, work on a clean proposal for El Angel S.A., using the item in front of you" Ss will present their proposals in front of the class. Each pair has 5 minutes to get ready and 2 minutes to present their proposal.		Alcohol Windlass **Useful language** How can you create electricity with...? You can create electricity with a .... By...		
3	**Pre-task 2** Tr will draw Ss attention to the fact that they have learned some speaking strategies that imply some writing. Tr then says: "Imagine something like this in a job interview: [An assistant Tr models a very boring reading of a proposal] Do you think this person will get the job? Today we will learn a very useful strategy that will make your proposals interesting even if you need to read to remember your ideas. It is called read and look up and it is exactly that." Ss will be asked to take out **Handout 55** from the previous class.	R S L		**Cognitive** Read and look up **Metacognitive** Monitor your learning	15 min Done by 5:45pm

	Ss will work in pairs using their own scripts to practice the strategy read and look-up. Finally, Ss will receive **Handout 57** and reflect on their learning process.				
4	**Main Task** Tr will remind Ss the strategies learned so far in order to prepare and deliver an attractive proposal: - Think aloud - Dealing with difficult words (description, synonyms/antonyms) - Show confidence (Tr asks for the 3 steps in open class) - Script (SAFER method) - Read and look up. As this exercise is a continuation from last class, the Tr will review in open class the 3 situations that Ss had to create a proposal for. Then, Ss will receive **Handout 58** with instructions for the Main Task and the rubric that will be used in the next lesson to assess the delivery of their solution proposals. Tr will ask Ss to get ready and each Ss will have 2 minutes maximum to deliver their own proposals to the rest of the class. All the proposals for the same situation will be presented in class	S L R	**Useful language** *For the given situation I would suggest...* *In a situation like this one could...* *With the information given, I think we could...* *From my experience, I think you should*		40 min Done by 6:25pm

	and the Ss who did not choose the same situation will have 1 minute to ask questions. Then, the class will vote for the best proposal for each of the situations.				
	Post-task 1 Ss will be given **Handout 59** and work individually. Tr will explain briefly that modals are a particular group of auxiliary verbs in English which help to set the function of the verb that follows them; for example, offering suggestions, giving advice and describing possibilities. In this case, Ss will review the use of could, would, and should for suggestions, possibility, or advice. Tr will review the pronunciation of the modals with some open class drills. Tr will ask Ss to complete the dialogue for a phone conversation included in Handout 56 using the mentioned modals. Then, Ss will practice reading the dialogues aloud with a partner.	R W S L	***Useful language*** *I should...* *I could...* *I would...* ***Grammar*** *Modals: could, would, should.*		15 min Done by 6:40pm

Unit 2 - *Job, here I come!*
Handout 57

When using a script in your proposal, remember:

Read and look up!

- Use eye fixation to read an entire line from the script. (Remember eye fixation from Unit 1?)
- Then look up, away from the text, and paraphrase what you read.
- This strategy is helpful to remember ideas, not exact words or phrases.

Monitoring your learning

- **Were you able to look up and express the idea clearly?**
- **Do you think that your partner understood your idea?**
- **Do you feel that this strategy can help you in a job interview? Why? Why not?**

Unit 2 - Job, here I come!
Handout 58

When delivering your proposal in a job interview, remember:

- Think aloud to practice before the job interview.
- Write a script (Remember the SAFER method?) before the job interview.
- Deal with difficult words by describing them or looking for its synonym or antonyms.
- Show confidence by looking the interviewer in the eye, speak at a normal pace and use active listening.
- Read and look up during the job interview.

- You will have 2 minutes to deliver your solution proposal (**Handout 55**) in front of the class. The audience (classmates) will have 1 minute to ask questions about your proposal. Then, the audience (classmates) will choose what they think is the best proposal for each situation.
- The rubric below will be used next lesson to assess you in a similar exercise.

Proposal Assessment Rubric (20%)			
Student's name:			
Category	**Description**	**Points assigned**	**Score**
Strategies	Student is able to use at least one speaking strategy studied in class	1 pt	
Language use	Student is capable of using proper English structures and pronunciation.	1-2 pts	
Vocabulary	Student uses useful vocabulary studied in class in his/her proposals.	1-3 pts	
Communication	Student is able to clearly describe his/her own proposal	1-4 pts	
	Total	**10 pts**	
Comments			

Unit 2 - Job, here I come!
Handout 59

Language Focus: Modals

Could, would & should

Modal verbs are used in together with other verbs to express their function; for example, giving a suggestion or providing some advice. Verbs after the modals always remain in simple form:

For example:

- You *could* use a solar panel in order to lower the costs.
- You *should* advise the community to use alternative energy methods.
- In this case, I *would* start by checking the systems' gradient.

➢ Use the modals above to fill in the blanks and complete the following phone conversation:

HR Manager: Hello, Mr./Ms. _____
I'm calling you to let you know that you passed the first part of our recruiting process. We would like to arrange a second interview at your earliest convenience.

You/Applicant: Hello,
Thanks for your response.
I _____ be glad to meet again.
I _____ meet tomorrow morning between 10:00am and 12:00md. _____ that work for you?
_____ I bring any extra documentation?

HR Manager: That time works great. No, you don't need to bring any extra documents. It will be just an oral interview. Thanks. We will see you tomorrow.

You/Applicant: Thanks a lot. Good bye

Unit 2 - Job, here I come!
Instructor: Fabián Elizondo
Assistant: Pilgrim & Sánchez

Lesson Plan #14
Week 7 - Class 2
20/09/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will be capable of advocating for a specific proposal related to a hypothetical work problem.

Specific Objectives: By the end of this lesson, Ss will:

1) Show understanding of previously studied concepts by answering questions in an online game.
2) Discuss a solution proposal with a classmate by analyzing a hypothetical mechanical engineering problem.
3) Effectively explain a solution proposal to a hypothetical potential employer.
4) Successfully describe a solution proposal for a mechanical engineering problem in front of the class.
5) Deliberate about their improvement opportunities while defending a proposal by reflecting on their performance.

Comments:

Collect Handout 61 before the class ends.

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will read the objective for the class and will remind Ss that in this class we will have the 3rd evaluation for the course: defending a proposal. Tr will ask Ss to form groups of three and to think of a name for their team. Then the class will play Jeopardy (http://www.superteachertools.us/jeopardyx/jeopardy-review-game-live.php?gamefile=2280752&playid=2318988) in order to review important concepts studied so far un Unit 2.	R L S	Engineer, entrepreneur, culturally-sensitive, goal-oriented, institutionalized, soft and hard skills, creativity, literacy, heading, highlights, summary, approach, framework, execution, reflection, script, monitoring		10 min Done by 5:10pm
2	**Pre-task 1** Tr will review useful vocabulary on the board with some repeating drills. Then, Tr will ask Ss to work in pairs, and they will receive **Handout 60.** Ss will have one mechanical engineering situation each, and they will be asked to share the situation with their classmates, asking him/her for a solution proposal. Ss will write their feedback about their classmate's proposal in the Handout	R W S L	**Vocabulary** Aqueduct, claims, spring, sealed, launch, reliability, failure **Useful language** *I think you could...* *Maybe you should...* *If I were you, I would...*		15 min Done by 5:25pm

	and at the end of the task, they will share it orally.				
3	**Pre-task 2** Tr will group Ss in teams of 4. There will be a role play in which the Trs are business people and they have a mechanical engineering problem to be solved in their companies. Each Tr and assistant Tr will have a station in the class and they will work with one of the teams. Trs will share the problem with the Ss. Each Ss will co-evaluate one of his/her classmates within the team using the Peer Evaluation Rubric designed for this particular task. According to the number of Ss, the Tr will indicate the Ss who they will be evaluating. Ss will have two minutes to ask general questions about the company and then each one will have 2 minutes to share their proposals.	S L W	**Useful language** *For the given situation I would suggest...* *In a situation like this one could...* *With the information given, I think we could...* *From my experience, I think you should...*		20 min Done by 5:45pm
4	**Main Task** There will be several papers that include three hypothetical mechanical engineering problems from real national companies in a bag. Each St will choose a situation	S L R W	**Useful language** *For the given situation I would suggest...*		40 min Done by 6:25pm

	from the bag. Using any of the strategies studied before, they will prepare a proposal to solve the problem. They will have 10 minutes to do so. Then, Tr will call the proposals for Situation 1 and the Ss will describe their ideas in front of the class in a maximum of 3 minutes. The Tr and the assistant Trs will evaluate each Ss presentation using the Proposal Rubric, designed for this particular task. Then, the process will repeat with Situations 2 and 3.		*In a situation like this one could...* *With the information given, I think we could...* *From my experience, I think you should...*		
	Post-task 1 *Planning an reporting* Ss will work in pairs and receive **Handout 61.** Ss will discuss how they felt in different tasks and reflect on their learning. Then, on the second part, Ss will be asked to self-assess their performance when defending their own proposal, and this will be part of their course evaluation. Assistant Trs will collect **Handout 61** before the end of the class.	R W S L	1.How did you feel defending your proposal in front of the class? 2.Was it difficult to evaluate a classmate? Why? Why not? 3.What do you think that you can improve when defending a proposal of your own?	**Metacognitive** Monitor their learning	15 min Done by 6:40pm

Unit 2 - Job, here I come!
Handout 60

Student A

- In pairs, share this situation with your partner. In the space below, write anything you think that your partner did well or can improve about his /her proposal and share it with him/her at the end.
  For example: *-Didn't make eye contact*
  -Very innovative solution

A private aqueduct in Guanacaste has been receiving an increasing amount of claims from their clients about the very poor pressure of water that they receive in their homes. They are in the process of hiring a mechanical engineer in order to address this situation. The question in the job interview is: what would be your proposal to fix the water pressure?

Student B could improve:

Student B

- In pairs, share this situation with your partner. In the space below, write anything you think that your partner did well or can improve about his /her proposal and share it with him/her at the end.
  For example: *-Didn't make eye contact*
  -Very innovative solution

The UCR Solar Observatory is launching the Cosmic Unresolved Background Instrument (CUBIC). CUBIC is sealed during launch then has to open its 'door' to operate. This door only has to open once. If it opens, CUBIC is a success; if it doesn't open, CUBIC fails. There are 3 methods for opening doors in space:
motor,
spring, and explosives.
Motors: medium reliability; failure = CUBIC full or partial failure
Spring: medium reliability; failure = CUBIC full failure
Explosives: very reliable; failure = damages entire CUBIC platform.

Student A could improve:

Unit 2 - Job, here I come!
Handout 61 - Self-assessment

Name: _____ **_____pts/ 15 points**

➢ In the pairs, discuss the following questions:

7. How did you feel defending your proposal in front of the class?

8. Was it difficult to evaluate a classmate? Why? Why not?

9. What do you think that you can improve when defending a proposal of your own?

➢ Individually, please rate the following statements. Indicate your answer by placing an X in the appropriate column according to the scale below. This section will count as part of your evaluation today.

5-Excellent 4-Very Good 3- Average 2-Poor 1-Very Poor

	Your performance	1	2	3	4	5
1.	I was able to describe a proposal of my own for a specific problem.					
2.	I used one or more strategies learned in class to defend my proposal.					
3.	I was able to express my ideas clearly.					
	Total					

Material 18

Unit 2 - Job, here I come!

Peer Evaluation Rubric

- You will evaluate the performance of one of your team members in this exercise. This evaluation will count for your classmate's final grade. Please write a check mark under to number that you consider appropriate according to the scale below.

Your name: _____ Classmate's name_____

5-Excellent 4-Very Good 3- Average 2-Poor 1-Very Poor

	Classmate's performance	1	2	3	4	5
1.	S/he was able to describe a proposal of his/her own for the problem given.					
2.	S/he used one or more strategies learned in class to defend his/her proposal.					
3.	S/he was able to express his/her ideas clearly.					
	Total					

Material 19
Unit 2 - Job, here I come!
Trs Scripts

Tr 1

My company, Hippie Flowers, is a family owned flower exporting company. We move fresh cut flowers from Guápiles to all USA and Canada. We are getting a lot of claims because the flowers arrive damaged and our customers can't sell them like that. We are looking for a more efficient flower packing design. Our cardboard boxes weight about 18 Kl and the flowers must be delivered within 4 days after cut. What would be your proposal for my company?

Tr 2

My company Coyol Partido has produced wine with Costa Rican grapes since 1997. We are starting to produce wine with an experimental grape. This grape requires that once the wine is bottled up, the bottle needs to be twisted 180 degrees every week in order to enhance the final flavor. We need to create a system to store the wine that we produce which will twist the bottles automatically. What would be your proposal for my company?

Tr 3

Quesos Monte Azul is my company. It is located in the Chirripó Valley. My farm utilizes the goats' excrement to feed a biodigestor which produces electricity for the house and the farm. The business has done really well and now we need an alternative power source that doesn't increment the costs. My family and I are very committed to clean energies, but we have a small budget
What would be your proposal for my company?

Material 20
2 - Job, here I come!
Main Task - Situations

Situation 1

PyF Costa Rica is a family owned flower exporting company. They transport fresh cut flowers from Llano Grande in Cartago to all USA and Canada. The company gets a lot of claims because the flowers arrive damaged. They are looking for a more efficient flower packing design. Taking into account weight, materials and time. What would be your proposal for this company?

Weight: 18 kl
Materials: cardboard boxes
Time: 4 days (from cut until final delivery)

Situation 2

Vicosa has produced wine with Costa Rican grapes since 1997. They are starting to produce wine with an Australian grape. This grape requires that once the wine is bottled up, the bottle needs to be twisted 180 degrees every 4 days for 2 months in order to enhance the fermentation process. Vicosa needs to create a system to store the wine that they produce which will twist the bottles automatically. What would be your proposal for this company?

Situation 3

Quesos Monte Azul is small family company located in the Chirripó Valley. Their farm utilizes the goats' excrement to feed a biodigestor which produces electricity. The business has grown and now they need an alternative power source that doesn't increment the costs. Quesos Monte Azul is very committed to clean energies, but they also have a small budget

What would be your proposal for this company?

Unit 2 - Job, here I come!
Instructor: Andrea Sánchez Víquez
Assistant: Pilgrim & Elizondo

Lesson Plan #15
Week 8 - Class 1
25/09/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will participate proactively in a job interview simulation while displaying cultural sensibility and knowledge of their own skills.

Specific Objectives: By the end of this lesson, Ss will:

1) Orally practice vocabulary used in mechanical engineering résumés by playing *someone who*.
2) Practice vocabulary used in a job interview by matching concepts and definitions.
3) Discuss about unexpected situations in job interviews by anticipating possible answers.
4) Participate actively in a simulation of an initial mechanical engineering job interview.
5) Discuss about the importance of cultural sensibility when applying for a mechanical engineering job.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will read the objective for the week. Then, s/he will remind Ss that so far, they have worked on their résumé and prepared a solution proposal. Now it is time to get ready for the job interview. Assistant Trs will distribute **Handout 62.** Ss will walk around the classroom to find *Someone who* meets the different criteria included in the Handout. All the information in **Handout 62** was taken from the Ss' résumés.	S L R W			10 min Done by 5:10pm
2	**Pre-task 1** Tr will say: "It may seem obvious, but some people forget to review their own résumé. A good strategy before you go into a job interview is to review the information that you wrote on your résumé. Just like we did in the previous activity, you should have your own information clear and fresh. This includes institution names, dates and contact people.	S L R W	**Vocabulary** Entry position to hire fake level of language candidate / applicant leading position embarrassing employer	**Cognitive** Review your résumé	10 min Done by 5:20pm

	Today, we will analyze some other situations that can be unexpected in a job interview " Tr will then ask in open class: -What do you think that can go wrong in a job interview? Listen to 4 or 5 answers. Then Tr will tell Ss that one thing that can be unexpected in a job interview is the vocabulary. Then, Ss will receive **Handout 63**. Ss will have to find a classmate who has the missing information in their sheets and complete it. Tr will encourage Ss to practice the concepts and definitions verbally and not only copy them. Tr will review pronunciation in open class at the end.		**Useful language** -Do you have a definition for *Candidate*? -Yes, I do. It is ...		
3	**Pre-task 2** Ss will watch a video about a fake job interview. (https://www.youtube.com/watch?v=pLnS8P4vrto) Tr will say: "Unexpected situations can happen in job interviews. What is really important is how you deal with them. Another good strategy in a job interview is to take the attention focus where it is positive for you". Tr will ask assistant Trs to help	L S R	**Useful language** -What would/should you do if ... -I think I would...	**Cognitive** Take the attention focus where you want.	20 min Done by 5:40pm

	modeling right and wrong answers for possible job interview questions. Afterwards, Trs will deliver **Handout 64**. Ss will be asked to briefly discuss in pairs how they would react to some unexpected situations in a job interview. Tr will ask for some volunteers in order to get some possible answers. Make a list on the board.				
4	**Main Task** Tr will draw Ss attention to fact that if they follow the two previous strategies—reviewing their own résumé and taking the attention point to where they need—, they have a big chance to succeed in the job interview. Tr will also elicit some strategies taught in previous classes that will help Ss in the main task such as: read and look up and show confidence. Ss will work in pairs, and they will receive **Handout 65**. Ss will engage in a role play of recruiter / applicant. Each Ss is given a recruiter's script to pre-interview the applicant. The *recruiter* will have some room in the Handout to write any feedback that s/he considers useful for the applicant and share it with his/her	R W S L	**Useful language** -I don't have experience, but let me tell you that I... -I haven't worked with that technology; however, ... -I don't have the information at hand, but I will do some research about it. -That is a very good question. Let me organize my thoughts. -That's not a concept I'm really familiar with yet, but ...		40 min Done by 5:20pm

	classmate at the end. Ss will also receive **Handout 66** with Useful Language. Trs will monitor closely and provide immediate feedback.				
5	**Post-task 1** Tr will point out the importance of cultural sensitivity in a job interview. Ss will watch a video about an organization which is trying to change engineering culture. (http://stemforall2017.videohall.com/presentations/1038) Then, Ss will work in pairs with **Handout 67** and they will discuss and reflect on the importance of cultural sensibility when applying for a job.	R W S L	**Useful language** I agree/disagree with the video because... I remember that once I... I think cultural sensibility is / is not important to get a job because...	**Cognitive** Cultural sensibility	15 min Done by 6:35pm

Unit 2 - Job, here I come!
Handout 62

- Walk around the classroom and ask your classmates if they meet the following statements. If they do, write his/her name on the right column.

FIND SOMEONE WHO....

1) Has a second last name that starts with a consonant	
2) Lives outside of San José	
3) Graduated from a technical high school	
4) Passed Thermodynamics 1	
5) Has a technical diploma	
6) Graduated from a scientific high school	
7) Passed Refrigeration Systems	
10) Has experience drawing is SolidWorks	
8) Has been in a job interview	
9) Is currently working	

Unit 2 - Job, here I come!
Handout 63

Student A

➢ **Walk around the classroom and find a classmate that has the information that you are missing in the following table. Then, write the missing information.**

Word or concept	Definition
1) Candidate / Applicant	
2)	Lowest position available. You will not have anyone to assist you doing your job.
3) Leading position	
4)	Congratulations, you got the job!
5)	Something that is not real.
6) Embarrasing	
7)	How good can you speak/write a language
8) Employer	

Unit 2 - Job, here I come!
Handout

Student B

➢ **Walk around the classroom and find a classmate that has the information that you are missing in the following table. Then, write the missing information.**

Word or concept	Definition
1)	**Person who is looking for a job**
2) Entry-level position	
3)	**You will make decisions for the team. You will have people under your supervision.**
4) To hire	
5) Fake	
6)	**Something that makes you feel ashamed**
7) Level of language	
8)	**Person or company that hires you.**

Unit 2 - Job, here I come!
Handout 64

➢ **Watch a video about a job interview and discuss with your classmate what you should do in the following situations:**

- Recruiter asks you something that you don't know, but that you have heard about.
- Recruiter asks you what you know about the company, but you didn't look for any information previously.
- You were late for the job interview. What can you say?

Unit 2 - Job, here I come!
Handout 65

➢ You are a recruiter for a company that is looking for a mechanical engineer. Use the following script to interview your partner. You may use any extra questions that you consider appropriate.

Hello, my name is _____
Welcome to our company. We received your résumé and I will do an initial short interview.
Can you answer some questions for me?
Great, let's get started!
-Tell me a little about your personal interests and activities.
-Can you walk me through your résumé?
-What you do know or have you hear about our company?
-Why should we hire you?
-Do you have any experience with nuclear nanotechnology reactors?
Thank you so much for your responses. If needed, we will call you for another interview.

Feedback for the candidate:

Unit 2 - Job, here I come!
Handout 66

Useful language
How to say "I don't know" in a job interview:

Take some time:
-That is a very good question. Let me organize my thoughts...

Take the attention focus where you want:
-That's not a concept I'm really familiar with yet, but I have worked on something similar...
-I don't have experience, but let me tell you that I...
-I haven't worked with that technology before; however ...

Show initiative:
-I don't have the information at hand, but I will do some research about it.
-I don't know a lot about that process, but I'll be delighted to learn more.

Be honest:
-I remember doing well in that course and enjoying it, but it has been a while and I don't recall the specifics right now.
-Honestly, my research into your company was very focused on understanding the company history. I'm afraid I don't know much about...

