

# **Projects**

Technical Language II

First Semester 2020

Technical Language Area

# General Instructions

The projects will be done **individually** or in **pairs** at most.

The date to submit the report in digital version (Word and PDF) and oral presentation (a YouTube link with a video) is February 2<sup>nd</sup> until midnight (one day before the exam). The digital report and YouTube link will be sent to the following mail:

[ingles@ing.usac.edu.gt](mailto:ingles@ing.usac.edu.gt)

In the subject of the message of the mail students must include the following phrase: "Proficiency project, Technical English #", instead of the last symbol, place the number of course you are taking the exam about. In the body of the message place the names and ID's of all the member or members included in the project.

On the other hand, the written version of the report will be turned in during the exam (February 3<sup>rd</sup>) in a **letter size red folder** with fastener and a cover page identifying at least: name or names of the members, ID numbers (of the university), date, affiliation and the phrase "Proficiency project, Technical English #".

The following rubric must be included on the cover page:

Presentation	/ 15
Introduction	/ 15
Objectives	/ 15
State-of-the-art (Theory)	/ 10
Conclusions	/ 15
Annexes	/ 5
References	
Oral Presentation	/ 25

You will choose **ONLY ONE PROJECT** according to your career (or the closest one) or your partner's career (in case you did it in pairs).

# Civil Engineering

## Soil Testing

**Objective:** To learn and explain how to use a theodolite

**Activity:** To make a handbook of the theodolite usage.

**Description:**

- The students will choose a soil test that they will investigate to acknowledge the procedure, tools and purpose of it.
- They will present their investigation through a video presentation and a technical report.
- The students must prepare a written investigation with the following content:
  - Front Page
  - Index
  - Introduction
  - Objectives
  - Investigation
  - Conclusions
  - Annexes (At least 10 word technical glossary)
  - References (Bibliography)

It is compulsory to present the written report and the handbook the day of the oral presentation. Remember that the handbook must contain the summary of the investigation.

**Procedure:**

- The students will propose which test they are going to investigate to the project.
  
- The students will visit libraries and web sites to find all the information about the test they chose.
  
- The students will write a report that includes:
  - Index,
  - Introduction,
  - Objectives,
  - Investigation
    - Purpose of the test,
    - Procedure to follow,
    - Used tools,
  - Conclusions,
  - Annexes and link of the video

○ Bibliography.

□ They will upload a video to youtube, send the link at [ingles@ing.usac.edu.gt](mailto:ingles@ing.usac.edu.gt)

# Chemical / Environmental Engineering

## Mini-ecosystem

**Objective:** To know the balance of an ecosystem and how to maintain it

**Activity:** To build a Mini Ecosystem with plants, bugs, etc.

**Description:**

- investigate how the plants make the photosynthesis
- The students will explain how chemistry is involved in the process.
- The students will construct a mini ecosystem and they will present a logbook with the daily observations of the ecosystem.
- The students will prepare an oral presentation of the investigation. This must be described clearly in English in no more than 5 minutes.
- Students must prepare a written investigation with the following content:
  - Front Page
  - Index
  - Introduction
  - Objectives
  - Investigation
  - Conclusions
  - Annexes (At least 10 word glossary)
  - References (Bibliography)

# **Industrial Engineering**

## **Employees' Benefits in Guatemala**

**Objective:** To know the benefits that an employee has to have at any enterprise

**Activity:** To investigate all the benefits that an employer has to provide to the workers.

**Description:**

- The students will research the different benefits for employees in Guatemala (payments, health, etc).
- The students will prepare brochures with the information in English and Spanish about the benefits, and they will give the brochures to the students.
- They will prepare an oral presentation of the investigation. This must be described clearly in English in no more than 5 minutes.
- The students must prepare a written investigation with the following content:
  - Front Page
  - Index
  - Introduction
  - Objectives
  - Investigation
  - Conclusions
  - Annexes (At least 10 word glossary)
  - References (Bibliography)

# Science and Systems Engineering

## LINUX

**Objective:** To learn how to install and use LINUX.

**Activity:** To create a handbook and a tutorial for installing and using Linux.

**Description:**

- The students will research the principal characteristics of Linux
- The students will create a tutorial of installation of LINUX using a virtual machine.
- The students will explain the usage of Linux in an oral presentation .This must be described clearly in English in no more than 5 minutes.
- Students must prepare a written investigation with the following content:
  - Front Page
  - Index
  - Introduction
  - Objectives
  - Investigation
  - Conclusions
  - Annexes (At least 10 word glossary)
  - References (Bibliography)

# Mechanical and Mechanical-Industrial Engineering

## Welding Applications

**Objective:** To acquire the basic knowledge of how welding processes are done and how they are use in industrial applications.

**Activity:** To research the different types of welding

**Description:**

- The students will investigate the different types of welding and their applications in industries.
- The students will explain the required protection for welding and how to weld.
- The students will prepare a video tutorial explaining the usage of al list one welding device and its applications in industries. This must be described clearly in English in no more than 5 minutes.
- Students must prepare a written investigation with the following content:
  - Front Page
  - Index
  - Introduction
  - Objectives
  - Investigation
  - Conclusions
  - Annexes (At least 10 word glossary)
  - References (Bibliography)



# Electronics and Electrical Engineering

## Basic Components

**Objective:** To know at least 20 different components in circuits.

**Activity:** To identify 20 different components and describe the operation of at least 5 of them.

### **Description**

- The students will prepare a sample board / sample book with 15 different components
- The students member will explain the operating mode of one of these components.
- The Students must prepare a written investigation with the following content:
  - Front Page
  - Index
  - Introduction
  - Objectives
  - Investigation
  - Conclusions
  - Annexes (At least 10 word glossary)
  - References (Bibliography)