

Course Syllabi
020BEPGS5 Pre-stressed Concrete

1. **Course number and name:** 020BEPGS5 Pre-stressed Concrete
2. **Credits and contact hours:** 4 Credits, 35 course hours
3. **Instructor's or course coordinator's name:** Georges ABOU SLEIMAN
4. **Text book and other supplemental material:**
 - a. Class notes and Exercises.
 - b. Eurocode 2.
5. **Specific course information**
 - a. **Catalog description:** Provide the necessary elements to understand and design the Prestressed Concrete Structure: Historical, different Procedures of execution and dimensioning and calculation of pre-tensioning and post-tensioning structure.
 - b. **Prerequisites:** 020BEAGS3 Reinforced Concrete.
 - c. **Required/Elective/Selected Elective:** Required major for Public Works and Transport Specialty students.
6. Specific goals for the course
 - a. **Specific outcomes of instruction:**
 - Historical View of Prestressed Concrete.
 - Different Procedures of Prestressed.
 - Losses Calculation of Prestressed cables.
 - Flexure in Service and Ultimate Design of Prestressed Concrete.
 - Shear Design.
 - Material characteristically and behavior.
 - Composite Beams design.
 - Hyperstatical system: Continuous beams and Post-Tensioning bridges exercises.

b. KPIs addressed by the course:

KPI	a2	c1	c2	e1	e2
Covered	x	x	x	x	x
Assessed					
Give Feedback					

7. **Topics and approximate lecture hours:**

Continuity in pre-stressed concrete beams definition and design (1.5 hours).
Exercise on a composite post-tensioning girders bridge (4.5 hours).
Exercise on Post-tensioning continuous deck bridge design (12 hours).