Unit 2 - Job, here I come!
Handout 67

Cultural sensibility

➢ Watch the video about cultural sensibility in the engineering field. Discuss with your classmate the following questions:

- Do you agree with the video in terms that "engineering cultures are unwelcoming and ill-tuned to the needs of underrepresented groups such as women, racial minorities, LGTBQ community and those with disabilities"? Why?

- Do you remember a situation in which you had to be sensitive about cultural differences?

- Do you think cultural awareness is important to get a job? Why? Why not?

Unit 2 - Job, here I come!
Instructor: Andrea Sánchez Víquez
Assistant: Pilgrim & Elizondo

Lesson Plan #16
Week 8 - Class 2
27/09/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will participate proactively in a job interview simulation while displaying cultural sensibility and knowledge of their own skills.

Specific Objectives: By the end of this lesson, Ss will:

1) Describe mechanical engineering concepts used in job interviews.
2) Show understanding of job interview tips by classifying them in four different categories.
3) Discuss possible open end questions for a mechanical engineering job interview.
4) Clearly answer questions used in mechanical engineering job interviews while using the appropriate body language.
5) Show understanding of first and second conditional structure by properly using them while describing hypothetical situations.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will ask Ss to recall the objective for the week. At the same time one of the assistant Trs will write the objective on the board. Tr will remind Ss the importance of certain vocabulary during the job interview. Then Ss will be asked to come to the front of the class and form a line facing the board. The Tr will tape a mechanical engineering concept to each Ss's back. Ss will have to go around the classroom and ask a classmate to describe the concept that they have taped in the back without mentioning the concept so they can guess it. Tr will have a 1 minute whistle which means that they have to move on and look for another classmate. At the end, Ss will receive **Handout 68** which will include all the concepts and its definitions. Tr will check pronunciation in open class.	S L R	**Vocabulary** Torque or turning force Stress Strain Spring Stiffness Viscosity Buoyancy Venturimeter Entropy Calorific value of fuel Boiler / Steam generator Nozzle Flywheel	**Cognitive** Describing concepts	10 min Done by 5:10pm

2	**Pre-task 1** Tr will draw Ss attention to the fact that not only what they say in a job interview is important. There are several things that we don't say, but that also matter. Tr will write on the board: dress code, formal titles, body language and manners / etiquette. Then, Ss will work in groups of 3 and they will have to categorize different situations given on slips of paper among these four essential aspects of a job interview: dress code, formal titles, body language and manners / etiquette. At the end of the activity, Trs will distribute **Handout 69** so every Ss can have a copy of the correct classification. Tr will review the essential aspects in open class and exemplify some undesired situations. (For example, chewing gum, sitting too comfortably, extremely hard handshake, etc.)	S L R	**Vocabulary** Dress code Formal titles Body language Manners / Etiquette		15 min Done by 5:25pm

3	**Pre-task 2** Tr will say: "Due to the validity of emotional intelligence and cultural competence at the workplace, you may encounter non-conventional and non-technical questions in a job interview. They are called open end questions. There is not right or wrong answer for them. Most of them are hypothetical situations and their function is to reveal personality traits in a subtle way" Ss will work in pairs and they will be given **Handout 70**. They will discuss at least 5 conditional questions with their classmates. Each student chooses which questions to use from a list of 15. Assistant Trs will monitor closely and offer immediate feedback.	L S R W	**Useful vocabulary** *If I could... I would...* *If I were ....I would...* *If I had... I would...*		15 min Done by 5:40pm
4	**Main Task** Tr will remind students that non-technical issues are also important in a job interview and they also need practice. Tr will instruct Ss to pay special attention in their body language for the main task. Then, the group will be divided into two. Trs will distribute **Handout 71**	S L R W		**Cognitive** Body language	40 min Done by 5:20pm

	among Team A first. Each Ss from team A will be given a possible question for a mechanical engineering job interview. Team A will sit in a row shoulder to shoulder. Each Ss on Team B will take a sit in front of Team A Ss and answer his/her question. After 2 minutes, each Ss on Team B will move to the next chair on their right and answer the question from the new classmate from team A. They will keep moving to the next chair every two minutes until they have answered all the questions. Then, Team B will be given some questions and Team A will answer them in the same way. Assistant Trs will monitor closely and offer immediate feedback.				
5	**Post-task 1** Tr will ask Ss if they deal with hypothetical situations in mechanical engineering. Then, s/he will explain that in English, whenever we talk about a hypothetical situation we use conditionals. Ss will receive **Handout 72.** Tr will review the conditional examples in open class and then Ss will follow up with some oral practice.	R W S L	**Language focus** Conditionals		15 min Done by 6:35pm

Unit 2 - Job, here I come!
Handout 68

- **Useful mechanical engineering concepts in a job interview**

Concept	Description
Torque or turning force	It is the total amount of force which is required to create acceleration on moving substances. A turning or twisting force
Stress	If one force acts on the outside of a material, then a reactive force automatically acts to protest that force. The amount of reactive force per unit area is called stress.
Strain	Amount of deformation per unit length of a material body under the action of applied forces
Spring	Device that can be distorted under certain amount of load and returns to its original form once the load is removed.
Stiffness	The amount of load required to resist the deflection.
Viscosity	The amount of resistance of one layer of fluid over other layer of fluid
Buoyancy	The tendency of a body to float or to rise when submerged in a fluid
Venturimeter	Device that measures the discharge of a fluid.
Entropy	A measure of the unavailable energy in a closed thermodynamic system that is also usually considered to be a measure of the system's disorder. the degree of disorder or uncertainty in a system
Calorific value of fuel	Total amount of heat obtained from burning 1kg of solid or liquid fuel.
Boiler / Steam generator	Closed vessel usually made of steel. Its function is to transfer heat to water to generate steam.
Nozzle	A short tube with a taper or constriction used (as on a hose) to speed up or direct a flow of fluid
Flywheel	A heavy revolving wheel in a machine that is used to increase the machine's momentum and thereby provide greater stability or a reserve of available power during interruptions in the delivery of power to the machine.

Unit 2 - Job, here I come!
Handout 69

It is not said, but matters...

➢ **Dress code**

- Dress in a manner that is professionally appropriate to the position for which you are applying. Your suit should be comfortable and fit you well so that you look and act your best. Avoid loud colors and flashy ties. Clothing should be neat, clean and ironed.
- Make sure you have fresh breath. Brush your teeth before you leave for the interview, and don't eat before the interview. Don't smoke right before an interview.
- Interview suits should be simple and dark in color. Anything tight, bright, short, or sheer should absolutely be avoided.
- Keep your jewelry and hair accessories to a minimum, and stick to those that are not flashy, distracting, or shiny. One ring per hand is best.

➢ **Formal Titles**

- For English speaking countries, it is common to call people that you are meeting for the first time with a formal title followed by their last name, e.g. *Mr. Smith* or *Ms. Gamboa*. If they ask you to call them by their first name, then you can do so.

➢ **Body language**

- While waiting and during the interview don't hunch your shoulders or tuck your chin into your chest. Avoid leaning forward. Sit with your back straight and your chest open—signs that you're confident and assertive.
- Shake it, don't break it. You're going to be shaking with your right hand, so prepare by arranging your belongings on your left side. Offer your hand with the palm slightly up so that your interviewer's hand covers yours. Handshake is acceptable for women as well.
- Holding a briefcase or handbag on your lap will make you seem as though you're trying to create a barrier around yourself. Put all your personal belonging next to you in a chair or in the floor.
- It's fine to sit about a 30cm away from the table so that your gestures are visible.
- Keep your hands over your lap. Don't cross your arms. If you need your hands to emphasize something, make sure they don't go above your shoulders. Don't put your hands behind your back and NEVER in your pockets.

- Respect personal space.
- At the end of the interview, gather your belongings calmly, rise smoothly, smile and nod your head.

- **Manners / Etiquette**

- Bring extra copies of your resume along with a list of references to offer the interviewer. Also, bring a list of questions to ask the interviewer. You could bring your laptop or tablet to show the interviewer what you have accomplished.
- Don't walk into a job interview with a coffee cup or bottle of soda or water or anything else to eat or drink. Don't chew gum.
- Your cell phone should be turned off and out of sight
- Introduce yourself to the receptionist, if there is one. Let him or her know who you are and who you are scheduled to meet with.
- It's appropriate to ask what the next step in the hiring process will be and when you might expect to hear.
- Following up with a thank you note is on the list of interview etiquette best practices

Unit 2 - Job, here I come!
Handout 70

➢ **Choose at least 5 questions from the list below to ask your partner. Offer any feedback that you consider necessary at the end.**

Possible open end questions for a mechanical engineering job

1. If you couldn't have this job, what job would you want to have?
2. If you could do any job in the world what would it be?
3. If you could, would you ban conference calls or check-in meetings?
4. If you could time travel to any period past or future, to what time would you go?
5. If you could go anywhere on a business trip, where would you go?
6. If you could successfully drill to the core of the Earth, would you?
7. If gravity disappeared, what is the first thing you would do?
8. If you had one superpower, what would it be, and why?
9. If there were no dress code police, what would you wear to work?
10. If you noticed that a co-worker made a mistake, how would you address it?
11. If someone on your team was slacking, what would you do?
12. If your supervisor asked you to do something that you disagreed with, but that was not immoral or illegal, what would you do?
13. If you retired tomorrow and wanted to start a wildly different second career, what would you do?
14. If you were stranded on a desert island with unlimited food and water, what three additional things would you want to have with you and why?
15. If you had a time machine, would you check out the future or the past? Why?

Feedback for your classmate:

Glossary

Ban: to eliminate
Drill: make a hole in the ground or any other hard surface.
Slacking: wasting time. Not doing one's job
Stranded: left without the means to move anywhere.

Unit 2 - Job, here I come!
Handout 71

- **Ask the following question to the classmate sitting in front of you. You will talk to several classmates. Write any feedback or comments that you consider important.**

1)Can you walk me through your résumé please?

Feedback for your classmates:

Unit 2 - Job, here I come!
Handout 71

- **Ask the following question to the classmate sitting in front of you. You will talk to several classmates. Write any feedback or comments that you consider important.**

2) Can you tell me about your work experience?

Feedback for your classmates:

Unit 2 - Job, here I come!
Handout 71

- **Ask the following question to the classmate sitting in front of you. You will talk to several classmates. Write any feedback or comments that you consider important.**

3) Why do you want to work for our company?

Feedback for your classmates

Unit 2 - Job, here I come!
Handout 71

- **Ask the following question to the classmate sitting in front of you. You will talk to several classmates. Write any feedback or comments that you consider important.**

4) If you could have any job in the world, which would that be? Why?

Feedback for your classmates:

Unit 2 - Job, here I come!
Handout 71

- **Ask the following question to the classmate sitting in front of you. You will talk to several classmates. Write any feedback or comments that you consider important.**

5) What is the best input that you can give to this company?

Feedback for your classmates:

Unit 2 - Job, here I come!
Handout 71

- **Ask the following question to the classmate sitting in front of you. You will talk to several classmates. Write any feedback or comments that you consider important.**

6)If budget was not an issue, how would you solve transportation problems in Costa Rica?

Feedback for your classmates:

Unit 2 - Job, here I come!
Handout 71 (Observer version)

- **Ask the following question to the classmate sitting in front of you. You will talk to several classmates. Write any feedback or comments that you consider important.**

1) Can you walk me through your résumé please?

2) Can you tell me about your work experience?

3) Why do you want to work for our company?

4) If you could have any job in the world, which would that be? Why?

5) What is the best input that you can give to this company?

6) If budget was not an issue, how would you solve transportation problems in Costa Rica?

Feedback for your classmates:

Unit 2 - Job, here I come!
Handout 72

Language Focus: Conditionals

First and Second Conditionals

They describe the result of something that might happen (in the present or future). Very useful to describe hypothetical situations.

For example:

- *If I could study anything I want, I would study rocket science.*
- *If I noticed that a coworker is slacking, I would definitely talk to him/her first.*
- *If I retire tomorrow, I will start my own business.*

	Conditional clause	Main clause
First conditional	**If** + Present Tense	**will + simple form verb/ present tense /** imperative
	e.g. If he is slacking, we will have to work without him.	
Second conditional	If + Past Tense	**would** + simple form verb
	e.g. If I became a manager, I would change the refrigeration process.	

➢ **Work in pairs and discuss the following situations. Make sure to use conditionals.**

1) If you have a leak in one of the pipes for the air conditioning system; what would you do?

2) If one of the gears for the assembling machine is creating friction; what would you do?

3) If one of the blades for a wind turbine shows a crack, what would you do?

Material 21
Unit 2 - Job, here I come!
Slips of paper

- Dress in a manner that is professionally appropriate to the position for which you are applying. Your suit should be comfortable and fit you well so that you look and act your best. Avoid loud colors and flashy ties. Clothing should be neat, clean and ironed.

- Make sure you have fresh breath. Brush your teeth before you leave for the interview, and don't eat before the interview. Don't smoke right before an interview.

- Interview suits should be simple and dark in color. Anything tight, bright, short, or sheer should absolutely be avoided.

- Keep your jewelry and hair accessories to a minimum, and stick to those that are not flashy, distracting, or shiny. One ring per hand is best.

- For English speaking countries, it is common to call people that you are meeting for the first time with a formal title followed by their last name, e.g. Mr. Smith or Ms. Gamboa. If they ask you to call them by their first name, then you can do so.

- While waiting and during the interview don't hunch your shoulders or tuck your chin into your chest. Avoid leaning forward. Sit with your back straight and your chest open—signs that you're confident and assertive.
- Shake it, don't break it. You're going to be shaking with your right hand, so prepare by arranging your belongings on your left side. Offer your hand with the palm slightly up so that your interviewer's hand covers yours. Handshake is acceptable for women as well.
- Holding a briefcase or handbag on your lap will make you seem as though you're trying to create a barrier around yourself. Put all your personal belonging next to you in a chair or in the floor.

- It's fine to sit about a 30cm away from the table so that your gestures are visible.
- Keep your hands over your lap. Don't cross your arms. If you need your hands to emphasize something, make sure they don't go above your shoulders. Don't put your hands behind your back and NEVER in your pockets.

- Respect personal space.
- At the end of the interview, gather your belongings calmly, rise smoothly, smile and nod your head.

- Bring extra copies of your resume along with a list of references to offer the interviewer. Also, bring a list of questions to ask the interviewer. You could bring your laptop or tablet to show the interviewer what you have accomplished.

- Don't walk into a job interview with a coffee cup or bottle of soda or water or anything else to eat or drink. Don't chew gum.

- Your cell phone should be turned off and out of sight.

- Introduce yourself to the receptionist, if there is one. Let him or her know who you are and who you are scheduled to meet with.

- It's appropriate to ask what the next step in the hiring process will be and when you might expect to hear.

- Following up with a thank you note is on the list of interview etiquette best practices.

Unit 2 - Job, here I come!
Instructor: Yannick Pilgrim
Assistant: Sánchez & Elizondo

Lesson Plan #17
Week 9 - Class 1
02/10/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will participate proactively in a job interview simulation while displaying cultural sensibility and knowledge of their own skills.

Specific Objectives: By the end of this lesson, Ss will:

1) Show understanding of open-ended questions that can be included in a mechanical engineering job interview by answering some examples.
2) Answer hypothetical mechanical engineering open-ended questions by properly using conditionals.
3) Identify useful language in an audio by writing phrases they could use in a mechanical engineering job interview.
4) Actively participate in a simulation of a short mechanical engineering job interview.
5) Discuss about their own performance in the main task by answering reflective questions.
6) Show understanding of controversial topics in a job interview by taking notes on suggested strategies to avoid them.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will remind Ss the objective for the week. Tr will point out the fact that this is an evaluation week and that today will be a rehearsal for the actual evaluation in the next lesson. As a continuation from last session, Tr will ask in open class: -What is an open end question? -Do you remember any them? -Why are they used in job interviews? An assistant teacher will display on the board 12 questions adapted from **Handout 70**. Ask for 3 or 4 volunteers who would like to answer one question. The volunteer will roll the dice and answers that question. Tr will provide immediate feedback if necessary.	S L R	**Useful language** *If I could... I would...* *If I were ....I would...* *If I had... I would...*		15 min Done by 5:15pm
2	**Pre-task 1** Tr will explain that there is a structure in English that helps to answer open end questions that refer to hypothetical situations:	S L R W	**Useful language** *If I could... I would...* *If I were ....I would...* *If I had... I would...*		15 min Done by 5:30pm

	Conditionals. Then, the Tr will explain 1st and 2nd conditionals on the board including function, structure and examples. Ss will work in pairs and receive **Handout 72**. They will orally practice answering hypothetical questions using conditionals.				
3	**Pre-task 2** Tr will remind Ss the importance of listening before, during and after a job interview. Then, Ss will be asked to listen to an audio of a job interview simulation (https://0.tqn.com/z/g/esl/library/media/audio/job_interview.mp3) twice. Ss will take notes on **Handout 73** and write useful phrases for the parts of a job interview written on the board. They will compare their answers with a partner. Assistant Trs will monitor closely and provide immediate feedback.	L S R W	**Vocabulary** Greetings Use formal titles Small talk Résumé information Work experience **Useful language** *I think we should definitely include…* *Most employers will ask for…* *Why did you write…under #X?*		15 min Done by 5:45pm
4	**Main Task** Tr will draw Ss attention to the fact that they prepare for an interview to	S L R W		**Cognitive** -Show confidence	35 min Done by 5:20pm

	perform better, but in a real job interview; they will always have to improvise. Tr will elicit some speaking strategies learned in class and write them on the board. Ss will be asked to switch pairs. Then, they will receive **Handout 74**. Ss will have 10 minutes to create their own script as an interviewer. Tr will remind Ss that they can look at previous Handouts to help them. Then, each Ss will have 10 minutes to interview their classmate using their own script. Ss will also be asked to take notes about any important feedback. At the end of **Handout 74,** Ss will find the Job Interview Simulation Rubric that will be applied to them in the next class.			-Read and look up -Take the attention focus where you want. -Cultural sensibility	
5	**Post-task 1** *Reporting* Tr will tell Ss the importance to review and reflect about one's work in order to improve it for next time. Ss will receive **Handout 75** and in pairs they will reflect on their performance for the main task	R S L W			10 min Done by 6:30pm

6	**Post-task 2** Ss will receive **Handout 76**. In open class, Tr will discuss questions that are not considered appropriate for a job interview in many countries. Tr will explain that is not under their control that an employer uses any of these topics; however, they can learn to: -Take the attention focus where they want. - Politely avoid the question. - Answer back with a question. Ss will be asked to take notes about how to react in case they encounter one of these questions in a job interview.	R S L W	**Useful language** Politics is important indeed, but I rather to focus on .... I am very reserved with my personal life, but as I said before... Is sexual orientation important in this company?		10 min Done by 6:40pm

Unit 2 - Job, here I come!
Handout 73

- **Listen to the audio of a job interview simulation. According to what you hear in this conversation, identify and write phrases that could be used for the following parts of a job interview. Also, add 2 other sections and questions learned in class that were not included in this conversation**

1. Greetings 2.Use formal titles
3.Small talk 4.Résumé information
5. Work experience 6._____
7._____

1. Good morning! Joe Anderson. It's a pleasure to meet you

Unit 2 - Job, here I come!
Handout 74

Create a script of your own to interview your classmate. Make sure that you include the following sections. Use the back of this page to record any useful feedback.

1. Greetings / introductions
2. Small talk?
3. Résumé information
4. Work experience
5. Personal proposal
6. Non-technical question
7. Farewell

Example:

1. *Hello, how are you? I'm _____*
2. *Very rainy day, isn't it?*
3. *Can you walk me through your résumé, please?*
4. *Tell me a little bit about your work experience.*
5. *Our company has this problem: _____. What would be your proposal to solve it?*
6. *If you could work for free, what would you work on?*
7. *Thanks for your answers. We will let you know the results for the selection process.*

My script:

1.
2.
3.
4.
5.
6.
7.

Feedback / questions / comments:

Job Interview Simulation Rubric (20%)			
Student's name:			
Category	**Description**	**Points assigned**	**Score**
Strategies	Student is able to use at least one speaking strategy studied in class	5 pts	
Communication	Student is able to clearly describe his/her own ideas and point of view.	5 pts	
Vocabulary	Student uses useful vocabulary studied in class in his/her interview.	5 pts	
Language use	Student is capable of using proper English structures and pronunciation.	3 pts	
Dress code/Body language/ Manners	Student shows understanding and performs on these subjects according to the tips given in class.	2 pts	
	Total	**20 pts**	
Comments			

Unit 2 - Job, here I come!
Handout 75

Monitoring your learning

- Discuss with your partner the following questions:

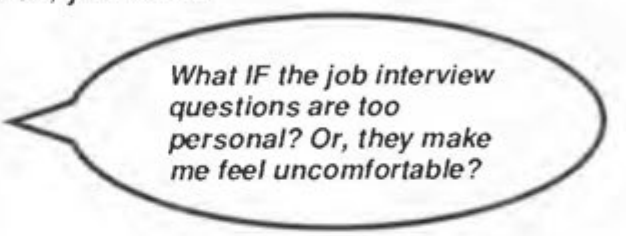
  - Were you able to show confidence and express your ideas clearly?
  - Which of the strategies learned in class did you use during the interview?
  - Do you think that you used technical vocabulary and correct English structures?
  - What do you think you can improve for next class?

Unit 2 - Job, here I come!
Handout 76

- Topics such as:
  - Civil status
  - Pregnancy
  - Sexual preference
  - Location
  - Religion
  - Politics

Should <u>not</u> be included in a job interview.

