

Course Syllabi

1. TTIT-00051 CAPSTONE DESIGN II

2. 96 credits hours.

3. Bibliography

- Guía para la elaboración de propuestas de trabajos de integración curricular., Unidad de Titulación Carrera de Ingeniería Industrial, 2020
- Metodología de la investigación, Hernández Sampieri, R., Fernández Collado, C., & Baptista Lucio, P., 2016

4. Specific Course Information

- a. The Curricular Integration Unit 1 (UIC 1), in accordance with the Academic Regime Regulations (RA) is a subject designed to develop the protocol of a Curricular Integration Work that will be approved by the Board of Directors of the Faculty of Chemical Sciences. In the Industrial Engineering Career, the UIC 1, “validates professional competencies for addressing situations, needs, problems, dilemmas or challenges of the profession and contexts; from a reflective, researchive approach, and The UIC 1 course initiates the qualification process through three elements: scientific research tutorials, development of the protocol of the curricular integration work, and final approval of it. During the semester it will be assigned to learning: 5 hours of autonomous work and 1 hour of tutoring assistance. Those hours will be distributed between the tutoring session, learning activities and the elaboration of progress in the curricular integration work. This subject contributes to the following ABET learning results: RA1. Problem solving. It identifies, formulates and solves complex engineering problems by applying RA3 engineering, science and mathematics principles. It communicates professional topics to a range of audiences with RA4 effectiveness. Ethics and responsibility. It recognizes ethical and professional responsibilities in engineering situations to make informed judgments that should consider the impact of engineering solutions. in global, economic, environmental and social contexts RA7. Self-learning.
- b. Prerequisites:
 - INDU-00021 PRODUCTION CONTROL SYSTEMS

5. Learning Objectives of the Course

- a. Prepare the curricular integration work protocol according to the current qualification options in the Industrial Engineering Career, using the principles of the scientific method.
 - Identify a research problem, according to the problem cores of the Career, and its state of the art.
 - Select a method or alternative solution to the problem posed according to the current options
 - Define the main variables of the problem and its interrelations.
 - Draft a proto collo de investigación.
 - Defining ethical and professional responsibilities in your proposed degree work
 - Obtaining a favorable report from the Academic Career Council
 - Discovering new knowledge as required by your career proposal
- b. Learning Outcomes
 - Ra1. designs research on an industrial engineering problem and possible approaches to its solution by applying the scientific method.
 - Ra1. designs research on an industrial engineering problem and possible approaches to its solution by applying the scientific method.

- Ra3. draft a proposal for a protocol for curriculum integration work.
- Ra4. recognizes ethical and professional responsibilities in its proposed degree work considering the impact of engineering solutions in global, economic, environmental and social contexts.
- Ra3. draft a proposal for a protocol for curriculum integration work.
- Ra3. communicates your proposal for a degree to effective hearings
- Ra1. designs research on an industrial engineering problem and possible approaches to its solution by applying the scientific method.
- Ra1. designs research on an industrial engineering problem and possible approaches to its solution by applying the scientific method.
- Ra3. draft a proposal for a protocol for curriculum integration work.
- Ra1. designs research on an industrial engineering problem and possible approaches to its solution by applying the scientific method.
- Ra7. acquires and applies new knowledge as required by your proposed degree work, using learning strategies acquired in the career.

6. Course Topics

- Research problem
- Delimitation of the problem of research and hypothesis formulation
- State of the art and objects
- Development of the methodology
- Supplements to the curriculum integration work
- General