Analysis and Design of Information Systems

1. **Course number and name:** 020ADPES3 Analysis and Design of Information Systems

2. **Credits and contact hours:** 4 ECTS credits, 2x1:15 contact hours

3. **Name(s) of instructor(s) or course coordinator(S):** Tina Yaacoub

4. **Instructional materials:** PowerPoint slides; course handouts; exercises worksheets

5. **Specific course information**
   a. **Catalog description:**
      I.S (information systems) in the company. Data Analysis - Data Modeling - Merise Methodology - Static Model - Dynamic Model - Data Flow Diagram - Data Conceptual Model - Data Logic Model - Passage Rules - Conceptual Model of Treatments - Logic Model of Treatments - MCD, MCT, MLD, MOT, MPD, MoPT - Extension Merise 2

   b. **Prerequisites:** None

   c. **Required** for CCE Software Engineering option students; **Selected Elective** for CCE Telecommunication Networks option students

6. **Educational objectives for the course**
   a. **Specific outcomes of instruction:**
      - Understand the principles of implementation in the production process of a software system.
      - Analyze an information system from a document or survey to computerize it.
      - Propose evolutions and solutions for existing information systems.
      - Use a modeling tool to strengthen communication between project stakeholders and project documentation.
      - Design a database that meets the requirements of the information system.
      - Set up and deploy an information system.

   b. **PI addressed by the course:**

PI	1.1	1.2	1.3	2.1	2.3	2.5	3.1	3.2	5.1	7.1
Covered	x	x	x	x	x	x	x	x	x	x
Assessed	x	x	x		x		x	x	x	

7. **Brief list of topics to be covered**
   - The information system in the company (1 lecture)
   - The conceptual model of communication (1 lecture)
   - Dynamic description of the IS (1 lecture)
   - Functioning of a dynamic model + exercises MCT and MOT (2 lectures + exercises)
   - The physical data model (PDM) (1 lecture)

- The Operational Model of Treatment (MoPT) (1 lecture)
- Static description of the information system (1 lecture)
- Properties (1 lecture)
- The entity or individual-type (1 lecture)
- The association (or relationship-type) (1 lecture)
- CDM construction rules – direct (3 lectures + exercises)
- Rules for building a CDM - by analyzing Functional Dependencies (1 lecture)
- Logical model of data + exercises (2 lectures + exercises)
- The rules of transition from the MCD to the relational model + exercises (1 lecture)
- Generalization / specialization of entities - MERISE 2 (1 lecture)
- Generalization / specialization of associations - MERISE 2 + exercises (2 lectures + exercises)
- Realization: Case study - self-evaluation (3 sessions)
- Work on projects (4 sessions)