If you get a question about these topics, you could:



1. _____

2. _____

3. _____

Material 22
Unit 2 - Job, here I come!

1. If you could do any job in the world what would it be?
2. If you could time travel to any period past or future, to what time would you go?
3. If you could go anywhere on a business trip, where would you go?
4. If you could successfully drill to the core of the Earth, would you?
5. If gravity disappeared, what is the first thing you would do?
6. If you had one superpower, what would it be, and why?
7. If there were no dress code policy, what would you wear to work?
8. If someone on your team was slacking, what would you do?
9. If your supervisor asked you to do something that you disagreed with, but that was not immoral or illegal, what would you do?
10. If you retired tomorrow and wanted to start a wildly different second career, what would you do?
11. If you were stranded on a desert island with unlimited food and water, what three additional things would you want to have with you and why?
12. If you had a time machine, would you check out the future or the past? Why?

Unit 2 - Job, here I come!

Instructor: Yannick Pilgrim
Assistant: Sánchez & Elizondo

Lesson Plan #18
Week 9 - Class 2
04/10/2017

Goal: By the end of this unit, mechanical engineering students will be capable of effectively briefing their information for a specific job position and participating actively in a job interview.

General Objective: By the end of the week, the students will participate proactively in a job interview simulation while displaying cultural sensibility and knowledge of their own skills.

Specific Objectives: By the end of this lesson, Ss will:

1) Show understanding of the strategies taught in class by writing their names after reading their definition.
2) Analyze undesirable dress code and body language in a job interview by identifying these situations in pictures.
3) Answer possible questions for a mechanical engineering job interview by taking turns in their teams.
4) Actively participate in a simulation of a mechanical engineering job interview.
5) Discuss their own performance on the main task by answering reflective questions.
6) Complete a self-assessment form at home after listening to a recording of their own job interview simulation.

Comments:

Collect Peer Evaluation Form

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will remind Ss that today is the last day for Unit 2 – Job, here I come! Today Ss will be evaluated while participating in a job interview simulation. Before jumping into the evaluation, there are some important concepts to be remembered. Ss will be divided in groups of 4. Each team will receive **Handout 77** and choose its name using a vocabulary word previously taught in class, e.g. *The Venturimeters*. They will engage in a rally of questions that will review all strategies studied in Unit 2. The first team that turns in the final answer sheet with the correct answers will receive a prize. Tr will elicit responses from the class and correct them.	S L R W	**Useful language** *What is the answer for clue # x?* *I think it is....* *I remember that it is something like...* *What is the next clue?* *What does the next clue say?*		15 min Done by 5:15pm
2	**Pre-task 1** Tr will remind Ss the importance of what is not said, but matters.	S L R W	**Useful language** *I think s/he could /should change....*		15 min Done by 5:30pm

	Ss will work in pairs and receive **Handout 78**. Tr will display the pictures on the board. Ss will be asked to identify what is wrong with the pictures in the Handout and to discuss with their classmate how they could fix it looking towards a job interview. Tr will check the answers and provide good examples.		*I don't think that ... is appropriate for a job interview because....*		
3	**Pre-task 2** Tr will remind Ss that practice is the best way to get prepared for a job interview. Ss will work in groups of at least 3 people. They will be handed a set of questions in a bag. Each Ss will take turns to get one question out of the bag and choose someone in the group to direct the questions to. Tr will encourage Ss to give immediate feedback to their classmates when they consider it necessary.	L S			20 min Done by 5:50pm
4	**Main Task** Ss will be grouped in teams of 3 or 4 four members. Each Tr will be in charge of one team. Each Tr will have 3 (4) different job interview	S L R W			35 min Done by 5:25pm

	scripts. Each Ss gets to randomly choose the script that will be applied to them. While the Tr is interviewing one of the S, there will be another S from the same team who will co-evaluate the S being interviewed using the Peer Evaluation Rubric. Each Tr will interview every S on his/her team using the Job Interview Simulation Rubric. Ss will be asked to record their own interview. If the Ss does not have a proper device to do so, the Tr will record it and send it via email right after the class. Trs will collect the Peer Evaluation Rubrics at the end of the task.				
5	**Post-task 1** Tr will praise the students for the effort and improvement during Unit 2. S/he will also remind them the importance to take some time to review the work done. Ss will work in pairs and they will receive **Handout 79**. They will discuss some questions to reflect about their performance on the main task.	R S L			10 min Done by 6:35pm

6	**Post-task 2** Ss were asked to record their own interview during the main task. They will receive **Handout 80** and Tr will go over it in class. As homework, Ss will have to listen to their own interview and complete the Handout as self-evaluation. Ss will need to bring their self-evaluation for next class.	L			5 min Done by 6:40pm

Unit 2 - Job, here I come!
Handout 77

- **Rally - Together with your team, follow the clues in order to complete this chart:**

Team _____

Make sure ALL team members write and understand the answers

Clue # 1

Clue # 2

Clue # 3

Clue # 4

Clue # 5

Clue # 6

Clue # 7

Clue # 8

Clue # 9

Clue # 10

Unit 2 – Strategies Rally

Clue # 1	When you search for specific details in a text	Scanning
Clue # 2	When you look at what other people wrote so you can imitate it in your own writing	Modeling writing
Clue # 3	When you are aware and respect the different cultural backgrounds of people around you	Cultural sensibility / Cultural awareness
Clue # 4	When you practice speaking to yourself in front of a mirror	Think aloud
Clue # 5	When you write an outline for your speech or your main ideas	Creating a script
Clue # 6	Mention 2 things you could do when you don't know a difficult word that you need to say	-Describe it -Use synonyms or antonyms
Clue # 7	When you fixate your eyes and read and entire sentence and then look to the person and say what you wrote	Read and look up
Clue # 8	When you don't know the answer for a question and you deviate the attention	Take the focus/attention to where you want it to be.
Clue # 9	Mention 1 possible way to professionally say " I don't know" in a job interview	*I don't have the information at the moment*

Unit 2 - Job, here I come!
Handout 78

- **Take a look at the pictures displayed on the board. With your classmate, discuss how you would improve their dress code, body language and manners to have a successful job interview.**

1

2

3

4

5

6

Unit 2 - Job, here I come!
Handout 79

Monitoring your learning

- **Discuss with your partner the following questions:**

  - How did you feel participating in a job interview simulation? Do you think that real life job interviews are similar to this? Why?
  - Which of the strategies learned in class did you find more useful for this job interview simulation?
  - Were you able to show confidence and express your ideas clearly?
  - Do you think that you used technical vocabulary and correct English structures?

Unit 2 - Job, here I come!
Handout 80
Self Evaluation Rubric

Listen to the recording of your own job interview simulation and check mark under to number that you consider appropriate according to the scale below. This section will count as part of your final evaluation.

Your name: _____

5-Excellent **4-Very Good** 3- Average 2-Poor 1-Very Poor

	Your performance	1	2	3	4	5
1.	I used one or more strategies learned in class.					
2.	I was able to express my ideas and proposals clearly.					
3.	I used technical vocabulary studied in class.					
4.	My dress code, body language and manners were appropriate according to what was studied in class.					
	Total					

Material 23
Unit 2 - Job, here I come!
Main Task

Interview scripts for Trs

Script #1

1. Quite a rainy day, isn't it?
2. Can you tell me a little about yourself?
3. What subject did you enjoy the most in your major? Why?
4. Can you share your work experience with me?
5. If you could time travel to any period past or future, to what time would you go?
6. Our company wants to provide indigenous reserves with electricity. They are very far away. What would be your proposal?
7. Are you a religious person?

Script #2

1. Quite a hot day, isn't it?
2. Can you walk me through your résumé?
3. Tell me a little bit about your education?
4. What kind of work experience do you have?
5. If you had one superpower, what would it be, and why?
6. Our company needs to find an innovative and efficient way to provide A/C to a new hospital. The hospital has 3 floors and the most innovative A/C will win the contract. What would be your proposal?
7. You are very young, are you planning to have a family soon?

Script #3

1. Terrible traffic outside, right?
2. Can you tell me about your qualifications?
3. What subject did you enjoy the least in your major? Why?
4. Can you tell me about your mechanical engineering work experience?
5. If someone on your team was slacking, what would you do?
6. Our company needs to get a portable refrigeration system that can maintain -57ºC to store food for exportation. What would be your proposal?
7. National elections are coming up, who are you going to vote for?

Script #4

1. Terrible weather these days, right?
2. Can you tell me a little about yourself?
3. Do you consider that your education helped you in your Mechanical Engineering major?
4. Can you share your work experience with me?
5. If you had a time machine, would you check out the future or the past? Why?
6. Our company uses a biodigestor to produce electricity. The business has grown and now we need an alternative power source that doesn't increment the costs. What would be your proposal?
7. Do you feel attracted to people of your same sex?

Material 24
Unit 2 - Job, here I come!
Pre-task 2
List of possible questions for a mechanical engineering job interview:

1. What brings better memories for you: primary school or high school? Why?

2. When did you know that you wanted to be a mechanical engineer?

3. Which of your previous jobs was more challenging? Why?

4. Tell me about the most challenging engineering project that you have been involved with during the past year.

5. What engineering skills have you developed or improved upon during the past year?

6. Which software packages are you familiar with? What is the most interesting thing you know how to do with one of these packages?

7. Why did you apply for this particular job?

8. Describe a time when you received criticism from a supervisor or professor. How did you respond?

9. Describe your ideal boss.

10. Can you solve mechanical problems with your hands as well as your head?

11. Describe a typical day out in the field in your last or present job.

12. What do you get out of engineering that you couldn't get from any other kind of work?

13. Where do you see yourself ten years from now?

14. How would you describe your ideal working environment?

15. Are you a religious person?

16. You are very young, are you planning to have a family soon?

17. National elections are coming up, who are you going to vote for?

18. Do you feel attracted to people of your same sex?

Unit 3 – Going International! **Lesson Plan # 19**
Instructor: Fabian Elizondo
Assistant: Pilgrim & Sánchez **10/09/2017**

Goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the week, the students will be able to conduct machine related transactions via e-mail by using appropriate format, register, and functional language to request prices and information about machinery and parts.

Specific Objectives: By the end of this lesson, Ss will:

1) identify the main parts of a business e-mail in English.
2) identify communicative devices by matching them to their definitions.
3) differentiate between internal and external e-mail correspondence by comparing e-mail exchanges between coworkers and suppliers.
4) identify the main idea and reasons why an e-mail was written in order to respond appropriately.
5) write an e-mail to request information related to refrigeration parts by using the model writing strategy.
6) monitor their learning by evaluating their performance.
7) use *could* and *would* to make formal requests by completing an office dialogue between two coworkers at a refrigeration company.
8) practice intonation patterns while performing a role play between two coworkers at a refrigeration company.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Ss will be told that today's class will be about writing e-mails related to refrigeration transactions. Tr leads class discussion on the following questions. Tr elicits a few responses from the group. a) What do you know about refrigeration? b) Do you know any vocabulary in English related to refrigeration? Which words do you know? After discussion, Ss are told that they are going to play a memory game related to important parts of the refrigeration system. Tr divides Ss into pairs and lays 10 cards on each group's table. In their groups Ss are to flip the cards over two at a time. If the two cards match, Ss keep them face up. If not, Ss flip them over. Each member of the group takes a turn flipping the cards. After the group matches all the cards they go to Tr to get labels. (metering	R L S	**Vocabulary** *Compressor, condenser, evaporator, metering device, suction line filter* **Useful vocabulary** *I think refrigeration deals with X.* *I don't know much about X.* *I think this is the X.*	Activating Background Knowledge	10 min Done by 5:10 pm

	device, evaporator, compressor, and condenser) Ss stick the labels onto a diagram illustrating the refrigeration system (Materials I). The first group to complete the diagram correctly wins.				
2,3	**Pre-task I** Tr says to Ss: Now that you are experts in the refrigeration system, we are going to look at e-mails associated with transactions related to the refrigeration system. In groups of three, Ss discuss the following questions for 6 minutes. a) As a mechanical engineer, what type of e-mails do you think you would have to write? b) What are the different parts of a business e-mail? Tr elicits responses from each group about what they talked about. Tr explains that the transactions that Ss will focus on today are: requesting information from storage or suppliers and ordering parts from suppliers. On **Handout 81**, Tr encourages Ss to think about the format seen in Unit 2 Job, here I come! Ss will complete a matching activity. Ss must match	R S L W	**Useful language:** I think X is the definition for X I'm not sure about that. I think X looks like a better option for X. That looks good to me.	Advanced Organization	10 min Done by 5:20pm

	definitions to their corresponding sections of an e-mail. Tr projects an e-mail on the board and points out the different parts (Materials 2). After each group is finished, Tr provides Ss with the correct answers and responds to any questions at this point.				
4	**Pre-task II** Ss are told that they will now look at examples from different sections of an e-mail. Tr reminds Ss that they already know how to guess meaning from context and they are going to use this strategy for this activity. Tr sets up different stations. One station for the e-mail introduction, body, and closing. In groups of three, Ss are to go from station to station, spending five minutes at each station. At each station Ss read the examples and discuss the underlined words and phrases. Ss match the phrases to their corresponding purposes on **Handout 82**. After each group has visited all the stations, Tr elicits correct responses from Ss and takes some time to respond to any vocabulary questions.	R S L	**Vocabulary** Attach, I'm afraid you forgot. Could you please…. Would you please… I'm interested in… We would be grateful if… **Useful Language**: This sounds like it's X I don't know. I think it sounds more like X to me. That sounds good to me.	Guessing meaning from context	15 min Done by 5:35pm

4,5	**Pre-task III** Ss are told that in some cases there is a difference between internal and external e-mail correspondence. Tr says: Internal e-mail correspondence occurs between co-workers and external e-mail correspondence occurs between persons representing different organizations or interests. Tr asks class as a whole: What are some possible differences that might exist between internal and external e-mail correspondence? Tr divides the board into two categories: internal and external. Tr writes down Ss responses. In groups of three, Ss read the three e-mails on **Handout 83**. One e-mail is internal and two e-mails are external. Tr reminds Ss of the reading strategies learned in Unit 1 Getting it right! Ss read the e-mails and discuss whether e-mails are for internal or external use. On **Handout 83,** Ss answer comprehension questions based on each e-mail. On completion of the activity, Tr elicits correct responses from Ss.	R W S L	**Vocabulary:** Internal, external, in stock, unfortunately, warranty-warrantee Useful Language: It looks like an X e-mail because X Mary responded to Lisa with X We saw this one in handout X. It's X.	Identifying the main idea	15 min Done by 5:50pm

5	**Pre-task IV** In groups of three, students are to follow the instructions on **Handout 84** and fill in the gaps in an e-mail using a vocabulary bank containing useful phrases. After activity, Tr elicits correct answers from Ss and answers any questions about the vocabulary on the handout.	S L W R	**Useful Language:** I'm afraid that you forgot... Could you please... I would appreciate it if... I am writing... I look forward to...		10 min Done by 6:00pm
5	**Main Task** Ss are told that they will now write complete external and internal e-mails to request information and parts. Tr reminds Ss about the modelling writing strategy and urges Ss to use the examples seen in previous handouts. Ss work in pairs for this activity. They are given **Handout 85** containing the instructions for the main task. Ss are to work with their partner to write and respond to e-mails with the end goal of obtaining a much-needed part. Ss work with another pair and use the checklist on **Handout 85** to evaluate that group.	S L R W	**Vocabulary** Earliest convenience, reach-in freezer	Modelling Writing	25 min Done by 6:25pm
6	**Post-task I** *Planning:* With their partner, Ss discuss the evaluation. Ss talk about: a) What did we do well? b) What can we improve?	R W S L		Performance Evaluation	5 min Done by 6:30pm

	c) Is there anything that is still not clear? What do I need to ask the teacher? Reporting: Each group writes their answers on **Handout 85** and hands it in to the teacher for more feedback in the next class.				
6,7	**Language Focus** Tr tells Ss that the language learnt today is not only for e-mails. Tr tells Ss that they can use this language over the phone as well as for face-to-face interactions at the office. Ss are given **Handout 86** Ss are to complete a gap fill of a dialogue between two coworkers at the office. Pronunciation focus: Ss are to read dialogue in pairs practicing intonation patterns for polite requests.	R W S L	**Grammar** *Could and Would for polite requests.* **Pronunciation** Intonation patterns for polite requests.		10 mins Done by 6:40

Unit 3: Going International!

Handout 81

Instructions: Match the following definitions to their corresponding parts of a business email.

1. Subject line_____ a) explain a point or make a request using polite language.
2. Greeting_____ b) a polite goodbye that contains your name and contact info.
3. Body_____ c) an appropriate salutation to create a good impression.
4. Closing_____ d) a brief and accurate description of the topic.

Useful language

- I think X is the definition for X.
- I'm not sure about that. I think X looks like a better option for X
- That looks good to me.

Unit 3: Going International!

Handout 82A-Email language

Station 1

Read the following examples. Focus on the underlined phrases and try to identify what their functions are. Indicate their functions on your answer sheet.

a) **I am writing this letter for** a price quote on your compressors for industrial sized refrigerators.

b) **Could you please** provide me with a full product description?

c) **We would be grateful if you could** send us a replacement evaporator.

d) **I am interested in finding out** how long your product will take to arrive.

e) **We would appreciate it if you could** e-mail us a quotation per unit and also a quotation for bulk orders.

f) **I am afraid you forgot to attach** the product description in your last e-mail.

Unit 3: Going International!
Handout 82B-Email language

Station 2

Read the following examples. Focus on the underlined phrases and try to identify what their functions are. Indicate their functions on your answer sheet.

g) Please find the requested information regarding our compressors attached.

h) I am sending you the quote that you requested.

i) Thank you for any information that you can forward to us immediately.

j) If it is more convenient for you, please call me at +1506 555 555.

k) I would be happy to provide you with more information if necessary.

l) Would you please confirm with us as soon as possible?

Unit 3: Going International!

Handout 82C- Email language

Station 3

Read the following examples. Focus on the underlined phrases and try to identify what their functions are. Indicate their functions on your answer sheet.

m) Do not hesitate to contact us if you need further assistance.

n) I look forward to hearing from you.

o) Thanks for your cooperation.

p) In reply to your e-mail, here are the metering devices that we have that match the dimensions you requested.

q) Would you be able to send us your updated price list?

r) Thanks for your quick response.

Unit 3: Going International
Handout 82- Email language
Instructions: Put the sentences and phrases from each station into their corresponding categories.

Function	Phrases/Sentences
Requesting information	
Offering assistance	
Showing gratitude	
Politely clarifying an error	
Providing requested information	
Asking for a response	

Useful Language:

- This sounds like it's useful for providing requested information/asking for a response.
- I don't know. I think it sounds more like it is useful for X.
- That sounds good to me.

Unit 3: Going International!
Handout 83
Instructions: Read the following e-mails and determine whether they are for internal or external purposes.

E-mail A
To: lisab@reexperts.com
From: jstock@reexperts.com
Subject: Compressors Out of Stock

Dear Lisa,
Unfortunately we don't have any compressors in stock at the moment. Sorry I couldn't help you out.

Best,
John Stock
Stock Manager
Refrigeration Experts S.A.
(506) 555 5555 (ext 55)

Discuss the following questions with your group.
1) Do you think that the e-mail A was internal or external? Why?
2) What did Lisa request?
3) What does the term in stock mean?

Useful Language:
- This e-mail doesn't look too formal/informal to me.
- It seems as though she requested...
- I think it means...

E-mail B

To: lisab@reexperts.com
From: mhodge@avancto.com
Subject: Product information for A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor

Dear Mrs. Bamet,

Thank you for your interest in our product. Please find the requested information on the A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor attached. In the product description you will find the price and information regarding the product warranty. Do not hesitate to contact us if you need any further assistance.

Best Regards,
Mary Hodge
Sales Representative
Avancto Cooperations
Tel: (868) 777 777 777 (ext 77)

Discuss the following questions with your group.
1. Do you think this e-mail is internal or external? Why?
2. What did Lisa request?
3. How did Mary respond to Lisa?
4. Did you see any familiar phrases? Underline these phrases and discuss their functions in the e-mail.

Useful Language:
- It looks like an internal/external e-mail because X
- Mary responded to Lisa with _____
- We saw this one in handout 82. It's X.

E-mail C
To: lisab@reexperts.com
From: mhodge@avancto.com
Subject: Product information for A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor (CORRECTION)
Attachment: A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor

Dear Mrs. Barnet,
I sincerely apologize for not attaching the product information. Please find it attached in this e-mail. Thank you for your patience and please respond at your earliest convenience.

Best Regards,
Mary Hodge
Sales Representative
Avancto Cooperations
Tel: (868) 777 777 777 (ext 77)

Discuss the following questions with your group.
1. Why did Mary Hodge send the above e-mail?
2. Underline the useful expressions above and discuss their functions.

Unit 3: Going International!
Handout 84
Take a look at e-mail A from Handout 83 and imagine that you are Lisa Barnet writing to John Stock. Fill in the blanks with phrases from the bank below.

To: jstock@reexperts.com
From: lisab@reexperts.com
Subject: Request for Avanctor Compressor

Dear John,
Hope all is well with you. 1)_____ let me know if we have any Avanctor Compressors 2) _____? We need one ASAP.
Best,
Lisa Barnet
Mechanical Engineer
Refrigeration Experts
(506) 555 5555 (ext 56)

Now take a look at e-mail B from Handout 83. Imagine that you are Lisa Barnet writing to Mary Hodge. Fill in the blanks with phrases from the vocabulary bank.
To: mhodge@avancto.com
From: lisab@reexperts.com
Subject: Request product information for A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor
To Whom it May Concern

3) _____ this e-mail to request a price quote for your A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor. In addition to your quote, 4)_____ you could send us a full product description along with details of the warrantee. 5) _____ your reply.

