Relational Databases

1. **Course number and name:** 020BDRES2 Relational Databases

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

3. **Instructor's or course coordinator's name:** Jihad Renno

4. **Text book:**
   a. **Other supplemental materials:**
      Course document + exercises worksheets

5. **Specific course information**
   a. **Catalog description:**
      Introduction to databases - Relational model - Relational algebra - Functional dependencies - Normal forms - Relational database construction theory - Data dictionary, SQL (DDL, DML), Views, Triggers, PL / SQL, Stored Procedures and Functions,.

   b. **Prerequisites or co-requisites:**

   c. **Required:** Required for CCE students

6. **Specific goals for the course**
   a. **Specific outcomes of instruction:**
      - Understanding logical models of databases
      - Solve and optimize an algebraic query
      - Design database structures through functional dependencies
      - Normalize a database
      - Implementing a database
      - Manipulate retrieve data
      - Manipulate Views in a RDB
      - Manipulate Triggers in a RDB
      - Responding to informal logical IT requests by translating them into SQL
      - Establish a PL / SQL programmatic resolution when necessary.
      - Apply the life cycle of a BDR, namely: design, implementation and use. RDBMS: MySQL, ORACLE

   b. **KPI:**

KPI	a1	e3	h1	i1	j1	k1	k2	k3
Covered	x	x	x	x	x	x	x	x
Assessed		x				x	x	x

7. Brief list of topics to be covered
- Basic concepts (1 lecture)
- Logical models of databases (1 lecture)
- The relational model (1 lecture)
- The relational algebra (2 lectures + exercises)
- Functional dependences (2 lectures + exercises)
- Normalization (2 lectures + 1 exercises)
- Use of a relational DBMS (1 lecture)
- Implementation of a DBMS (1 lecture)
- Language of relational manipulation: SQL (3 lectures)
- the database views (1 lecture)
- The database triggers (2 lecture + exercises)
- PL-SQL language (2 lectures)
- PL-SQL, stored procedures and functions (2 lecture + exercises)
- Practical works (4 sessions)