Course Title: **Terminología Especializada en Documentos de Tecnología e Ingeniería**
Program and Track: **Interpretación y Traduccíon: 6° Cuatrimestre**
Course ID: **IT0627**
Cohort ID: **6A2**

Description

This course, which is the complement to Course IT0628 (Taller de Traducción Ingeniería y Adelantos Tecnológicos), will focus on the specialized terminologies, acronyms, and jargon used in selected engineering sciences and in the broader field of advanced technologies. The professional translational mapping tools developed in this course will be specific to Spanish and English translations.

Major elements of the course will include:

I. Foundations of Science and Engineering
II. Topics in Modern Science
III. Analysis, Evaluation, and Translation of Research Papers and Reviews
IV. Technology Futures in Mexico
V. Vocabulary Building

Scope and General Sequence

I. Foundations of Science and Engineering

1. The Language of Science and Engineering
    1.1 History, Structure and Function of Language in Science and Engineering
    1.2 Discipline-Specific Jargon: Good and Bad

2. Mental Models and Heuristics
    2.1 Mental Models in Worldview and in Problem Solving
    2.2 The Evolution and Use of Heuristics

3. Fundamental Concepts in Science and Engineering
    3.1 Conservation Laws
    3.2 Limitations of Mathematical Models
    3.3 Principle of Computational Equivalence
    3.4 Computational Irreducibility

4. Systems Analysis
    4.1 Definition of a System
    4.2 Elements and Relations
    4.2 Energy and Material Flows

II. Topics in Modern Science

1. Information Theory
    1.1 Shannon's Theory of Communication
    1.2 Entropy

2. Agent-Based Modeling
    2.1 Object-Oriented Programming
    2.2 NetLogo

3. Complexity Theory
    3.1 Types of Complexity
    3.2 Analysis of Complexity

4. Machine Learning
    4.1 Perceptrons
    4.2 Neural Networks

III. Analysis, Evaluation, and Translation of Research Papers and Reviews
1. Research Papers in Selected Engineering Disciplines
2. Reviews in Selected Scientific and Engineering Disciplines

IV. Technology Futures in Mexico
1. Semiconductor Engineering
2. Battery Engineering
3. Digital Design Engineering
4. Additional Engineering Options

V. Vocabulary Building

Expectations

Students will be expected to:

- Attend all classes on time
- Be prepared to take notes and access materials on-line
- Participate in all class activities, including discussions and presentations
- Complete all assignments and exams

Exit Criteria

Upon the successful completion of the course the student will be able to:

- Demonstrate a basic knowledge of the foundations for traditional science and engineering
- Analyze, evaluate, and translate selected topics in modern science
- Analyze, evaluate, and translate engineering and technology research papers and reviews
- Compare and contrast various technology futures in Mexico
- Design, develop, and implement personal dictionaries for the translation of specialized terminology in the engineering sciences
- Produce professional-quality deliverables

Interim Evaluations (Partials)		**Final Grade**	
Daily Work and Participation	10%	1P	25 %
Homework	60 %	2P	25 %
Interim Exam	30%	3P	25 %
		Final Exam	25 %