Best Regards,

Lisa Barnet
Mechanical Engineer
Refrigeration Experts
(506) 555 5555 (ext 56)

Take a look at e-mail C from Handout 83. Fill in blanks for Lisa's e-mail to Mary.
To: mhodge@avancto.com
From: lisab@reexperts.com
Subject: Request product information for A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor

Dear Mrs.Hodge,

6) _____ your quick reply. However,
7) _____ the product description. I appreciate your assistance with this matter.

Sincerely,

Lisa Barnet

Mechanical Engineer
Refrigeration Experts
(506) 555 5555 (ext 56)

Vocabulary Bank:

I am afraid that you forgot	would you please	do we have
I am writing	thanks for	we need
in stock	I would appreciate it if	I look forward to
can you send	could you please	is it possible

Unit 3: Going International!
Handout 85

At Refrigerator Experts S.A. you are the mechanical engineer responsible for the maintenance of your products at various restaurants and bars in Costa Rica. When there is an issue with a refrigerator part that cannot be fixed you must first check to see if your company has a replacement part in their storage facility with John Stock. If the company does not have the part in stock, you must then contact the manufacturers directly. In this particular case the manufacturer is Avencto Corporation.

Situation

One of your top clients, Il Tomato, complained that the refrigerator is not working. After inspecting the unit, you realized that the problem is with the metering device. The metering device is beyond saving, so you must start the process of having it replaced. Complete the e-mail chain below. Remember to be as polite as possible. Also, keep in mind the difference between internal and external emails. Refer to previous handouts for helpful language.

1st Step: Writing to John Stock

To: jstock@reexperts.com
From: _____
Subject: _____

_____
_____
_____
_____
_____
_____
_____

_____

Mechanical Engineer
Refrigeration Experts
(506) 555 5555 (ext 56)

2nd Step: Reading John Stock's response and analyzing the situation.
To:_____
From: jstock@reexperts.com
Subject: Request for Avanctor Metering Device

Dear _____

Sorry to say, but we are all out of metering devices. I can offer you an old one that you could use in the meantime as a temporary replacement, but it doesn't have much more life in it. Let me know if you want me to send to you guys.

Best,

John Stock
Storage Manager
Refrigeration Experts
(506) 555 5555 (ext 55)

3rd Step: Responding to John Stock's offer
To: jstock@reexperts.com
From: _____
Subject: _____

_____
_____
_____
_____
_____

_____

Mechanical Engineer
Refrigeration Experts
(506) 555 5555 (ext 56)

4th Step: Looking for a more permanent solution with the manufacturer.
To: sales@avencto.com
From: _____
Subject: Request Product Information for A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft

_____
_____
_____
_____
_____
_____
_____

_____

Mechanical Engineer
Refrigeration Experts
(506) 555 5555 (ext 56)

5th Step: Reading and analyzing the manufacturer's response
To: _____
From: mhodge@avancto.com
Subject: Product information for A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor
Attachment:

Dear _____,

Thank you for your interest in our product. Please find the requested information on the A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft metering device attached. In the product description you will find the price and information regarding the product warranty. Do not hesitate to contact us if you need any further assistance.

Best Regards,
Mary Hodge
Sales Representative
Avancto Cooperations
Tel: (868) 777 777 777 (ext 77)

6th Step: Thanking the manufacturer for the information.
To: sales@avencto.com

From: _____

Subject: Request Product Information for A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft

_____
_____
_____
_____
_____
_____
_____

_____

Mechanical Engineer
Refrigeration Experts
(506) 555 5555 (ext 56)

Peer Evaluation

The following chart is to be filled out by a student-evaluator.

	Yes	No	Comments and Recommendations
Did the e-mail greet the reader appropriately?			
Was the purpose of the e-mail clear?			
Did the writer use polite language?			
Did the writer respond appropriately to e-mails?			
Did the writer close the e-mail appropriately?			

Self-evaluation

After reading the evaluation and comments from your classmates, please fill out the chart below with your partner.

Questions	Comments
What did we do well?	
What can we improve?	
What questions do I still need to ask the teacher about e-mail writing?	

Useful language:

- ✓ We **did/didn't do** well on X, Y, and Z.
- ✓ We can improve X because X.
- ✓ I still don't understand X. Do you?
  - o Yes, I do. What you have to do is X.
  - o No, I don't. Let's ask the teacher.

Unit 3: Going International!
Handout 86

Language Focus: Could and Would

Instructions: Individually, read the instructions on using *could* and *would*. Work in pairs when necessary.

Could and *Would* for Polite Requests

Instructions:

- ✓ Go back to **Handout 83** and take a look at the expressions containing *could* and *would*. What do you notice? What is the general idea of the expressions containing *could* and *would*? Look at the examples listed below.

1. Could you please provide me with a full product description?
2. Would you please confirm with us as soon as possible?

Function:

- ✓ *Could* and *would* have several functions in the English language, but for the examples above they serve to:
  a. make a request.
  b. address the reader/listener in a polite way.

Structure:

- ✓ could + you+ base form of verb + complement?
- ✓ would + you + base form of verb + complement?

***Hint**: Adding please after you makes your request even more polite.

Good to know:

Could and *would* are very similar for requests, but *would* is a bit more polite.

Sometimes waiting for e-mail responses can be time-consuming and counterproductive. If you really need something done quickly, a phone call or a face to face interaction are better alternatives.

Complete the telephone dialogue with appropriate phrases that contain *could* or *would* between Lisa Barnet and John Stock.

John: Hello, good morning. This is John Stock from Refrigeration Experts. How may I help you?

Lisa: Hey, John. It's Lisa. How's it going down there?

John: Oh hey, Lisa. What can I do for you?

Lisa: Well, we have an issue with one of our Avancto freezers. _____ you check to see if we have any suction line filters in storage?

John: No problem. _____ give me a second to pull the inventory up on the screen?

Lisa: Sure. Just give me some good news, John.

John: Sorry, Lisa. Looks like we're all out.

Lisa: I guess I'll have to call Avancto and order some.

John: If you're going to contact them, _____ you do me a huge favor?

Lisa: Certainly.

John: _____ you order three of their compressors? We don't have any in stock and they are burning out quickly.

Lisa: No problem. Just send me an e-mail confirming what you need.

John: Thanks, Lisa. Take care.

Lisa: Bye, John.

After completing the dialogue listen to your teachers read the dialogue. Pay special attention to their pronunciation and intonation. Now work with a partner and practice reading the dialogue between John Stock and Lisa Barnet.

The first time you read the dialogue you can only hum the words. Try to remember the intonation from your teachers.

Pronunciation Tip

Remember the letter **L** is silent in the pronunciation of *could* and *would*.

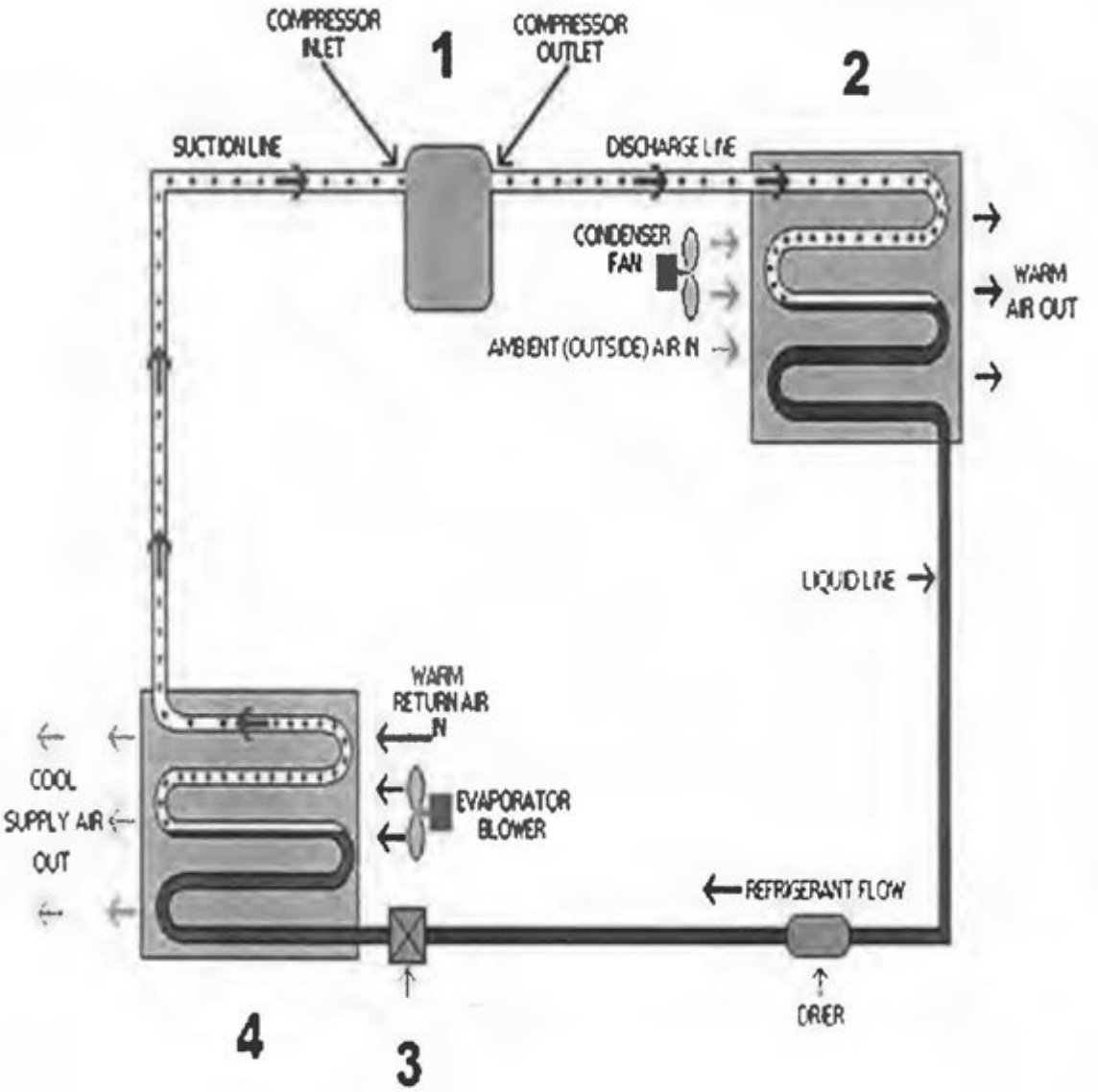
Material 21
To: lisab@reexperts.com
From: mhodge@avancto.com
Subject: Product information for A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor

Dear Mrs. Bamet,

Thank you for your interest in our product. Please find the requested information on the A-49F-HC 54" Solid Door Reach-In Freezer - 41.3 Cu. Ft Compressor attached. In the product description you will find the price and information regarding the product warranty. Do not hesitate to contact us if you need any further assistance.

Best Regards,
Mary Hodge
Sales Representative
Avancto Cooperations
Tel: (868) 777 777 777 (ext 77)

Unit 3
Materials 25
Class 19 Warm Up:



Material 26

EVAPORATOR

COMPRESSOR

METERING DEVICE

WATER INLET VALVE

SUCTION LINE FILTER

EVAPORATOR
COMPRESSOR
METERING DEVICE
SUCTION LINE FILTER
WATER INLET VALVE

Memory Game Instructions
Flip the cards over two at a time.
If the two cards match, keep them face up. If they do not match, flip them over.
Each member of the group takes a turn flipping the cards.
After matching all the cards go to get the labels from your teacher.
Correctly label the diagram at the front of the class.
Useful language:

- Where does this go?
- His looks like the _____.
- I don't think that goes there.

Unit 3 – Going International! Lesson Plan # 20
Instructor: Fabian Elizondo
Assistant: Pilgrim & Sánchez 11/10/2017

Goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the week, the students will be able to conduct machine related transactions via e-mail by using appropriate format, register, and functional language to request prices and information about machinery and parts.

Specific Objectives: By the end of this lesson, Ss will:

1) orally review useful e-mail expressions for ordering refrigeration parts by playing charades.
2) identify useful e-mail expressions and their functions by matching parts of sentences and questions.
3) manipulate sentences and questions by using the model writing strategy.
4) write an e-mail requesting refrigeration parts using the model writing strategy.
5) monitor their learning by evaluating their performance.
6) use *could* and *would* to make formal requests by completing an office dialogue between coworkers at a refrigeration company.
7) practice intonation patterns while performing a role play between coworkers at a refrigeration company.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will remind Ss that this week they are focusing on e-mails. Tr tells Ss that they are going to play a game of charades to review some of the phrases from last class. Tr divides the class into two teams. One member comes to the front of the class and is shown a phrase from last class. The student can use actions and only 10 words to describe the phrase. His/her classmates must guess the phrase. Tr projects the phrases from last class on the board (**material 1**) to help Ss guess.	R L S			15 min Done by 5:15 pm
2	**Pre-task I** Tr will tell Ss that in order for them to learn new vocabulary in English they have to see the words at least 15 times. So it's important to constantly review. Tr then writes the word **appreciate** on the board and asks **Alvaro** or **Martin** to pronounce it. Tr projects refrigeration system on the board and asks for a volunteer from last class to talk about the parts they learned.	R S L W	**Useful language:** Do you think these two go together? Yes, they work. No, that doesn't sound correct.		15 min Done by 5:30pm

	Tr divides the class into two groups. Each person gets one half of a sentence/question (Materials 3). Ss must find another Ss that can complete their sentence/question. After earch Ss finds their pair, they return the sheets to the Tr and the Tr distributes them again. The process is repeated 6 times.				
3	**Pre-task II** Tr projects correct answers for the previous activity on the board. Tr now says that Ss will practice model writing. Tr reviews what model writing is. Tr then gives Ss **Handout 87**, a list of sentences and questions. Ss work in pairs and are to write the part of the sentence that is in bold and change the second part of the sentence/question not in bold. Ss join another group and compare answers before Tr elicits a few responses from the class.	R S L W	**Vocabulary** Attach, I'm afraid you forgot. Could you please…. Would you please… I'm interested in… We would be grateful if… **Useful Language**: Does this look correct to you? Yes, it looks good. No, I think we need to change X.	Model Writing	15 min Done by 5:45pm

4	**Main Task** Ss are told that they will now write complete external and internal e-mails to request information and parts. Tr reminds Ss about the modelling writing strategy and urges Ss to use the examples seen in previous handouts. Ss work in pairs for this activity. They are given **Handout 86,** containing the instructions for the main task. Ss are to work with their partner to write and respond to e-mails with the end goal of obtaining a much-needed part. Ss work with another pair and use the checklist on **Handout 85** to evaluate that group.	S L R W	**Vocabulary** Earliest convenience, reach-in freezer	Modelling Writing	30 min Done by 6:15pm
5	**Post-task I** *Planning:* With their partner, Ss discuss the evaluation. Ss talk about: a) What did we do well? b) What can we improve? c) Is there anything that is still not clear? What do I need to ask the teacher? Reporting: Each group writes their answers on **Handout 85** and hands it in to the teacher for more feedback in the next class.	R W S L		Performance Evaluation	10 min Done by 6:25pm

6,7	**Language Focus** Tr tells Ss that the language learnt today is not only for e-mails. Tr tells Ss that they can use this language over the phone as well as for face-to-face interactions at the office. Ss are given **Handout 86** Ss are to complete a gap fill of a dialogue between two coworkers at the office. Pronunciation focus: Ss are to read dialogue in pairs practicing intonation patterns for polite requests.	R W S L	**Grammar** *Could and Would for polite requests.* **Pronunciation** Intonation patterns for polite requests.		10 mins Done by 6:35pm

Unit 3: Going International!
Handout 87

Use the model writing technique to complete the following sentences and questions. Copy the part of the sentence/question in **bold** and complete the second part of the sentence/question using the word in parenthesis. The first one is an example.

1) **Thank you for** sending me the product information. (confirm)
Thank you for *confirming the shipment.*

2) **We would be grateful if you could** contact us at your earliest convenience. (send)

3) **In reply to your e-mail, here** is the information you requested. (plans)

4) **I look forward to** hearing from you. (meet)

5) **Could you please** send me your resume? (contact)

6) **I would be happy to** help you. (find out)

7) **I am afraid you forgot to attach** the plans. (design for the prototype)

8) **Please find** the requested information **attached**. (proposal)

Material 27
Unit 3- Going International!
Class 20 Warm up

Function	Phrases/Sentences
Requesting information	I am writing this letter for We would be grateful if you could I am interested in finding out Thank you for any information that you can forward to us immediately. Could you please Would you be able to
Offering assistance	If it is more convenient for you, please call me at I would be happy to Do not hesitate to
Showing gratitude	Thanks for your cooperation Thanks for your quick response.
Politely clarifying an error	I am afraid you forgot to attach
Providing requested information	Please find the requested information I am sending you In reply to your e-mail, here are
Asking for a response	Could you please We would appreciate it if you could Would you please confirm I look forward to hearing from you

Material 28
Unit 3-Going International
Pre-task 1

I LOOK FORWARD TO HEARING FROM YOU

IF IT IS MORE CONVENIENT, PLEASE CALL ME AT (506) 7443-3456

PLEASE FIND THE REQUESTED INFORMATION ATTACHED

I AM AFRAID YOU FORGOT TO ATTACH THE SPREADSHEET

COULD YOU PLEASE SEND ME THE PRODUCT INFORMATION

DO NOT HESITATE TO CONTACT ME

THANKS FOR YOUR QUICK RESPONSE

Unit 3: Going International! **Lesson Plan: #21**
Instructor: Yannick Pilgrim
Assistants: Elizondo and Sanchez **18/10/2017**

Goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the lesson, the students will be able to coordinate site visits and meetings via e-mail by using appropriate format, register, and functional language.

Specific Objectives: By the end of this lesson, the Ss will:

1. identify useful phrases for scheduling events via e-mail by unscrambling them.
2. correctly categorize phrases for scheduling events via e-mail.
3. identify the main idea and reasons why an e-mail was written in order to respond appropriately.
4. write concise e-mails scheduling visits and meetings related to refrigeration
5. reject meeting time proposals by politely offering an alternative date and time to clients.
6. monitor their learning by evaluating their performance.
7. express their opinions on the use of real-life simulations as assessment tools in this course by completing a survey

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will welcome Ss and remind them that they are working on e-mails. Tr will say that this is an evaluation week. Tr divides the class into groups of three and explains that Ss will participate in a competition. Each group receives 5 envelopes containing parts of sentences that they must unscramble. The group that correctly unscrambles their sentences the fastest wins.	S L R W		Activating background knowledge Recycling Vocabulary	10 min Done by 5:10pm
2	**Pre-task I** Tr says to Ss: Do you think that Costa Ricans are good/bad at scheduling events? Tr elicits at least four responses and asks Ss to justify their responses. Tr divides Ss into groups of 3 and gives Ss **Handout 88**, a list of useful phrases related to scheduling meetings. Ss have to put the sentences and questions into the respective categories	R S L	**Vocabulary** Available, appointment, schedule **Useful language:** Where do you think X goes? Where does X belong? I think X goes into X. I think we can use X for X.	Advanced Organization	15 min Done by 5:25 pm

	of Asking to meet, Responding to an invitation, and Cancelling a meeting. Tr elicits responses from Ss and reviews pronunciation of difficult words.				
5	**Pre-task II** Tr tells Ss that this language can be used for e-mails and also for face to face interactions as well. Ss are to work in pairs to complete the first part of **Handout 89**, a matching activity. After 5 minutes Tr will elicit answers from the group. Tr then directs Ss's attention to the calendar on the other side of **Handout 89**. Tr writes 5 work-related events on the board and reviews the vocabulary for each. Each Ss chooses 4 events and adds them to their calendar. Ss must also add two personal events to their calendar. Tr sets up class as two circles. Half the class sits in the outer circle and half the class sits in the inner circle. Ss in the inner circle start by trying to schedule a meeting or a site visit. Ss use one of the phrases from **Handout 88 or 89**. Ss in the outer circle respond according to their availability. Ss on the outer circle can also suggest meeting	S L R	**Vocabulary** Performance Appraisal Interdepartmetal Meeting Site Visit **Useful Language:** Phrases from Handout 88	Guessing meaning from context	20 min Done by 5:45pm

	times. After Ss agree on a time they must add the new event to their calendar. After 1:30min Ss in the inner circle rotate. The procedure is repeated for 6 rotations.				
2	**Pre-task III** Tr reminds Ss of the importance of analyzing different sources of input. Tr tells Ss that good learners are constantly looking at structures and format as they try to find out functions. Ss receive **Handout 90**, an e-mail chain coordinating a site visit. In groups of 3, Ss answer questions about the e-mail's format and structure. On the same handout Ss will identify different phrases in the e-mail that correspond to a specific function. Tr will elicit answers from Ss.	S L R W	**Vocabulary:** Freezer, supplier, associate, to house **Useful Language:** Handout 88, 89 The word X implies that they have spoken before. The phrase X is similar in meaning. We can substitute this phrase for X. Another way to say X is X.	**Cognitive:** Identifying the main idea	15min Done by 6:00pm
4,5,6	**Main Task** Ss are told that they will now set up meetings via e-mail. Ss follow the instructions given in **Handout 91**. Ss work in pairs and write an e-mail chain. Ss may use **Handout 90** as a model. Ss will create the e-mail chain based on the availability shown on the calendars they created in **Handout 89**.		**Vocabulary:** Compressor, evaporator, condenser, suction line, discharge line, metering device. **Useful language:** Handouts 88,89,90	**Cognitive:** Identifying the main idea, Model Writing **Metacognitive:** Performance evaluation	25 min Done by 6:25pm

	One of the Ss switch groups and evaluate another group's e-mail chain by using the criteria in **Handout 91**.				
6	**Post-task I** *Planning:* With their partner, Ss discuss their evaluations of each other. a) What did we do well? b) What can we improve? c) Do I feel prepared to coordinate a meeting/site visit? What do I need to ask the teacher? Reporting: Each group writes their answers on **Handout 92** and hands it in to the teacher for more feedback in the next class.	S W R L	**Useful Language:** We **did/didn't do** well on X, Y, and Z. We can improve X because X. I still don't understand X. Do you? Yes, I do. What you have to do is X. No, I don't. Let's ask the teacher.	**Metacognitive:** Performance Evaluation	10 min Done by 6:35pm
7	**Language Focus** Tr will ask Ss to think back on previous evaluations and complete a survey based on their experiences, Instrument 4.	R W			10 min Done by 6:45pm

Unit 3: Going International!
Handout 88

Instructions: *Work with a partner and put the sentences and questions below into their respective categories. Put the corresponding letters in the table below.*

A) I am very sorry, but something urgent has come up and I can't make our meeting.

