**CIVL 491: Construction Methods (3 Credits)**

This course focuses on the components and methods of construction, including earthwork, foundations, wood, steel and concrete construction, roofing and cladding as well as interior construction. *(Prerequisite: CIVL 321)*

**Course Learning Outcomes:**

By the end of the course, students will be able to:

A1. Demonstrate advanced knowledge associated to construction of sub structures and superstructures.

A2. Describe the basic processes of designing and constructing a building.

B1. Analyze methods, materials, and equipment used to construct civil projects.

B2. Perform the proper selection, application, utilization, and productivity of heavy equipment.

C1. Improve teamwork and team-building skills by working on a real-life construction project.

**Course Learning Materials:**

* Allen E., Iano J., Fundamentals of Building Construction: Materials and Methods, Wiley.
* Watts A., Modern Construction Handbook, Birkhäuser.
* Nunnally S., Construction Methods and Management, Pearson Education

**Course Content:**

1. Earthmoving Materials and Operations
2. Excavating and Lifting
3. Loading and Hauling
4. Compacting and Finishing
5. Production of Aggregate, Concrete and Asphalt Mixes
6. Paving and Surface Treatments
7. Compressed Air and Water Systems
8. Masonry Construction
9. Steel Construction
10. Contract Construction
11. Construction Safety, Health, and Equipment Maintenance
12. Improving Productivity and Performance