Building Information Modeling

1. **Course number and name:** 020BIMNI4 Building Information Modeling

2. **Credits and contact hours:** 2 ECTS credits, 1x1:15 contact hours

3. **Name(s) of instructor(s) or course coordinator(s):** Ghassan Hachem, Rafic Faddoul

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

5. **Specific course information**
   a. **Catalog description:**
      This course enables the civil engineering students to get to know the notion of BIM (Building Information Modeling) , its impact on the construction industry through the software « Revit Structural » from Autodesk . the initiation to BIM will be carried out through multiple examples , exercises reaching the level of being able to create a 3D model.

   b. **Prerequisites:** None

   c. **Required/Selected Elective/Open Elective:** Required

6. **Educational objectives for the course**
   a. **Specific outcomes of instruction:**
      - Utilize the software REVIT from Autodesk aiming to enable the students to create and model structural elements of buildings.
      - Create a BIM model from a CAD file .
      - Learning how to modify , save , insert structural elements ,
      - Explain and utilize the information received in class.
      - Elaborate a model clear and well presented to be presented to civil engineers and future clients.

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

PI	1.3	2.1	7.1
Covered	x	x	x
Assessed	x	x	x

7. **Brief list of topics to be covered**
   - Introduction to BIM – Installation of REVIT STRUCTURAL
   - GRIDS – LEVELS (DATUM)
   - Columns (Steel – Reinforced Concrete) -Slanted and Architectural Columns
   - Foundation-Footings placement including slab on grade
   - Reinforced concrete wall placement and modifications – Retaining walls including bearing and retaining walls footings
   - Beams placement and modifications including beam system
   - Floor (Solid slabs) – floor placement and modification
   - Floor openings (Shafts) – Walls openings
   - Architectural sloped Roofs
   - Circulation : Stairs & Ramps
   - Creating sections – Call out Views – Framing elevations
   - Annotation (Dimensions) – Text- Region – Component detail
   - Structural Reinforcement – Rebars Placement (Columns- Beams – Slabs-Footings-Walls) – Concrete Cover
   - CAD to REVIT