B) Are you available at 3:30pm on Friday the 17th?

C) Can we meet on October 27th to discuss the plan for December?

D) Yes, Thursday would be perfect.

E) I am afraid I am not available on Monday. Can we meet on Tuesday instead?

F) Is Wednesday the 8th convenient for you?

G) Unfortunately, I have some urgent matters to attend to on that day. Are you available on the 19th instead?

H) Monday suits me.

I) Wednesday is a difficult day for me. Would it be possible to meet on Thursday?

J) Would you be available tomorrow at 11am for a meeting?

K) Is next Monday okay for you?

L) I am afraid I have to cancel our meeting on Thursday.

M) I apologize, but I will be unable to keep our appointment for tomorrow afternoon.

Asking to meet	Saying YES to an invitation	Cancelling a meeting	Offering an alternative time or day

Unit 3: Going International!
Handout 89

Instructions: *Match the following sentences and questions to their appropriate responses. Indicate your response by writing the letter on the blank spaces.*

1. Can we meet on Wednesday the 9th to discuss the plan for December?_____
2. I apologize, but I will be unable to keep our appointment for tomorrow afternoon. _____
3. Are you available at 3:30pm on Friday the 17th?_____
4. Wednesday is a difficult day for me. Would it be possible to meet on Thursday?_____
5. Would you be available tomorrow at 11 am for a meeting? _____

A) Thursday is a difficult day for me. Is Friday convenient for you?

B) Yes, that day suits me.

C) I am afraid I am not available on Wednesday. Can we meet on Tuesday instead?

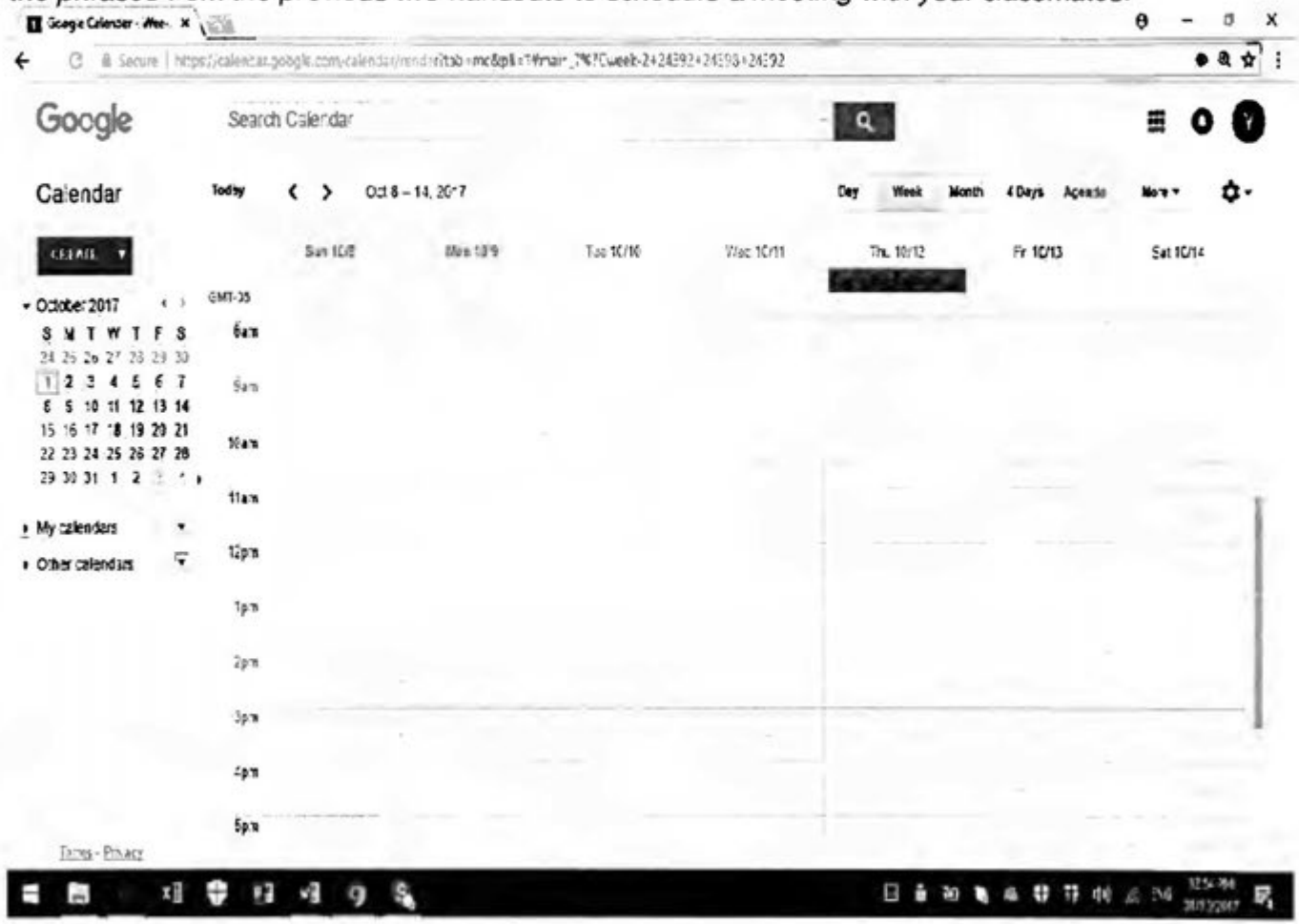
D) Yes, tomorrow would be perfect.

E) Please, let me know a date and time that better suits you.

Scheduling Appointments

Choose four events from the board to put into the calendar. Add one more event (work-related or personal) to your calendar.

Now use the phrases from the previous two handouts to schedule a meeting with your classmates.



Handout 90
Please read the following e-mail chain between Jose Vega, an engineer at refrigeration Experts and JeanCarlo Vargas, store manager at il Tomato.

E-mail A
To: jvega@reexperts.com
From: jeancarlov@iltomato.com
Subject: Malfunctioning Compressor

Dear Mr. Vega,

I am writing to inform you that we are still having problems with our main freezer. We are in need of an urgent solution because this freezer houses most of the meat that we use in our restaurant. Would you be available tomorrow morning? I think it would be a good idea if you could come and take a look at it. I believe that it might be a malfunctioning compressor. Please confirm if you will be able to make it.

Best Regards,
JeanCarlo Vargas
Store Manager
Il Tomato Restaurant
Tel: (506) 689 777 777 (ext 24)

E-mail B
To: jeancarlov@iltomato.com
From: jvega@reexperts.com
Subject: Compressor

Dear Mr. Vargas,

Tomorrow morning is difficult for me. Would it be possible to meet tomorrow at 1pm instead? Hopefully it's not the compressor.

Best Regards,
Jose Vega
Engineer
Refrigeration Experts
Tel: (506) 701 866 567 (ext 70)

E-mail C

To: jvega@reexperts.com
From: jeancarlov@iltomato.com
Subject: Malfunctioning Compressor

Dear Mr. Vargas,

Tomorrow at 1pm suits me. I'll put it in my calendar.

Best Regards,
Jean Carlo Vargas
Store Manager
Il Tomato Restaurant
Tel: (506) 689 777 777 (ext 24)

E-mail D

To: jeancarlov@iltomato.com
From: jvega@reexperts.com
Subject: Compressor

Dear Mr. Vargas,

Unfortunately I am unable to keep our 1pm appointment. I am stuck in traffic in Alajuela and don't think that I can make it before 2pm. Is that okay for you? I apologize for the inconvenience.

Best Regards,
Jose Vega
Engineer
Refrigeration Experts
Tel: (506) 701 866 567 (ext 70)

E-mail E
To: jvega@reexperts.com
From: jeancarlov@iltomato.com
Subject: Malfunctioning Compressor

Dear Mr. Vargas,

I have a meeting at 2pm with one of our suppliers, but my associate, Jonathan Pacheco, will be able to attend you and take you to see the freezer.

Best Regards,
JeanCarlo Vargas
Store Manager
Il Tomato Restaurant
Tel: (506) 689 777 777 (ext 24)

Handout 90
Answer the following questions based on the e-mail chain above.
1) Based on e-mail A, do you think this is the first time that Mr. Vargas has contacted Mr. Vega? Which word in the opening sentence of e-mail A helped you answer this question?

_____
_____

2) What is the purpose of e-mail B from Mr. Vega?

_____

3) Which phrase in e-mail C from Mr. Vargas means the same as ***that works for me***?

_____

4) What is Mr. Vega's reason for missing the 1pm appointment in e-mail D?

_____

5) Which phrase in e-mail D means the same as ***I am sorry for changing plans at the last minute***?

Unit 3: Going International!
Handout 91

Work with your partner to create an e-mail chain similar to the one on Handout 90. Choose a refrigeration problem and imagine that one of you is the engineer and the other is the client. Use the paper provided.

Your e-mail chain must include the following:

A) An initial e-mail from the client stating the problem and requesting a meeting.
B) A response from the engineer to the initial e-mail asking for an alternative meeting time.
C) An e-mail from the client confirming that the time and date work.
D) An e-mail from the engineer asking to reschedule the meeting/visit.
E) An e-mail from the client confirming that the new time works.

The following rubric will be used to evaluate the e-mail task.

Categories	1	2	3	4
Conventions	The writer disregards key e-mail conventions.	The writer follows some of the key conventions but disregards a few.	The writer follows all key conventions but sometimes does not use them correctly.	The write follows all key e-mail conventions correctly.
Language Use/Vocabulary	The writer does not use appropriate language for scheduling meetings.	The writer inconsistently uses appropriate language for scheduling. The reader gets the message but the writer's language is impolite.	The writer appropriate language for scheduling. The e-mail sounds polite but a little unprofessional.	The writer consistently uses appropriate language for scheduling and maintains a polite and professional tone throughout the e-mail.
Spelling and Grammar	Spelling and grammatical mistakes prevent the reader from understanding the writer's e-mail.	Some spelling and grammatical mistakes but the reader can understand the writer's message with some effort.	Minimal spelling and grammatical mistakes. These mistakes do not affect the meaning.	The e-mail is free of spelling and grammatical mistakes.
Purpose	The purpose of the e-mail is not clear to the reader.	The purpose of the e-mail is somewhat clear but the reader must make an effort to get the writers intention.	The purpose of the e-mail is clear. The reader may have to reread the e-mail to confirm.	The purpose of the e-mail is very clear and the reader can easily identify the main idea.

Conventions:_____ Spelling/Grammar:_____ Language Use:_____
Purpose:_____
Total:_____

Unit 3: Going International
Handout 91

A

To: _____

From: _____

Subject: _____

_____

_____

_____

_____

B

To: _____

From: _____

Subject: _____

C

To: _____

From: _____

Subject: _____

_____

_____

_____

_____

D

To: _____

From: _____

Subject: _____

E

To: _____

From: _____

Subject: _____

Unit 3: Going International
Handout 92

Self-evaluation

After reading the evaluation and comments from your classmates, please fill out the chart below with your partner.

Questions	Comments
What did we do well?	
What can we improve?	
Do I feel confident in my ability to schedule a meeting? What do I still need to ask the teacher?	

Useful Language:

- We **did/didn't do** well on X, Y, and Z.
- We can improve X because X.
- I still **don't understand** X. Do you?
    - Yes, I do. What you have to do is X.
    - No, I don't. Let's ask the teacher.

Material 29
Main task

Evaporator Problem	Suction Line Problem
Metering Device Problem	Condenser Problem
Compressor Problem	Discharge Line Problem

Materials 30
CAN WE MEET ON OCTOBER 27TH TO DISCUSS THE PLAN FOR DECEMBER?

WOULD YOU BE AVAILABLE TOMORROW AT 11AM
FOR A MEETING?

UNFORTUNATELY, I HAVE SOME URGENT MATTERS
TO ATTEND TO ON THAT DAY.

YES, THURSDAY
WOULD BE PERFECT.

I APOLOGIZE BUT I WILL BE UNABLE TO KEEP OUR APPOINTMENT FOR TOMORROW AFTERNOON.

Unit 3: Going International! **Class #22**
Instructor: Andrea Sánchez V.
Assistants: Elizondo and Pilgrim **23/10/2017**

Goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the week, students will be able to present new projects as well as project updates about advancements using appropriate structures and functional language.

Specific Objectives: By the end of this lesson, Ss will:
18. Define parts of the refrigeration system by completing an information gap task.
19. Identify the characteristics of each section of a presentation by categorizing descriptions.
20. Show comprehension of phrases associated with the different sections of a presentation by identifying the phrases they hear.
21. Show their understanding of how a presentation is organized by unscramble paragraphs to create a cohesive presentation for an interdepartmental meeting.
22. Give a brief presentation providing updates on a refrigeration problem.
23. Monitor their understanding by completing a checklist.
7. Correctly use the present perfect to talk about updates.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Ss receive a card from the Tr as they enter the class. Each card reads one of the following: condenser, compressor, suction line, metering device, refrigerant flow, and evaporator. Ss are to make groups (max. 3 per group) based on the cards they have. Condenser, compressor, and suction line groups receive **Handout 92A** and refrigerant flow, metering device, and evaporator receive **Handout 92B**, an information gap sheet. Ss mingle with classmates who are not in their group and ask for information to complete their sheet.	R L S W	**Vocabulary** *Condenser, compressor, suction line, metering device, valve, refrigerant flow, evaporator*		10 minutes Done by 5:10pm

2	**Pre-task 1** Tr says: Ss work in the same groups from the warm-up. Ss discuss the following three questions as a group: "What usually happens in the opening/body/closing of a presentation?" T gets a quick consensus from each of the groups. After the discussion, each group receives a packet with 10 cards, Handout 93. Ss work together to put each card into the correct category (opening, body, closing). Tr gives each group 3 boxes, one for each category. One S is responsible for reading the card while the other Ss must listen and decide which box the card belongs to. When the Ss decide, the S responsible for reading the card must crumple up the card and shoot it into the appropriate box. The group that finishes the fastest wins.	S R L	***Vocabulary*** **Useful language:** In the opening/body/closing of the presentation the speaker usually.... **Useful language (Handout II)** I think this goes here .... That (doesn't) look(s) good to me....	Advanced organization Monitoring leaning process	10 minutes Done by 5:20pm

	Tr asks Ss what else they think could be added to each category.				
3	**Pre-task II** Ss receive a **Handout 94**, a collection of useful phrases for presentations. Ss work in new groups of three to discuss which phrases they like, which phrases they didn't like, which ones were new to them, and which ones they already knew. Tr reviews vocabulary and then tells Ss that they are going to do a listening activity. Tr explains that Ss are going to place a tick next to the 6 phrases that they hear. Tr will play the recording twice. After listening to the recording twice, Tr will elicit the correct responses from Ss.	R S L	**Vocabulary** Overview, recap, wrap up. (*See phrases in Handout 95*) **Useful Language** I would use X because X I've never heard X before		15 minutes Done by 5:35pm

2,3,4	**Pre-task III** Ss will work in groups of three for **Handout 95**. Ss discuss the parts of a presentation on metering devices and designate each group of sentences to a specific category (opening, body, closing) After discussing sentences Tr clarifies any vocabulary questions Ss might have. After discussing sentences Ss work together to put the sentences together to create a cohesive presentation. Tr then plays an audio of the complete presentation so that Ss can check their answers. Tr provides feedback about the phrases that show the logical order of a presentation.	R S L	**Vocabulary** Come up with, burn out, in house, orifice, no longer have to... with regards to... in the process of... let's start by... that brings us to the end... if I can just summarize the main points... **Useful Language** This looks like part of the opening/body/closing because... I think this goes here .... That (doesn't) look(s) good to me....	Skimming & Scanning Advanced Organization Guessing meaning from context	15 minutes Done by 5:55pm

5,6,7	**Main Task** Each groups receives cards containing the instructions. Each member of the group gets a brief description of the topic of the presentation, and the relevant information. For 15 minutes Ss individually prepare a presentation based on the information card they receive. Ss should use the language available from the pre-task activities. Ss pair up with Ss from another group and share their presentation. While one S presents the other listens and uses **Handout 96** to evaluate the presenter.	R W S L	***Vocabulary*** Wax, build up, sludge, get rid of. Useful Language (*See phrases in Handout 94*)	Advanced organization Performance evaluation	30 minutes Done by 6:25pm

6	**Post-task 1** *Planning* Ss are told to get with another pair of students and are to discuss their presentations. Ss will discuss: "What went well?" "What they need to improve?" "Why they decided to include the language they chose?" *Reporting* Ss report back to the class.	R S L		Performance evaluation	10 minutes Done by 6:35pm
7	**Post-task 2** Ss are to follow the instructions on **Handout 97**	R S W L	**Grammar** *Present Perfect for giving updates:* We have chosen a replacement for our current metering device. **Pronunciation** Contractions review: I've, we've, he's, she's they've		10 minutes Done by 6:45pm

Unit 3: Going International
Handout 92A
Instructions: Talk to someone from another group to get the missing information.

Definition	Device
A1:	B1: Metering Device
A2: The device responsible for getting rid of heat extracted from the unit to the outside air.	B2:
A3:	B3: Evaporator
A4: The device that controls the flow of refrigerant.	B4:
A5:	B5: Refrigerant
A6: The section of piping located between the evaporator coil and the condenser coil.	B6:

Useful language:

Do you have letter#?	**I do. It says_____**
	Sorry, I don't have letter#
What do you have for letter#?	**Letter# says _____**

Unit 3: Going International!
Handout 92B

Instructions: Talk to someone who is not in your group to get the missing information.

Definition	Device
A1: The device responsible for feeding the proper amount of refrigerant to the evaporator coil.	B1:
A2:	B2: Condenser
A3: The device responsible for transferring heat from the substance to be cooled to the refrigerant.	B3:
A4:	B4: Compressor
A5: This compound can be a liquid or gas that absorbs heat from the environment.	B5:
A6:	B6: Suction Line

Useful language:

Do you have letter#?	I do. It says_____
	Sorry, I don't have letter#
What do you have for letter#?	Letter# says _____

Unit 3: Going International!
Handout 93
Instructions: Work with your group to put the statements into the correct categories.

Opening

Make the introduction relevant to the listener's goals, values and needs.
Ask questions to stimulate thinking.
Make an inspirational statement.
State the purpose of the presentation.

Body

Present problems/solutions.
Elaborate on progress.
Give explanations and justifications for decisions made.

Closing

Review main points.
Invite questions and concems.
Thank the audience for listening.

Unit 3: Going international!
Handout 94

The following is a collection of useful phrases that you can use for presentations. Take a few moments to review these phrases with your group. Now listen to the audios and place a check mark (√) next to the phrases you hear. You will hear ONE phrase per category.

Introducing your presentation

- The purpose of today's presentation is to...
- The purpose of my presentation today is to...
- In today's presentation I'd like to...show you.../explain to you how...
- In today's presentation I'm hoping to... give you an update on.../give you an overview of...
- In today's presentation I'm planning to... look at.../explain...

Giving the outline

- In today's presentation I'm hoping to cover three points:
- Firstly..., after that we will look at..., and finally I'll...
- In today's presentation I'd like to cover three points:
- Firstly,...secondly..., and finally...

Explaining that there will be time at the end for questions

- If there are any questions you'd like to ask, please leave them until the end, when I'll do my best to answer them.

- If you have any questions you'd like to ask, please leave them until the end, when I'll be happy to answer them.

Starting the presentation

- To begin with ... .
- To start with ... .
- Let's start/begin by looking at ... .
- I'd like to start by looking at ... .
- Let's start with / start by looking at ...

Closing a section of the presentation

- So, that concludes the (title of the section)
- So, that's an overview of....
- I think that just about covers (title of the section)

Beginning a new section of the presentation

- Now let's move on to...
- Now let's take a look at...
- Now I'd like to move on to...
- Next I'd like to look at...
- Moving on to the next section, let's take a look at...

