Course Syllabi

1. TICS-00046 REQUIREMENTS ENGINEERING
2. 96 credits hours.
3. Bibliography
   - Requirements Engineering: From System Goals to UML Models to Software Specifications, Axel van Lamsweerde , 2009
   - Practical model-based systems engineering, Jose L. Fernandez, Carlos Hernandez, 2019
   - Goal Modeling Techniques for Requirements Engineering, Darwish, Nagy Ramadan, and Bassem SM Zohdy, 2016
4. Specific Course Information
   a. The purpose of the Requirements Engineering (IR) course is to develop a common understanding of the needs, priorities and constraints relevant to a software system. Many software failures arise from incomplete understanding of the requirements or inadequate management of those requirements for the development of the software. The course provides students with knowledge in the field of Requirements Engineering through imparting theoretical knowledge and proposing workshops that The course covers aspects related to obtaining, evaluating, specifying and managing requirements.
   b. Prerequisites:
      - TICS-00042 PROJECT MANAGEMENT
      - TICS-00036 DATABASES II: ADMINISTRATION AND OPTIMIZATION
      - TICS-00045 SOFTWARE ENGINEERING
      - TICS-00047 ARTIFICIAL INTELLIGENCE
      - TICS-00067 OPERATING SYSTEMS
5. Learning Objectives of the Course
   a. Provide students with a knowledge of the techniques and tools of Requirements Engineering that allows them to develop skills to apply them and provide concrete solutions to information systems needs.
      - Understand the fundamental concepts, principles and techniques for Requirements engineering
      - Apply specific techniques for the execution of the different activities in the life cycle of the requirements.
      - Apply techniques for the assurance of the heating d of the requirements.
      - Apply techniques for the management of changes and evolution of requirements.
      - Create software artifacts related to the engineering of requirements by using tools to support the process
   b. Learning Outcomes
      - It explains the importance of requirements in the software development process.
      - Selects and applies techniques to anticipate changes in requirements, traceability management and change control.
      - It executes phases of the requirements engineering process and understands its interaction.
      - It explains the importance of requirements in the software development process.
      - It is able to express requirements in different formalisms, from agile development to security-critical systems.
      - It executes phases of the requirements engineering process and understands its interaction.

- Knows and applies techniques for quality assurance of requirements

6. Course Topics

- Introduction to the engineering of requirements
- Working framework for the engineering of requirements
- Insurance of quality of requirements
- Evolution of requirements
- Models of systems for the engineering of requirements