Exam 1

Course Title:	**Terminología Especializada en Documentos de Tecnología e Ingeniería**
Course ID:	**IT0627 (Marron, 25-2)**
Cohort ID:	**6A2**
Exam Date:	**13 Feb 2025**

General Instructions: Print your name in the upper right-hand corner of this paper. Read each item carefully. Be sure that you understand exactly what is being asked of you. Begin your answers on the backside of this paper if possible and add extra sheets of paper as needed. Be sure to write your name on any and all extra sheets of paper. Staple all exam papers together when you are finished.

Do not look at other student's exams. If you have a question or a request during the exam, raise your hand and the instructor will call on you.. Do not leave your desk without permission. If you finish early, raise your hand and the instructor will call on you.

This is a closed book exam. Attempt to answer all questions, even if you are uncertain. Whenever possible, provide answers in bullet list format with complete content. Tasks will be evaluated by sub-tasks. Three (3) points are available for each sub-task: Accuracy (1 pt), Completeness (1 pt), and Sufficiency (1 pt). Points will be awarded in 0.1 increments. Answer in English unless requested to do so otherwise.

Task 1 (6 pts)
Briefly summarize your paper on the history of a scientific discipline in Mexico. Recount the general history of the scientific field you selected, but focus on the present state of the discipline in Mexico.

Task 2 (6 pts)
Describe the mental process that engineers and scientists use to solve a problem. More specifically,

1. What is a first step that engineers and scientists are likely to take?
2. What are the accepted foundations for conceptualizing a problem?
3. What ASSUMPTIONS are made, consciously or not, when engineers and scientists begin modeling a problem?
4. Why are models useful for reaching a solution to a problem?

Task 3 (6pts)
Jargon is defined as the set of special words or expressions that are used by a particular profession or group and are difficult for others to understand. Answer the following related to jargon:

1. Why does jargon evolve in virtually any human endeavor?
2. Is scientific language considered jargon? Explain.
3. Compare and contrast " good" and " bad" jargon.

Task 4 (9 pts)
The human circulatory system can be thought of as a simple system. Read the following description of this simple system and answer the questions below.

The human circulatory system, in its most basic simplified form, consists of the heart, blood vessels, and the blood. The circulatory system is used to transport gases (oxygen and carbon dioxide), matter (nutrients and wastes), and heat (energy). The walls of the blood vessels and heart separate the internal circulatory system from the external environment.

1. Determine whether each of the following is an input or an output to the system.
    - Carbon Dioxide
    - Water
    - Waste
    - Heat
    - Oxygen
    - Nutrients

2. Determine whether each of the following is an intensive or extensive property of the system.
    - Blood pressure
    - Total number of red blood cells
    - Oxygen concentration in the blood
    - Blood temperature
    - Carbon dioxide concentration in the blood
    - Total blood volume
    - Total amount of oxygen transported

3. Is this an open, closed, or isolated system?

Task 5 (6 pts)

Give a definition of the following terms in both English and Spanish:

- mass
- charge
- linear momentum
- angular momentum
- energy

Task 6 (6 pts)

Translate the following abstract from Spanish to English.

En este trabajo se interpretan los daños y colapsos de edificaciones observados en el terremoto del 19 de septiembre 2017 en la Ciudad de México, los que ocurrieron en su mayoría en edificaciones a base de marcos que experimentaron el terremoto de 1985. Se encontró que las demandas espectrales para registros obtenidos en 1985 y 2017 son comparables, lo que sugiere explicar por qué llegaron a colapsos o daños severos en 2017 y no en 1985. Se emplea un índice de daño por sismo, Id, propuesto anteriormente por el autor, el cual toma en cuenta el daño por sismo acumulado. Se calculan valores de Id para edificaciones considerando registros de 1985 y registros de 2017, así como para el efecto combinado de estos registros. Los resultados indican que los colapsos y daños observados en marcos

en 2017, se explican considerando el efecto de daño por sismo acumulado. Se muestra además la conveniencia del empleo de edificaciones con muros estructurales para reducir el potencial de daños o colapsos ante terremotos fuertes. Se dan recomendaciones de cambios en normativas de construcción en la Ciudad de México y en el país.