Concluding the presentation

- Well, that brings us to the end of the final section. Now, I'd like to summarise by ...
- That brings us to the end of the final section. Now, if I can just summarise the main points again.
- That concludes my presentation. Now, if I can just summarise the main points.
- That's an overview of ... Now, just to summarise, let's quickly look at the main points again.

Retrieved from: http://speakspeak.com/resources/general-english-vocabulary/presentation-language-phrases

Unit 3: Going International!
Handout 95
*Instructions: Read the following parts of a presentation. With your group, organize the sentences below into a cohesive presentation. Be sure to pay attention to the phrases seen in previous handouts. Hint: The phrases in **bold** serve as clues.*

A) We initially thought that the problem with the refrigerant flow was due to foreign material in the orifice. However, after a thorough check we realized the problem came as a result of a manufacturer's defect in the valve ____6___

B) Let's start by talking about the metering device that we are currently using and the problems we have with it._____

C) That brings us to the end of the presentation. **Now, if I can just summarize the main points**. We've decided to discontinue the use of our current metering device because of a manufacturer's defect. We've replaced it with our own device. We also are in the process of coming up with our own compressor so that we can replace the one we currently have._____

D) **The purpose of today's presentation is to update** everyone on the advancements we have made with regards to finding an alternative metering device._____

E) By having our own in-house device we no longer have to rely on external checks and explanations. We'll provide another update after three months of using our new device.____8____

F) **That concludes our update on** the new metering device. **Now let's take a look at** what we are currently working on._____

G) We've begun testing a new compressor to replace the existing one that we have. Our current compressor burns out very quickly and we have to order replacements all the time. We have made some progress with our tests but we are still hoping to come up with some more cost-effective alternatives. In next month's meeting we will have an update for you.____10____

H) **If anyone has any questions, I'll do my best to answer them.**_____

I) We've decided to have our current metering device replaced. We've designed a new device that regulates the refrigerant flow much more efficiently. Over the past few weeks we've trained all our technicians in how to properly monitor the device and how to provide maintenance when necessary..._____

*J) **If you have any questions you'd like to ask, please leave them until the end, when I'll be happy to answer them.***_____

K) **In today's presentation I'd like to cover three points.** Firstly, we'll look at why we chose the metering device. Then, we'll talk about how this device will affect the overall refrigeration system. And finally, we'll introduce our new project._____

L) The device causes problems because it restricts refrigerant flow._____5_____

Unit 3: Going international! **Speak Up!**
Handout 96

Instructions: Prepare a presentation based on the information on the card you received. You will have 15 minutes to prepare your presentation. Use the language from Handouts 94 and 95 to help you.

After you have prepared your presentation, partner up with someone from another group. Do not partner up with someone who has the same situation as you. Share your presentation with your partner. While you present, your partner will evaluate your presentation.

Situation A: You are representing the engineering department at the quarterly interdepartmental meeting. At these meetings each department gives a very brief presentation about projects they have worked on or are currently working on. Use **Handout 95** as a guide.

Update
Problems with metering device: Wax build up because the wrong oil was used in the system. As a result the refrigerant flow was restricted.

Decision
Changed the brand of oil being used to a more expensive brand (Shine On)

Reason for decision
In the long run the company would save money on repairs as well as losses from damaged products.

Introduce new project
Coming up with a solution for the excessive moisture in the system.

Unit 3: Going international! **Speak Up!**
Handout 96

Instructions: Prepare a presentation based on the information on the card you received. You will have 15 minutes to prepare your presentation. Use the language from handouts 94 and 95 to help you.

After you have prepared your presentation, partner up with someone from another group. Do not partner up with someone who has the same situation as you. Share your presentation with your partner. While you present, your partner will evaluate your presentation.

Situation B: You are representing the engineering department at the quarterly interdepartmental meeting. At these meetings each department gives a very brief presentation about projects they have worked on or are currently working on. Use **Handout 95** as a guide.

Update
Problems with metering device: Sludge from the by-products of compressor burnout is restricting the refrigerant flow.

Decision
Trained the technicians to do more regular checks to get rid of sludge build up.

Reason for decision
We are looking into finding a new supplier of compressors so the regular checks by technicians are only a temporary solution.

Introduce new project
Coming up with a solution for the excessive oil in the system.

Handout 96

Instructions: Use the chart below to evaluate your classmate's presentation. Justify your answers as much as you can.

	Yes	No	Comments
Did the opening introduce the topic of the presentation clearly?			
Were the problems/solutions clearly stated?			
Were the transitions between sections of the presentation clear?			
Did the presenter recap/summarize the main points of the presentation before closing?			

Unit 3: Going international!
Handout 97
Instructions: Individually, read the information on the use of the present perfect. Then, do Part A individually and Part B in pairs.

Present Perfect

Structure:

- ✓ As you can see, the present perfect is composed of *have/has + past participle*.
- ✓ Use has + past participle with the third person (he, she, it)
- ✓ **Important:** The past participle is not the same as the past tense form. Take the time to learn past participles. Correct example: *We **have chosen** a replacement for our current metering device.* Incorrect example: *We **have chose** a replacement for our current metering device.*
- ✓ Contractions are formed as follows: *I have = I've, we have = we've, they have = they've, you have = you've, it has = it's, he has = he's, she has = she's*

Function:
We use the present perfect tense for past events that have a connection to the present.
Example:
Decisions and advancements made in the past that are relevant to the present.

5. We've decided to replace the metering device.
6. We've designed a new metering device.

Practice

C. Individually, use the verbs below to create present perfect sentences that you would use during a presentation.

1. (come up with)_____.
2. (decide)_____.
3. (design)_____.
4. (solve)_____.
5. (replace)_____

D. Share what you did in exercise A with a partner. Practice the pronunciation of contractions for the sentences you created.

Unit 3: Going International **25/10/2017**
Instructor: Andrea Sánchez **Lesson Plan #23**
Assistants: Elizondo and Pilgrim

Unit goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the class, students will be able to ask questions about a presentation.

Specific Objectives: By the end of this lesson, the Ss will:

1. relay information about magnetic refrigeration by participating in a telephone game.
2. identify the main ideas in a presentation on magnetic refrigeration by using comprehension strategies learned in Unit 1.
3. show understanding of questions frames by classifying them as being questions for clarification or elaboration.
4. ask questions for clarification and elaboration by successfully using the Cornell Method.
5. decide which of three air conditioning units is the best fit for their company's needs.
6. show understanding of the correct pronunciation of contractions used in the present perfect by using them correctly.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr welcomes Ss and tells them that we are almost done with the course and that she is very proud of the effort so far. Tr reminds Ss that there are only 5 classes remaining. Tr explains that Ss will continue to improve their oral skills in the next two weeks. Tr explains that speaking and listening are two skills that are very connected. Tr then tells Ss that today they are going to continue with presentations but first they are going to start with a telephone game. Tr will divide the class into groups of four. Tr will tell one person a sentence and this person must relay the message onto their teammate and so on. The last person to get the message must write down what they heard. The team that finishes with the most accurate sentence wins.	W S L	**Vocabulary** Magnetic refrigeration, magnetic field,		10 min Done by 5:10 pm
2	**Pre-task I** Tr ask one of the Ss what they did in the last class. Tr elicits the response 'presentations'. Tr asks a S to read the objective on the board. Tr says, "Today we are going to practice our listening skills. Can anyone tell me what some things are that we can do to help us listen better?" Tr elicits strategies seen in Unit one: Predicting, Cornell Method, Mind Map, Identifying Main Ideas and Supporting Details.	W S L	**Vocabulary** Alloy, magnetocaloric technology, get rid of, wave of the future **Useful language** He mentioned X. One of the things he said over and over was X.	Activating background knowledge. Identifying the main idea and supporting details.	15 min Done by 5:25 pm

	Tr tells Ss that they are going to listen to a presentation about magnetic refrigeration and they must identify the important information. Tr gives Ss 5 minutes to prepare for the listening by allowing Ss to talk in groups of 3. Tr recommends that Ss create a mind map on the back of Handout 98. Tr plays the video (2 times if necessary) https://www.youtube.com/watch?v=IynM3MBUqyc Ss write down the main idea and supporting details on Handout 98. After the video Tr asks different groups for the main ideas. Tr then asks Ss if they used any of the strategies they learned.		I think one of the main ideas was X The supporting details were X.		
3	**Pre-task II** Tr then asks Ss if they had any questions about what they just heard. Tr elicits some responses from Ss. Tr says, "In meetings and presentations related to work, we often have questions and sometimes we need clarification." Tr divides class into groups of 3. Each group gets an envelope containing a set of questions. Around the class, Tr posts 4 posters, one per group. Each poster has two categories: clarification and request elaboration. Ss must put the questions in the appropriate category. Tr checks answers with the group. Tr gives Ss **Handout 99** with a list of question frames.	R W S L	**Useful Language** What does this look/sound like to you? This sounds more like X to me. I would probably use this to ask for clarification/to request elaboration.		15 min Done by 5:40 pm
4	**Pre-task III** Tr projects Cornell Method on the board and reminds students of the column labeled Cue	R L W	**Vocabulary**	Cornell Method Identifying main idea and	15 min Done by 5:55

	Questions. Tr tells Ss that this is the perfect place to put questions Ss might have after listening to a presentation. Each S gets Handout 100, which contains the Cornell Method. The Tr explains that during meetings and presentations Ss may not have access to a handout like this, but they can still implement the principles. Tr tells Ss that they are going to listen to a video and they should focus on the main ideas, but now they need to write down questions to ask the speaker. Tr reminds Ss that they can use the question frames from **Handout 99.** https://www.youtube.com/watch?v=WIKKKMTA7XM After playing the video two or three times, Tr gives Ss 4 minutes to look at their notes and form their questions using the question frames. Ss then discuss their questions in groups of three. After discussion, Tr elicits questions from the Ss.	S	Regenerator, magnetic field, pistons Heat-pump **Useful Language** We could ask about X. We should ask about X. I didn't understand what they said about X. I didn't hear the part about X clearly. They didn't mention anything about X.	supporting details Asking questions for clarification and elaboration	
4	**Main Task** Tr tells Ss that now they are going to listen to three proposal presentations that come in the form of commercials. Tr explains that the videos contain different accents and some videos may contain more information than others. Because of this, Ss need to ask for clarification and elaboration. Tr divides the class into groups of 3. Each group gets a specific set of instructions about the type of questions to ask, Handout 101.	L W S	**Vocabulary** Control something remotely, lightweight frame, a breeze, bulky, eco-friendly **Useful Language**	Asking questions for clarification and elaboration.	20 min Done by 6:20 pm

	https://www.youtube.com/watch?v=go-kjFnZzFM Tr plays the video for Ss stopping the video after each ad. Noria: 0:00-1:58, Evapolar: 1:59- 4:15, and Amazing Air Conditioner 4:16-5:45. While listening to the video, Ss take notes and write down 3-4 questions per video. Tr elicits questions from each group and each group explains why they chose to ask their questions.		We could ask about X. We should ask about X. I didn't understand what they said about X. I didn't hear the part about X clearly. They didn't mention anything about X.		
5	**Post-task I** Ss discuss with their groups which of the previously seen products they would choose for the company as an eco-friendly and cost effective option and why.	R S L	**Useful Language** We've decided to go with X because.... After discussing the three products, we've chosen X because...		10 min Done by 6:30
6	**Post-task II** **Language focus** Tr reminds Ss that they can use the present perfect during presentations to provide updates about recent decisions. Tr reviews homework from last class and reviews pronunciation. Ss are to follow the instructions on **Handout 97**		*Present Perfect for giving updates:* We have chosen a replacement for our current metering device.		10 min Done by 6:40 pm


Pronunciation
Contractions review: I've, we've, he's, she's they've

Unit 3: Going International!
Handout 98
Instructions: After listening to the video, discuss what you think the main idea and supporting details are.

Main idea:
Supporting details:
Main idea:
Supporting details:

Glossary
Get rid of = eliminate ***alloy = a substance composed of two or more metals***

Material 31
Unit 3: Going International!
Warm up- Telephone Game Sentences
a)The Magnetic Refrigeration System does not use any refrigerant gas and is not affected by the regulations challenging the use of refrigerants.
b) Magnetic Refrigeration requires a low level of maintenance which lowers the operational cost for the end user.
c) The Magnetic Refrigeration System resolves the environmental challenge via a gas free solution.
d)The Magnetic Refrigeration System resolves the economic solution by dramatically reducing energy consumption.
e) The technology uses permanent magnets which do not require an energy source to produce the field.

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Handout 99- Clarification and Elaboration

Asking for Clarification involves: a) non-judgemental questioning and/or b) summarizing and looking for confirmation

- I'm not quite sure I follow. What do you mean by X?
- Sorry, I didn't quite hear what you said about X. Could you repeat that part again?
- Could you explain what you mean by X?
- Sorry, I didn't catch the part about X. Could you clarify that please?
- When you said X, what did you mean?
- Would you mind going over X one more time?
- If I understand you correctly, you are saying that magnetic refrigeration could take over.
- So what you are saying is that you don't have a finished product. Is that right?
- In other words magnetic refrigeration is the wave of the future. Is that what you're getting at?

Asking for Elaboration involves: a) trying to get extra information and/or b) asking for information that was not mentioned.

- How do you propose we deal with maintenance issues?
- How do you plan on dealing with maintenance issues?
- You mentioned getting rid of traditional refrigerants. What are some of the effects this would have on how the unit works?
- How much will replacement parts cost us?
- What's the cost of X?
- How much longer until you will be finished with the design?
- How far away are you from finding a solution to X?
- What are some of the benefits of changing to X?
- How does X compare to Y?
- How often would we need to provide maintenance for X?
- Could you elaborate a bit more on X?

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Handout 100-The Cornell Method

The Cornell Method for taking notes can help you have a record of each video you watch or presentation and meeting you attend.

Cornell Notes

Topic: _____
Date: _____

Cue Column (Key questions)	**Note-taking Column** (main ideas, important dates, people, formulas, repeated information)

Summary (2-4 sentences in your own words)

The following are some tips that can help you take notes better:

- ✓ write short sentences (no more than 10 words).
- ✓ ~~use your own words (unless it is a quote that you will need later).~~
- ✓ use abbreviations (MR=Magnetic Refrigeration)

Instructions: Watch the same segment of the lecture "Magnetic Refrigeration: How it Works" and try to take some notes, using the Cornell Method.

Glossary

Regenerator = type of heat exchanger

piston = a disk or cylindrical ring that compresses or moves a fluid.

Unit 3: Going International!

***Handout 101*- Making the right choice**

Situation: You work at a company that imports and sells air-conditioning units. Your company has decided to expand on the products it offers by looking into smaller more eco-friendly units. At one of your meetings three products are presented and your team must choose one.

Task: Listen to each of the ads/proposals and with your group, come up with 3-4 questions for each proposal (9-12 questions total). Things to keep in mind: maintenance, replacement parts, durability of materials, temperature in some parts of Costa Rica, and energy efficiency.

Material 32

Pre-task II Cut into slips (4 groups)

- I'm not quite sure I follow. What do you mean by X?
- Sorry, I didn't quite hear what you said about X. Could you repeat that part again?
- Could you explain what you mean by X?
- Sorry, I didn't catch the part about X. Could you clarify that please?
- When you said X, what did you mean?
- Would you mind going over X one more time?
- If I understand you correctly, you are saying that magnetic refrigeration could take over.
- So what you are saying is that you don't have a finished product. Is that right?
- In other words magnetic refrigeration is the wave of the future. Is that what you're getting at?
- How do you propose we deal with maintenance issues?
- How do you plan on dealing with maintenance issues?
- You mentioned getting rid of traditional refrigerants. What are some of the effects this would have on how the unit works?
- How much will replacement parts cost us?
- What's the cost of X?
- How much longer until you will be finished with the design?
- How far away are you from finding a solution to X?
- What are some of the benefits of changing to X?
- How does X compare to Y?
- How often would we need to provide maintenance for X?
- Could you elaborate a bit more on X?

Unit 3: Going International! **Lesson Plan # 24**
Instructor: Andrea Sánchez
Assistant: Elizondo and Pilgrim **30/10/2017**

Goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the week, students will use communication strategies to participate in a meeting.

Specific Objectives: By the end of this lesson, Ss will:

1) identify the meanings of vocabulary related to meetings by participating in a game of kahoot.

2) show understanding of meeting etiquette by completing a checklist of dos and don'ts.

3) identify appropriate phrases for politely agreeing and disagreeing by completing a multiple-choice activity.

4) use appropriate phrases for politely agreeing and disagreeing by participating in a group conversation about refrigeration proposals.

5) show understanding of the correct pronunciation of contractions used in the present perfect by using them correctly.

6) monitor their understanding by identifying their strengths and weaknesses with regard to agreeing and disagreeing.

Comments:

Post Task 2 may be done as a pre-task.

	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will tell Ss that today they are going to continue preparing themselves to participate in meetings. Tr asks one St to talk about what they did last class. Tr will have one of the Ss read the objective of today's lesson. Tr tells Ss "We are going to learn some important vocabulary that is often used in meetings." Tr divides Ss into groups of three and tells them that they are going to play Kahoot. Tr reviews the instructions with Ss. (Ss have played the game before) https://play.kahoot.it/#/?quizId=64a9f136-5006-47ba-9dcc-eb1bfbe934e7	R S L	**Vocabulary** Take the wheel, headway, put off, call a meeting, set up **Useful Language** From the context we should go with option X. I don't think option X is correct. Let's go with option Y. We need to decide quickly.	Guessing Meaning from Context	15 min Done by 5:15pm
2	**Pre-task I** Tr will say to Ss, "In the past weeks we have learned how to give presentations and ask questions. A major part of meetings is coming to an agreement." Tr asks Ss in the class the following two questions.	W R S L	**Useful Language** This looks like a do/don't. I'm not sure about this one. It could be both. What do you think this could be?	Activating Background Knowledge	15 min Done by 5:30pm

	a) What makes it difficult to participate in a meeting? b) What are some things that you can do to participate better in meetings? Tr distributes **Handout 102,** a checklist of do's and don'ts for successful meeting participation. Ss work in pairs and decide whether the statements on Handout 102 are do's or don'ts. Tr has one of the Ss read the instructions. Tr elicits the correct responses from Ss and elaborates on each statement.				
3	**Pre-task II** Tr tells Ss that there are appropriate ways of disagreeing with someone and that they are going to learn some helpful phrases. Tr divides Ss into new groups of 3 and distributes **Handout 103,** a multiple choice activity in which Ss have to decide which responses are the most polite and appropriate. Tr then instructs one group member to change groups and compare answers with another group. Tr elicits answers from Ss and reviews vocabulary.	S W R L	***Vocabulary*** upcoming, pistons, approval, leak **Useful Language** This one seems more appropriate. X doesn't seem very polite.		15 min Done by 5:45pm

3	**Pre-task III** Tr facilitates Ss with **Handout 104**, a list of useful expressions that can be used to agree and disagree with statements. Tr reviews the expressions before dividing Ss into pairs. Tr sets up 6 different stations. At each station the pair will practice a dialogue containing an agreement or disagreement. Ss will decide by ticking whether it's an agreement or disagreement and write down the phrase that helped them recognize this. Tr elicits responses from Ss After all groups have gone to all stations.	R W S	***Vocabulary*** Come out, lubricant, leakage, energy penalty **Useful Language** This is an agreement/disagreement because X. X is a useful phrase for agreement/disagreement.	Agreeing and Disagreeing Politely	15 min Done by 6:00pm
4	**Main Task** Tr reminds Ss that during meetings it is important to be direct but at the same time one cannot be impolite. Tr divides the class into groups of three. Each member of the group gets a role play card, Handout 105. The instructions on the card will tell Ss what they need to say and what they need to agree or disagree to. Each Tr works with a group of three Ss. Tr and assistants monitor Ss during this activity and write down errors to discuss after Ss are finished.	R W L S	***Vocabulary*** *Expansion valve, thermostatic, launch,deadline* **Useful Language** *Handouts 102, 103, and 104*	Agreeing and Disagreeing Politely	20 min Done by 6:20pm

6	**Post-task 1** *Planning and Reporting* In their pairs, Ss discuss the following questions: a) Do you think the phrases learned are helpful in a real work situation? b) What could you improve?	S L R	**Useful Language** I think I could improve X. I think I did a good job at agreeing/disagreeing politely.	Self-Monitoring	10 min Done by 6:30pm
5	**Post-task 2 Language Focus** Tr will check the homework from the last class, Handout 97. .	R W S L	**Grammar** *Present Perfect for giving updates:* We have chosen a replacement for our current metering device. **Pronunciation** Contractions review: I've, we've, he's, she's they've		10 min Done by 6:40pm

Unit 3: Going International!
Handout 102

Do's and Don'ts of Meeting Etiquette

The following are some do's and don'ts for meetings. Read the following statements and with your group, discuss whether the statement is a DO or a DON'T for meetings.

Recommendations	DO	DON'T	Maybe
Be punctual			
Be attentive			
Eat during the meeting			
Check your smartphone for e-mails and messages			
Sit appropriately			
Try to contribute to the meeting			
Introduce yourself			
Ask relevant questions			
Save all your questions for the end of the meeting			
Come prepared with ideas			
Have a side conversation with another participant of the meeting.			
Interrupt the speaker			

Unit 3: Going International!
Handout 103

Instructions: With your partner, discuss which of the following responses are polite ways to agree or disagree. Circle the most appropriate answer.

Part 1: Disagreement

1) We'll need to buy a new discharge line.

a) I'm not so sure about that. I think we could repair the leak.

b) No way. We can easily repair the leak.

2) If we found an alloy that functions as the refrigerant, we could make some headway into magnetic refrigeration.

a) I don't think that's true. That's only one of our shortcomings.

b) Not necessarily. We still have to do a lot more research.

3) I think it's time for us to change suppliers.

a) I honestly don't see why we need to change suppliers. We've been with them for a long time.

b) That's a bad idea. We should stick with what we know.

4) At this stage we may have to ask them to increase our budget for the project.

a) I am afraid that Hank told me that increasing the budget for our department was not a possibility.

b) You can't be serious. Hank already told us no.

5) I think we should go ahead with the project because we can't wait on management's approval any longer.

a) Are you crazy? We could get ourselves into some real hot water if we do that.

b) I don't think it would be advisable to start without the necessary approval. We could end up wasting a lot of time.

Part 2: Agreement

6) We need to find a way to reduce energy consumption.

a) I couldn't agree more with you. That should be our priority.

b) Yes, you are right.

7) Let's try to find a way to make it noiseless.

a) Sounds good to me.

b) Yes, that's a good idea.

8) We shouldn't mention anything about changing the pistons until we are sure.

a) I don't think so either. Let's make sure first.

b) Yes, I agree. We should wait.

9) Charlie should take the wheel for the upcoming project on stabilizing the refrigeration system.

a) I agree entirely. He has the most experience out of everyone here.

b) Yes, he's the man for the job.

10) If we reduce the heat extraction temperature of the refrigerant, we can reduce the size of the compressor needed for the system.

a) That's true. How can we do that?

b) I think you have an interesting point. How do you propose we do that?

Unit 3: Going International!
Handout 104-Useful phrases for expressing agreement and disagreement

Expressing Agreement	Expressing Disagreement
I couldn't agree more.	I honestly don't see why...
I agree entirely.	I'm not sure I quite agree.
That's exactly what I think.	I don't think it would be advisable to...
I'd go along with you on that.	Well to be quite honest...
I think you have an interesting point.	I'm afraid that...
That's a good point.	Not necessarily.
You're absolutely right.	I beg to differ.
	Actually, I think...*
	Well, in my opinion...*
	Yes, but on the other hand...*

One way to disagree indirectly is to simply state your opinion. It's common to use the words **well and **actually**, which signal that you are going to express a contrasting opinion.*

Instructions: Go to each station and read the dialogues with your partner. Decide whether the dialogues express agreement or disagreement. Write down the phrase that helped you discover this.

Station #	Agree	Disagree	Useful Phrases
1			
2			
3			
4			
5			
6			

Unit 3: Going International!
Handout 105

Instructions: You are attending a meeting at your job and you must give an update based on the information below. Take 5 minutes to get familiar with the information on your card. Your card informs you of what you should agree/disagree with.
Situation A

Update: Your team has developed a smaller compressor that makes the air conditioning unit more energy efficient. You want to know if you can get the company's approval to start producing this unit on a large scale.

Drawbacks of the smaller compressor: a) The unit requires more maintenance and b) the manufacturing cost is double the cost of previous models.

For other presentations, you are mostly concerned with effects on the environment.

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Handout 105

Instructions: You are attending a meeting at your job and you must give an update based on the information below. Take 5 minutes to get familiar with the information on your card. Your card informs you of what you should disagree with.
Situation B

Update: Your team has found a replacement for the refrigerant that you are currently using. It's easy to manufacture and it is not very corrosive. The new refrigerant has good transport and heat transfer properties.

Drawbacks of the new refrigerant: It has a harmful environmental impact.

For other presentations, you are mostly concerned with the project's deadline. You know that all projects must be completed on time because a launch date for the new product has already been given to the public.

Unit 3: Going International!
Handout 105

Instructions: You are attending a meeting at your job and you must give an update based on the information below. Take 5 minutes to get familiar with the information on your card. Your card informs you of what you should disagree with.

Situation C

Update: Your team has designed an electronically controlled expansion valve. This new expansion valve promises to be more energy efficient than the previous thermostatic expansion valve. It is more expensive than the older valve but it does not exceed the budget for the project.

Drawbacks of the new expansion valve: You are still in the prototype stage and you are not sure if you will have the expansion valve ready for production before the deadline.

For other presentations, you are mostly concerned with the project's budget. At this stage you know that all projects must stay within their pre-established budgets and no additional funds available.

Materials 33

Unit 3: Going International
Pre task 3 Station 1

Engineer A: We need to find a refrigerant with a lower molecular weight than the one we are currently using.
Engineer B: I couldn't agree more. This will improve the energy efficiency in the system.
Engineer A: Yes, my team is working on finding a replacement as we speak.
Engineer B: That's great news. Keep us updated.

Unit 3: Going International!
Pre Task 3 Station 2

Engineer A: We should look into variable speed drive technology and improved control systems to minimize the energy penalty.
Engineer B: Yes, but I'm afraid that would increase capital costs. I don't think that it would fit into our budget.
Engineer A: Well, to be quite honest I think we would save more *money* in the long run.
Engineer B: I'm not quite sure I agree.

Unit 3: Going International!
Pre Task 3 Station 3

Engineer A: If we want to lower electricity consumption, we need to modify the compressor to reduce leakage
Engineer B: You're absolutely right. We need to reduce this consumption by at least 15%.
Engineer A: That's exactly what I think.
Engineer B: Let's make that a priority.

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Pre Task 3 Station 4

Engineer A: We need to change our refrigerant. The one we currently use is coming under fire from environmental organizations.
Engineer B: Actually, it's just speculation. Nothing conclusive has come out as yet.
Engineer A: Well, to be quite honest I think we should explore other options.
Engineer B: I think we should wait and see.

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Pre Task 3 Station 5

Engineer A: We have to find a way to preserve the lubricant quality in the compressor.
Engineer B: That's a good point. That would retain energy efficiency.
Engineer A: I think John can help us out with that.
Engineer B: Perfect. Let me know when he's made some headway.

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Pre Task 3 Station 6

Engineer A: We need to have another training session with our technicians. We have too many issues with the evaporator.
Engineer B: I honestly don't see why we have to meet with them again. I think an e-mail would be sufficient.
Engineer A: Well, in my opinion a meeting would send a stronger message.
Engineer B: Yes, but do we have time for that?

Unit 3 – Going International! **Lesson Plan**

Instructor: Fabian Elizondo **Lesson #25**
Assistant: Pilgrim, and Sánchez **11/01/2017**

Goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the week, students will use communication strategies to participate in a meeting.

Specific Objectives: By the end of this lesson, Ss will:

1) show understanding of vocabulary related to refrigeration by matching them to their definitions in a game of gravity.

2) explain why impolite interruptions are not appropriate for work-related meetings.

3) identify polite expressions for interrupting by selecting them from a simulation.

4) identify polite expressions for maintaining one's turn by selecting them from a simulation.

5) correctly use polite expressions to interrupt and maintain one's turn during a simulation of a meeting on refrigeration updates.

6) reflect on their participation in a meeting by sharing experience with the rest of the class.

7) correct their errors by participating in an error feedback session with their classmates.

Comments: Assistant Trs write down salient errors on the board to be reviewed in post-task #2

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will welcome Ss and remind them that we are almost there. Tr tells Ss that they are going to do an all class activity. Tr tells Ss to think about the combinations of words they learned last class. Tr projects the quizlet game gravity on the board. https://quizlet.com/_3ym0lr One St is selected to be the scribe and the other Ss must shout out the correct answers for the scribe. Tr gives the entire class a prize if they get at least 10 words correct in a row in 5 or less attempts.	R S L W	**Vocabulary** *Alloy, evaporator, compressor, magnet, set up, leak, deadline, get rid of, energy penalty, budget* **Useful Language** *How do you spell it?* *Quickly. We don't have much time left.*		15 min Done by 5:15pm
2	**Pre-task I** Tr divides the class into three groups. Each groups gets Handout 106, a situation that was discussed in a previous class. Each Tr supervises one group. One of the group members offers a proposal for	R S L	**Useful Language** *I wasn't able to share my presentation because X.*	**Interrupting and keeping one's turn**	10 min Done by 5:25pm

	the situation but the Trs rudely interrupt the Ss before they are finished. After about 5 minutes of this Tr leads a class discussion about the activity by asking the following questions: 1) Were you able to share your proposal? Why or why not? 2) How did you feel when we interrupted you? 3) What are some ways we can prevent people from interrupting us? After listening to a few answers, Tr asks one S to read the objective. Tr tells Ss that last class they learned how to politely agree and disagree and that today they are going to learn how to interrupt and keep their turn.		*It was impossible to share my presentation because X.* *I felt X when the teacher kept on interrupting.*		
3	**Pre-task II** Tr tells Ss that he is going to give them suggestions on how to politely interrupt someone during a meeting. Tr divides Ss into pairs. Tr asks Ss to listen to the advice given and write	S R L	***Vocabulary*** Go ahead, drawback, harmful, concrete figures, GWP, Global Warming Potential, Sorry to but in, Sorry for interrupting	**Politely Interrupting**	15 min Done by 5:40pm

	down the suggestions on **Handout 107**. Ss discuss their answers with their partner. After about three minutes, Tr elicits answers from Ss. Each St will receive **Handout 108**, a list of expressions. Tr reviews pronunciation of each of the phrases. Tr will tell Ss that they have to circle the phrases that they heard in the meeting presented by the teachers that can be used to interrupt. Ss will compare their answers. Tr will elicit answers from Ss.		**Useful Language** *He mentioned X.* *Did you hear what the he said about X?* *What did you hear?* *I heard X.* *He/She said X to interrupt the speaker.* *He/She said X to keep their turn.*		
4	**Pre-task III** Tr will explain to Ss that sometimes we do not want to be interrupted. Tr tells Ss that we will watch the video again and identify expressions that help you keep your turn. Tr tell Ss that they will continue working with **Handout 108** but instead of identifying the phrases for interrupting they now have to listen for expressions for keeping their turn.	S R L	***Vocabulary*** *Go ahead, drawback, harmful, concrete figures, GWP, Global Warming Potential, Sorry to but in, Sorry for interrupting* **Useful Language**	**Politely interrupting and keeping your turn**	15 min Done by 6:05pm

	Trs model the meeting again and Ss make a rectangle around the expressions they hear. Ss compare answers with their partner. Tr elicits answers from Ss. Tr gives Ss **Handout 109**, the script for the model meeting, and tells them that they can use it as a reference. Tr tells Ss that now they are going to practice these polite interruptions. Tr sets up 5 stations around the class. Each station has a situation that may contain polite expressions for interrupting and/or expressions for keeping your turn. Assistant Trs model this activity. After 1 minute Ss move to the next station.		*The speaker mentioned X.* *Did you hear what the speaker said about X?* *What did you hear?* *I heard X.* *He/She said X to interrupt the speaker.* *He/She said X to keep their turn.*		
5	**Main Task** Tr will tell Ss that now they have two more strategies that they can use in meetings. Tr elicits different strategies learnt in the unit from the students by asking:	S R L	***Vocabulary*** *Electronically controlled expansion valve, magnetocaloric cooling, thermoelectric cooler, agitate, moving parts*	**Keeping your Turn and Politely interrupting**	25 min Done by 6:30pm

	What are some communication strategies we can use during meetings? (asking for elaboration, agreeing, and disagreeing) Tr will outline the activity for Ss and tell them that the assessment will be very similar. Tr will give Ss the rubric, **Handout 111**. Tr divides Ss into groups of 3. Each Ss gets **Handout 110**, a situation and a role to play in a meeting. Tr directs Ss' attention to the table in **Handout 110**. Tr tells Ss to write down useful expressions that they feel the most comfortable using. Tr then gives Ss 10 minutes to prepare for the role play. Each Tr works with a group of 3-4 Ss. Trs act as the chairmen of the meeting and make sure Ss are on task and encourage all members of the group to contribute appropriately.		Useful Language Handouts 99,104, 108		
6	**Post-task 1** *Planning and Reporting* Ss discuss the activity in their groups by talking about the following questions:	S L R	**Useful Language** *We talked about X.* *Pablo spoke about X.*	**Monitoring learning**	10 min Done by 6:40pm

	a) What was the meeting about? b) What were the proposals? c) What were some of the disagreements? d) How did we deal with conflicts in the meeting? After the discussion, one member of each group shares the experience with the rest of the class.		*I disagreed with X because X.* *I think we dealt with conflicts in a polite/professional way.* *We didn't deal with X.*		
7	**Post-task 2** Tr reviews the grammar mistakes made during today's class. Tr elicits corrections from Ss.	R S L		**Monitoring learning**	5 min Done by 6:45pm

Unit 3: Going International!
Handout 106

Take your mind off of refrigeration for a second and think back to one of your favorite activities in the course. Share what this activity was with your group and say why it was your favorite. When you are done talking about your favorite activity share one recommendation you would give your professors.

Unit 3: Going International!
Handout 107

Interrupting Politely

Watch the following video and take notes on how you can politely interrupt someone.

Unit 3: Going International
Handout 108

Look at the following list of phrases for politely interrupting someone. Circle the phrases that you hear in the meeting presented by the teachers.

Interrupting Someone Politely

a) Can I stop you there for a moment?
b) Can I just butt in for a second?
c) Can I just mention something?
d) Can I just add something here?
e) Do you mind if I come in here?
f) g) Before you move on, I'd like to say something.
g) Before you go on, I'd like to say something.
h) Excuse me for interrupting but……
i) Excuse me for butting in but…..
j) Sorry for interrupting but….
k) Just a moment, I'd like to….
l) If I could just come in here. I think…
m) I'm sorry to interrupt, but this will only take a minute.
n) Sorry for the interruption, but could you (answer a quick question / help me for a moment / give me your opinion on ...)
o) I'm so sorry. This will just take a minute.
p) I apologize for the interruption, but I have an important question.
q) Could I jump in?
r) Could I add something?
s) Can I say something?
t) u) May I interject?

Unit 3: Going International!

Handout 108

Look at the following list of phrases for keeping your turn. Circle the ones that you heard in the meeting presented by the teachers.

Keeping Your Turn

a) Please let me finish.
b) Let me complete my thought.
c) Would you please let me finish?
d) Can I continue, please?
e) If you could wait for a second, I'm just about to finish my point.
f) Could I please just finish my point?
g) Excuse me, I'd just like to finish this point.
h) I know you're dying to jump in, but...
i) I haven't (quite) finished what I was saying
j) (Just) one more thing (before you interrupt).
k) I haven't got to my main point (yet), which is...

Continuing what you were saying

a) As I was saying... b) Carrying on from where I left off
c) To get back to what I was saying... d) Where were we? /What was I saying? Oh yes...

Allowing the interruption

a) Sure. Go ahead. b) Sure. No problem.
c) Of course. d) Please. Go ahead.

Unit 3: Going International!
Handout 109- Model Meeting Containing Interruptions

Engineer A: Okay let's get started. This should be a pretty short meeting. I just need to know where everyone is with respect to their projects. Let's hear from your team first, Fabian.
Engineer B: As you know we have developed a smaller compressor that will reduce energy consumption by 30 percent.
Engineer C: Excuse me for interrupting but I have an important question.
Engineer B: Sure. Go ahead.
Engineer C: How does a smaller compressor affect maintenance and operational costs?
Engineer B: Good question. This is actually one of the biggest drawbacks of the new compressor. It will require more frequent maintenance and the production cost will increase significantly.
Engineer A: To be quite honest I don't think we can stretch the budget any more. Maybe we'll have to look into that new compressor next year.
Engineer B: Let me get back to you with some concrete figures in terms of how much more it will cost. We would love to get this into production this year.
Engineer A: We'll try our best but I'm afraid that it might not be possible. I suggest you start thinking of a plan B.
Engineer B: Okay.
Engineer A: If that's all from you, let's hear from Andrea's team.
Engineer C: We've been searching from a replacement for our current refrigerant for quite some time. I think we've finally found a solution.
Engineer B: Sorry for butting in but...
Engineer C: I know you're dying to jump in but I'm about to finish. As I was saying, the new refrigerant has better transport and heat transfer properties. It will make the system much more efficient.
Engineer A: That's great.
Engineer B: Yes, but what about the environmental impact of this new refrigerant? Could you elaborate on that please?
Engineer C: Of course. In terms of the GWP, the new refrigerant is slightly more harmful than the one we currently use.
Engineer A: We have to be careful with that. I don't think it would be advisable to take risks with regard to the company's reputation.
Engineer B: I couldn't agree more with you. We should continue looking at other options.

Unit 3: Going International!
Handout 110

Instructions: You are attending an interdepartmental meeting in which you have to give an update on a project that you are working on. Take 10 minutes to get familiar with your situation and what you need to do. Remember to be as polite as possible during the meeting when interrupting, agreeing, disagreeing, and asking for clarification. Use the chart below to write down useful phrases that you might use during the meeting.

Situation A

Update: Your team has developed a thermoelectric cooler.

Definition of thermoelectric cooler: Also called a Peltier cooler, it works by running a direct electric current between two parallel semiconducting plates.

Advantages: There are several advantages to using a thermoelectric cooler over a traditional vapor compression system. First, the thermoelectric cooler has no moving parts, so maintenance is easier. They have long lifetimes so they need to be replaced less often. Also, there is no possibility of breakdowns associated with leaking refrigerant since the entire system is liquid-free. Further, it can provide very tight temperature control.

Disadvantages:It requires a lot of more electricity. In the long run it will be more expensive for our clients. The thermoelectric cooler is not capable of generating large changes in temperature from the ambient.

For other presentations you are mostly concerned with deadlines. You know that at this stage there is no chance that projects will be given an extension.

Interrupting and keeping your turn	
Agreeing and Disagreeing	
Asking for clarification and elaboration	

Unit 3: Going International!
Handout 110

Instructions: You are attending an interdepartmental meeting in which you have to give an update on a project that you are working on. Take 10 minutes to get familiar with your situation and what you need to do. Remember to be as polite as possible during the meeting when interrupting, agreeing, disagreeing, and asking for clarification.

Situation B

Update: Your team has been working with magnetocaloric cooling.

Definition of magnetocaloric cooling: The system uses a water-based fluid rather than a chemical refrigerant such as Freon to transfer heat from inside the refrigerator and to achieve the cooling process. Instead of a compressor, magnets are used to create a magnetic field that agitates particles in the fluid causing it to cool.

Advantages: This breakthrough can power our refrigerators with greater efficiency, and because the technology does not contain traditional refrigerants, recycling refrigerators at end of life will be easier and less costly.

Disadvantages: You will not be able to meet the November 30th deadline because you are still in the prototype stage.

For other presentations you are mostly concerned with budget. You know that at this stage there is no chance that projects will be given more funds until next year.

Interrupting and keeping your turn	
Agreeing and Disagreeing	
Asking for clarification and elaboration	

Unit 3: Going International!
Handout 110

Instructions: You are attending an interdepartmental meeting in which you have to give an update on a project that you are working on. Take 10 minutes to get familiar with your situation and what you need to do. Remember to be as polite as possible during the meeting when interrupting, agreeing, disagreeing, and asking for clarification.
Situation C

Update: Your team has designed an electronically controlled expansion valve (EEV).

Definition of EEV: The electronic expansion valve (EEV) operates with a much more sophisticated design. EEVs control the flow of refrigerant entering a direct expansion evaporator. They do this in response to signals sent to them by an electronic controller.

Advantages: This new expansion valve promises to be more energy efficient than the previous thermostatic expansion valve. Less strain on the compressor and less deterioration of lubrication oil.

Disadvantages: It is more expensive than the older valve and as a result the price of the overall product will increase.

For other presentations you are mostly concerned energy consumption and the cost effect it will have on clients.

Interrupting and keeping your turn	
Agreeing and Disagreeing	
Asking for clarification and elaboration	

Handout 111
Rubric for Meetings

	1	2	3	4
Vocabulary and language use	Little attempt to use the appropriate language for the task. Little or no politeness shown during the meeting.	Makes an attempt to use appropriate language for the task. Inconsistent politeness throughout the meeting.	Uses the appropriate polite language throughout. At times uses structures incorrectly but maintains professionalism throughout the meeting.	Uses appropriate polite language with ease throughout the meeting. Uses structures with a great deal of accuracy and little to no mistakes.
Pronunciation	A lot of pronunciation mistakes. Listener does not understand most of what the speaker is saying. Speaker speaks too softly to be heard clearly.	Some mistakes. Listener has to make an effort to understand the speaker.	Few mistakes. Listener can follow the speaker's ideas and the speaker speaks clearly and loudly.	Few or no mistakes. Speaks loudly, confidently, and clearly. Listener easily follows the speaker's ideas.
Fluency	Pace of speech is very slow. A lot of unnatural pauses which interfere with the message conveyed.	Speaks with some hesitations. But overall message is not affected by hesitations. Some rewording of ideas.	Speaks with very little hesitation that does not affect the message.	Interacts smoothly and uses natural pauses and fillers to communicate ideas.
Task Completion	Not able to give an update or ask questions during the meeting. Misunderstands the task.	Is able to complete one part of the task but not both.	Completes both parts of the task but does little to contribute to the flow of the meeting.	Easily completes both parts of the task and successfully contributes to the flow of the meeting.

Vocabulary/Language Use:_____ Pronunciation: _____ Fluency:_____
Task Completion:_____ Total:_____

Material 34
Unit 3: Going International!
Pre task III

Station 1
Engineer A: There are several benefits to magnetic refrigeration.
Engineer B: Sorry to interrupt but...
Engineer A: If you could just wait one second, I'm just about to finish my point.

Station 2
Engineer A: By switching to a thermoelectric cooler we can save a lot on maintenance.
Engineer B: Excuse me for interrupting but could I ask you a quick question?
Engineer A: Sure. Go ahead.

Station 3
Engineer A: We are still looking into the environmental impacts of using this refrigerant.
Engineer B: Could I jump in?
Engineer A: I know you're dying to jump in but I'm almost finished. As I was saying, we think we can minimize the effects.

Station 4
Engineer A: Thermostatic expansion valves are becoming outdated.
Engineer B: Can I stop you there for a moment?
Engineer A: Please let me finish. To get back to what I was saying, we are experimenting with electronically controlled expansion valves.

Station 5
Engineer A: We just need a bit more time to perfect the new system.
Engineer B: Could I add something?
Engineer A: Sure. No problem.

Unit 3 – Going International! **Lesson Plan**

Instructor: Fabian Elizondo **Lesson #26**
Assistant: Pilgrim, and Sánchez **11/06/2017**

Goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the week, students will use communication strategies to participate in a meeting.

Specific Objectives: By the end of this lesson, Ss will:

1) correctly pronounce useful phrases for meetings by participating in a game of Chinese whispers.

2) effectively prepare for a meeting on refrigeration by selecting useful phrases to use during the session.

3) actively participate in a mechanical engineering meeting simulation by implementing strategies learnt in the course.

4) discuss their performance during the meeting by answering reflection questions.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr welcomes Ss and informs them that today is their last evaluation. Tr explains to Ss that there is no need to stress and that the evaluation is really similar to what we have been doing in class. Tr tells Ss that they are going to start with a game that will help them prepare for the evaluation. Tr divides the class into two groups. Tr tells Ss that they remember the telephone game they played two weeks ago. The two assistants Trs work with the teams by providing them with the initial message. The last person to receive the message must record the message using the voice recorder on their phone. The team that finishes first wins. The game goes for three rounds. Tr reviews pronunciation of difficult words at the end of the game.	S L	**Vocabulary** Alloy, evaporator, compressor, set up, deadline, refrigerant environmental, budget **Useful Language** Can you repeat that? I didn't quite catch the last part.		15 min Done by 5:15pm

2	**Pre-task I Pick your favorite** Tr tells Ss that they have learned several strategies that they can use during a meeting and elicits these strategies from the group *(asking for clarification and elaboration, disagreeing and agreeing, interrupting politely and keeping your turn).* Tr distributes **Handout 112**, the situations for the evaluation. Tr divides the class into groups of three. The Ss with the same situation work together. Tr tells Ss that they have 15 minutes to discuss their situation with their group. Tr tells Ss that there are useful phrases posted around the class and that they need to walk around and discuss which ones they would use in the meeting. Tr tells Ss that they can use the table on **Handout 112** to write down the phrases they want to use. Tr tells Ss that the Trs are going to model a meeting for them. Tr tells Ss to keep this meeting in mind when preparing.	R S L	**Useful Language** *What does this mean?* *Which phrase for interrupting are you going to use?* *How are you going to give your update?*	**Asking for clarification, agreeing, disagreeing, interrupting, keeping your turn**	15 min Done by 5:30pm

	After 15 minutes of preparation, teacher reviews the rubric for the task and encourages Ss to use the strategies and language learnt.				
3	**Main Task** Each Tr works with a group of 3 Ss. Trs act as the chairmen of the meetings and make sure Ss are on task and encourage all members of the group to contribute appropriately. Tr explains that each card has possible solutions for questions that Ss may get asked. However, if Ss don't have an answer to a question they can simply say, "I'll have to get back to you on that."	S R L W	***Vocabulary*** *Electronically controlled expansion valve, magnetocaloric cooling, thermoelectric cooler, agitate, moving parts* **Useful Language** *Handout 112*	**Asking for clarification, agreeing, disagreeing, interrupting, keeping your turn**	15 min Done by 5:50 pm
4	**Post Task Conference** Tr holds a conference with Ss to find out how they felt about the evaluation. Tr tells Ss that this part is not graded. Tr asks Ss the following questions: What did you like about the meeting? What do you think you did well?	S L	**Useful Language** *I think I improved X.* *I think I could improve X.* *I still need to work on X.*	**Monitoring** **Self-Assessment**	15 min Done by 6:05

	Do you think you improved with respect to your participation in meetings? What are some things you think you still have to improve? What strategies did you use in the meeting? Which phrases that you learnt in class did you choose and why? One person from each group shares their experience with the rest of the class after the conference. Tr tells Ss "Another important aspect of meetings is knowing your coworkers. The position, personality, and your relationship with them will affect what language you should or shouldn't use with them. This is something that you will learn about them when you start working together." Tr thanks Ss for coming to class and tells them that the next class will be the last class and will have lots of prizes.		*I chose/used X in the meeting because X.*		

Unit 3: Going International!
Handout 112
Instructions: You are attending an interdepartmental meeting in which you have to give an update on a project that you are working on. Take 15 minutes to get familiar with your situation and what you need to do. Remember to be as polite as possible during the meeting when interrupting, agreeing, disagreeing, and asking for clarification. Use the chart below to write down useful phrases that you might use during the meeting.
Situation A

Update: Your team has developed a thermoelectric cooler.

Definition of thermoelectric cooler: Also called a Peltier cooler, it works by running a direct electric current between two parallel semiconducting plates.

Advantages: There are several advantages to using a thermoelectric cooler over a traditional vapor compression system. First, the thermoelectric cooler has no moving parts, so maintenance is easier. They have long lifetimes so they need to be replaced less often. Also, there is no possibility of breakdowns associated with leaking refrigerant since the entire system is liquid-free. In addition to this, it can provide very tight temperature control.

Drawbacks: It requires a lot of more electricity. In the long run it will be more expensive for our clients. The thermoelectric cooler is not capable of generating large changes in temperature from the ambient.

Solutions: You are working on a way to make it more energy efficient. The thermoelectric cooler your team designed may not be suitable for big refrigeration tasks but can be used for portable refrigerators and coolers used by campers.

For other presentations you are mostly concerned with deadlines. You know that at this stage there is no chance that projects will be given an extension.

Remember: If there's any question that you can't answer, you can simply reply, *"I'll have to get back to you with an answer on that."*

Interrupting and keeping your turn	
Agreeing and Disagreeing	
Asking for clarification and elaboration	

Unit 3: Going International!
Handout 112

Instructions: You are attending an interdepartmental meeting in which you have to give an update on a project that you are working on. Take 15 minutes to get familiar with your situation and what you need to do. Remember to be as polite as possible during the meeting when interrupting, agreeing, disagreeing, and asking for clarification. Use the chart below to write down useful phrases that you might use during the meeting.
Situation B

Update: Your team has been working with magnetocaloric cooling.

Definition of magnetocaloric cooling: The system uses a water-based fluid rather than a chemical refrigerant such as Freon to transfer heat from inside the refrigerator and to achieve the cooling process. Instead of a compressor, magnets are used to create a magnetic field that agitates particles in the fluid causing it to cool.

Advantages: This breakthrough can power our refrigerators with greater efficiency, and because the technology does not contain traditional refrigerants, recycling refrigerators at end of life will be easier and less costly.

Disadvantages: You will not be able to meet the November 30th deadline because you are still in the prototype stage.

Solutions: If management doesn't give you an extension you can continue using the compressor system that you currently have.

For other presentations you are mostly concerned with budget. You know that at this stage there is no chance that projects will be given more funds until next year.

Remember: If there's any question that you can't answer, you can simply reply, *"I'll have to get back to you with an answer on that."*

Interrupting and keeping your turn	
Agreeing and Disagreeing	
Asking for clarification and elaboration	

Unit 3: Going International!
Handout 112

Instructions: You are attending an interdepartmental meeting in which you have to give an update on a project that you are working on. Take 15 minutes to get familiar with your situation and what you need to do. Remember to be as polite as possible during the meeting when interrupting, agreeing, disagreeing, and asking for clarification. Use the chart below to write down useful phrases that you might use during the meeting.

Situation C

Update: Your team has designed an electronically controlled expansion valve (EEV).

Definition of EEV: The electronic expansion valve (EEV) operates with a much more sophisticated design. EEVs control the flow of refrigerant entering a direct expansion evaporator. They do this in response to signals sent to them by an electronic controller.

Advantages: This new expansion valve promises to be more energy efficient than the previous thermostatic expansion valve. The new valve can be programmed for custom control applications. There is also less strain on the compressor and less deterioration of lubrication oil.

Disadvantages: It is more expensive than the older valve and is a bit outside of our budget.

Solutions: If some teams do not use all the money assigned to them, maybe you can use some of their funds. You are looking into more inexpensive parts will not reduce the system's efficiency.

For other presentations you are mostly concerned energy consumption and the cost effect it will have on clients.

Remember: If there's any question that you can't answer, you can simply reply, *"I'll have to get back to you with an answer on that."*

Interrupting and keeping your turn	
Agreeing and Disagreeing	
Asking for clarification and elaboration	

Material 35

Unit 3: Going International!
Asking for Clarification involves: a) non-judgemental questioning and/or b) summarizing and looking for confirmation

- I'm not quite sure I follow. What do you mean by X?
- Sorry, I didn't quite hear what you said about X. Could you repeat that part again?
- Could you explain what you mean by X?
- Sorry, I didn't catch the part about X. Could you clarify that please?
- When you said X, what did you mean?
- Would you mind going over X one more time?
- If I understand you correctly, you are saying that magnetic refrigeration could take over.
- So what you are saying is that you don't have a finished product. Is that right?
- In other words magnetic refrigeration is the wave of the future. Is that what you're getting at?

Asking for Elaboration

- How do you propose we deal with maintenance issues?
- How do you plan on dealing with maintenance issues?
- You mentioned getting rid of traditional refrigerants. What are some of the effects this would have on how the unit works?
- How much will replacement parts cost us?
- What's the cost of X?
- How much longer until you will be finished with the design?
- How far away are you from finding a solution to X?
- What are some of the benefits of changing to X?
- How does X compare to Y?
- How often would we need to provide maintenance for X?
- Could you elaborate a bit more on X?

Material 36
Unit 3: Going International

Interrupting Someone Politely

a) Can I just say something here?

b) Can I stop you there for a moment?

c) Can I just butt in for a second?

d) Can I just mention something?

e) Can I just add something here?

f) Do you mind if I come in here?

g) Before you move on, I'd like to say something.

h) Before you go on, I'd like to say something.

i) Excuse me for interrupting but.....

j) Excuse me for butting in but.....

k) Sorry for interrupting but....

l) Just a moment, I'd like to....

m) If I could just come in here. I think...

n) I'm sorry to interrupt, but this will only take a minute.

o) Sorry for the interruption, but could you (answer a quick question / help me for a moment / give me your opinion on ...)

p) I'm so sorry. This will just take a minute.

q) I apologize for the interruption, but I have an important question.

r) Could I jump in?

s) Could I add something?

t) Can I say something?

u) May I interject?

Unit 3: Going International!

Keeping Your Turn

a) Please let me finish.

b) Let me complete my thought.

c) Would you please let me finish?

d) Can I continue, please?

e) If you could wait for a second, I'm just about to finish my point.

f) Could I please just finish my point?

g) Excuse me, I'd just like to finish this point.

h) I know you're dying to jump in, but...

i) I haven't (quite) finished what I was saying

j) (Just) one more thing (before you interrupt).

k) I haven't got to my main point (yet), which is...

Continuing what you were saying

a) As I was saying... b) Carrying on from where I left off

c) To get back to what I was saying... d) Where were we? /What was I saying?

Oh yes...

Allowing the interruption

a) Sure. Go ahead. b) Sure. No problem.

c) Of course. d) Please. Go ahead.

Material 36

Unit 3: Going International!

Useful Phrases for Expressing Agreement and Disagreement

Expressing Agreement	Expressing Disagreement
I couldn't agree more.	I honestly don't see why...
I agree entirely.	I'm not sure I quite agree.
That's exactly what I think.	I don't think it would be advisable to...
I'd go along with you on that.	Well to be quite honest...
I think you have an interesting point.	I'm afraid that...
That's a good point.	Not necessarily.
You're absolutely right.	I beg to differ.
	Actually, I think...*
	Well, in my opinion...*
	Yes, but on the other hand...*

**One way to disagree indirectly is to simply state your opinion. It's common to use the words well and actually, which signal that you are going to express a contrasting opinion.*

Material 37
Unit 3: Going International!
Post task: Student-Teacher Conference

1. What did you like about the meeting?
2. What do you think you did well?
3. Do you think you improved with respect to your participation in meetings?
4. What are some things you think you still have to improve?
5. What strategies did you use in the meeting?
6. Which phrases that you learnt in class did you choose and why?

Unit 3 – Going International!	**Lesson Plan**
Instructor: Andrea Sanchez	**Lesson #27**
Assistant: Pilgrim, and Elizondo	**08/11/2017**

Goal: By the end of this unit, the students will be able to write e-mails to request information, order machine parts, and coordinate site visits, as well as successfully participate in meetings and conferences related to project presentations and updates.

General Objective: By the end of the week, students will reflect upon their learning process by demonstrating understanding of the communication strategies learnt in the course.

Specific Objectives: By the end of this lesson, Ss will:

1) identify repeated patterns by practicing scanning strategies.

2) effectively use scanning to identify to main idea in a text related to wind turbines.

3) show understanding of strategies and vocabulary learned in the course by correctly answering questions in a game of jeopardy.

4) actively participate in a class discussion about their experience in the course by using strategies learned.

Comments:

Objective	Procedures	Skills	Language Focus	Strategies	Time allotted
1	**Warm-up** Tr will tell Ss "Today is going to be a day of competition and prizes. Today we are going to take a look back at everything we have done in the course." Tr then divides the class into groups of three. Each group will participate in an eye fixation relay. Tr will place three desks at the front of the class. Each desk will have three copies of Handout 113, an eye fixation exercise. Ss have to run up to the front of the class, complete the eye fixation exercise and then return to their seat in the class. Only when they get back to their seat can the other member of the team go. The team that finishes the fastest wins. Answers must also be correct.	R S L W	**Useful Language** Hurry up. Quickly. We don't have much time left.	**Scanning**	15 min Done by 5:15pm

2	**Pre-task** Tr tells Ss that the more they read the faster they will get at it. Tr asks students "Do you remember the name of the strategy for reading something quickly to look for the main idea?" (Scanning) Tr divides Ss into three different groups. Tr tells Ss that they are going to do a similar activity but this time they are going to read for the main idea in a text. Tr will put Handout 114 on the three desks in front of the class. Ss will run up to the board, sit in the chair, read a paragraph and write the main idea for that paragraph. Tr will compare answers to her answer sheet and the group with the answers closest to hers is the winning group. (Fastest group is the winner)	R S L	**Useful Language** *Hurry up* *They're catching up.*	**Scanning**	15 min Done by 5:30pm

3	**Main-task** Tr will tell Ss that they are going to participate in a game of jeopardy. Tr explains that the categories will include Strategies, It's Getting Technical, Job Interviews, Meetings, E-mails. playfactile.com/geardown Tr divides the class into groups of three. Each group chooses a name/fruit for their team. If a team gets the answer correct, they get points. If not, they lose points. In Final jeopardy, Ss get to make a bet for the last question.	S R L	**Useful Language** Can we steal the points? I think we know the answer.		40 min Done by 6:10pm
4	**Post Task** Tr asks Ss to make a circle for the final class discussion. Tr tells Ss that we are going to have a final reflection on the course. Tr tells Ss to use phrases for interrupting, keeping their turn, agreeing, disagreeing, asking for clarification and elaboration. Tr along with assistant Trs start off by saying something that they really enjoyed about the course and the experience. Each Tr talks for a few minutes before inviting Ss to	S R L	**Useful Language** One thing that was very useful/important was X. I had a good time doing X. X was my favorite because X.	**Agree, disagree, interrupting, keeping their turn, clarification and elaboration**	15 min Done by 6:25pm

	share something they liked about the class. Tr can ask the following questions if Ss need a bit of prompting. 1) What is something you couldn't do in English before but now you can do? 2) What do you consider to be the most important/useful thing you learned in the course? 3) What are some things that you still need to improve?		I still need to improve my X because X.		

Unit 3: Going International
Handout 113- Eye fixation

Instructions: Look at the symbol, word, or sequence in the first column. Then, circle the element that is identical in the other columns.

Line	Model to look at	Column A	Column B	Column C
1.	-*	--*	-*	*-
2.	^>	>^	^<	^>
3.	}}}\	}}}}\	}/}}	}}}\
4.	&*&	&*&	&&*	*&&
5.	heat	heap	hear	heat
6.	%$#&	%#$&	%$#&	&%#$
7.	Ppdf	Pdfd	Pfdf	Ppdf
8.	***#	***#	***$	***@
9.	9283	9238	9832	9283
10.	aerospace	arrowspace	aerospace	spaceaero
11.	.,.76	.,.67	76.,.	.,.76
12.	][%!	][!%	][%!	[%!]
13.	=-><	+-><	=-><	=-<>
14.	Jhdsfjghrue	Jhdsfjghreu	Jhdsfjghrue	Jhdsfjghure
15.	fluids	fluidS	FLuids	fluids
16.	765	756	755	765
17.	btr	brt	btr	tbr
18.	πΩσ	πΩσ	σπΩ	ΩΩσ
19.	◆■◆🗁	◆◆◆🗁	🗁◆■◆	◆■◆🗁
20.	aesthetics	esthetics	aesthetics	Aesthetics

Unit 3: Going International
Handout 114 A

Read the text below and write the main idea and two supporting details.

Germany Is Now Home to the World's Largest Wind Turbine

The German town of Gaildorf is now home to the world's largest wind turbine. Max Bögl Wind AG constructed the turbine, and its central hub alone measures some 178 meters (584 feet). When the length of the blade is added to that, the turbine's height is 246.5 meters (808.7 feet). The record-breaking turbine is part of a quartet of towers that all have hubs between 155 and 178 meters (508 and 583 feet) tall. They'll reportedly produce an average of 10,500MWh every year. To put that into context, the average U.S. household uses around 10MWh annually.

The project cost $81 million and is expected to provide a return of $7.6 million per year, according to a report by Elektrek.

Being home to the world's largest wind turbine isn't simply a matter of securing bragging rights — a taller turbine means more clean energy production. For every extra meter in turbine height, annual energy output increases by between 0.5 and one percent as a result of decreased turbulence and higher wind speeds.

Transitioning from fossil fuels to wind power is hugely beneficial to our environment. Already, wind farms have prevented more than 600 million tons of carbon dioxide emissions. Now, scientists and engineers are looking for ways to design bigger and bigger turbines so we can take advantage of their enhanced efficiency, and the sky really is the limit.

Main Idea	
Supporting Detail #1	
Supporting Detail #2	

Adapted from: https://futurism.com/germany-home-worlds-largest-wind-turbine/

Unit 3: Going International!
Handout 114 B

Read the text below and write the main idea and two supporting details.

650-Foot Wind Turbines For The Sea

Research scientists at SINTEF are collaborating with industry to find ways of building wind turbines up to 200 metres high. The largest wind turbines currently operating in the North Sea have an output of around six megawatts. The turbines of the future will be far bigger.

"We are looking into wind turbine structures capable of output of the order of 10 megawatts. Their overall structure will be about 200 metres in height and the actual rotor blades will have a diameter of 180 metres. The stresses on a structure of this scale are enormous," says Petter Andreas Berthelsen, Research Manager at SINTEF Ocean.

Building these innovative wind turbines demands additional knowledge of how the structures react to wind and waves, as well as how they affect the ground around their foundations. Research scientists will therefore try to develop more accurate and reliable methods for calculating loads on offshore wind turbines and in particular on the monopile itself.

Main Idea	
Supporting Detail #1	
Supporting Detail #2	

Adapted from: https://maritime-executive.com/blog/650-foot-wind-turbines-for-the-north-sea

Unit 3: Going International!
Handout 114 C

Read the text below and write the main idea and two supporting details.

New wind farm puts plans for Scotland's third national park at risk

PLANS to put up one of the world's tallest wind turbines in the Scottish Borders will destroy hopes of creating Scotland's third national park, campaigners have warned.

Cheshire-based Community Windpower has put forward proposals for a 46 turbine wind farm, some at a maximum height of 200 metres - which eclipses the London Eye by 65 metres, is nearly 30 metres higher than London's BT Tower and around the same height as the new Queensferry crossing.

But campaigners believe that the proposed Cliffhope Community Wind Farm within Wauchope Forest at the foot of the Cheviot Hills is in the middle of the planned national park and would extinguish all hopes of getting the special conservation designation for the Borders' internationally recognized countryside.

The farm's most easterly point is just half a mile from the English border and the heavily protected Northumberland National Park, Kielderhead National Nature Reserve, Whitelee Moor National Nature Reserve and the Kielder Forest Park.

The Scottish Government, which would make any ultimate decision on park designations has said the park proposal had "major cost implications and presents a number of complex administrative challenges for local and central government, as well as the communities the national parks would serve".

Main Idea	
Supporting Detail #1	
Supporting Detail #2	

Adapted from:
http://www.heraldscotland.com/news/homenews/15644339.New_wind_farm_puts_plans_for_Scotland_s_third_national_park_at_risk/