# Course Syllabus

1. **Course Title:** Project of Construction Technique and Management
2. **Course Code:** PTCM310619
3. **Credit Units:** 1 (1/0/2) (1 units of theory/ 0 unit of practice/ 2 units of self-study)
   Duration: 15 weeks (1 hours of theory+0*2 hours of practice, and 2 hours of self-study per week)
4. **Course Instructors**
   1/ Dr. Hà Duy Khánh
   2/ Dr. Nguyễn Đình Hiển
   3/ MSc. Nguyễn Văn Khoa
   4/ MSc. Nguyễn Thanh Tú
5. **Course Requirements**
   Prerequisite courses: Construction Technique (COTE340319)
   Previous courses: Construction Management and Safety (CMSA330419)
   Parallel courses: None
6. **Course Description**
   The subject provides students with the knowledge and technical skills of construction, organization of construction, and construction machines and equipment in civil and industrial projects. The modules offer work requirements that a construction engineer must do in specific situations.
7. **Course Goals**

| Goals | Goal Description | Programme ELOs |
|---|---|---|
| **G1** | Practice specialized knowledge in the field of construction method design for underground works (excavation, pit wall, dewatering), above-ground works (column, slab, beam, roof) for a civil project, | 1.2, 1.3 |
| **G2** | Establish ability on analysis, explanation and inference for solving technical problems related to construction method statements for structural elements. | 2.3, 2.4, 2.5 |
| **G3** | Develop schedule and layout of construction | 4.1, 4.2, 4.4, 4.5 |

8. **Course Learning Outcomes (CLOs)**

| CLOs | | CLO Description | Programme ELOs |
|---|---|---|---|
| **G1** | **G1.1** | Describe possible construction methods for underground works and aboveground works. | 1.2 |
| | **G1.2** | Understand component of construction technique for basic elements of underground works and aboveground works | 1.3 |

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| | **G1.3** | Understand structure of formwork activity for structural elements: foundation, beam, column, and slabs | 1.2, 1.3 |
| **G2** | **G2.1** | Calculate and design soil excavation and embankment, and concrete casting. | 2.3, 2.4 |
| | **G2.2** | Design formwork for basic structural elements | 2.3, 2.4 |
| | **G2.3** | Develop construction plans and schedule | 2.3, 2.4, 2.5 |
| **G3** | **G3.1** | Have good working style and active learning | 4.1, 4.2 |
| | **G3.2** | Frequently update the new construction standards in developing and executing plans in practice. | 4.4, 4.5 |

## 9. Learning Resources

- Textbooks:

1. Đỗ Đình Đức, Lê Kiều, Construction Technique, Part 1 & 2, Ha Noi Construction Publisher, 2nd edition, 2004.
2. Nguyễn Văn Hùng, Construction Machines, Ha Noi Science and Technology Publisher, 2nd edition, 2002.
3. Ngô Quang Tường, Q&A for Problems of Construction Techniques, VNU-Ho Chi Minh City Publisher, 2003.
4. Trịnh Quốc Thắng, Layout Construction Design, Xay Dung Publisher, 2000.
5. Lưu trường Văn, Lê Hoài Long, Safety Technology and Management in Construction, 2007.
6. Construction Units in Estimating, Ministry of Construction, 1994.
7. Handbook of Construction Machines, Ministry of Construction, 1995.

- References:

1. Lê Văn Kiểm, Assembly Construction Techniques, Ha Noi Construction Publisher, 2003.
2. Nguyễn Đình Hiện, Construction Techniques, Ha Noi University of Architecture, 2003.

## 10. Student Assessment

- Grading scale: **10**
- Assessment plan:

| **Type** | **Content** | **Timeline** | **Assessment method** | **CLOs** | **Rate (%)** |
|---|---|---|---|---|---|
| **Direct defense** | | | | | **100** |
| | The content of the defense covers all the CLOs of this course. | After week 15 | Report and Questions | G1.1, G2.1, G2.2, G2.3, G3.1, G3.1 | |

## 11. Course Content

| Week | Content | CLOs |
|---|---|---|
| 1 | ***Chapter 1: Work Assignments*** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>1.1 Data analysis and calculation<br>**Pedagogical methods**:<br>+ Presentation of lecture | G1.1, G1.2, G1.3 |
| | **B/ Self-study content**: *(2h)*<br>1.2 Performance of requirements. | G1.1 |
| 2 | ***Chapter 2:*** **General Guide** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>2.1 Selection of construction methods for underground works and aboveground works.<br>**Pedagogical methods**:<br>+ Presentation of lecture | G1.1, G2.1, G2.2, G2.3 |
| | **B/ Self-study content**: *(2h)*<br>2.2 Study more theory related to the calculation and design | G2.1, G2.2, G2.3 |
| 3 | ***Chapter 3:*** **Quantity of materials, equipment and machines** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>3.1 Calculation of quantity of materials, equipment and machines<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>3.2 Calculate the volume of soil, quantity of materials according to other specific cases | G2.1, G2.2, G2.3 |
| 4 | ***Chapter 4:*** **Calculation of concrete volume and structure of formwork** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>4.1 Calculate soil quantity, and design construction solutions for underground works<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>4.2 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 5 | ***Chapter 4:*** **Calculation of concrete volume and structure of formwork (cont.)** *(1h,0,2h)* | |

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| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>4.3 Design formwork for foundation; and propose construction methods for underground works.<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>4.4 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 6 | ***Chapter 4:*** **Calculation of concrete volume and structure of formwork (cont.)** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>4.5 Design formwork for beam, slab and column; and propose construction methods for aboveground works.<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>4.6 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 7 | ***Chapter 4:*** **Calculation of concrete volume and structure of formwork (cont.)** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>4.7 Prepare construction methods for concrete casting<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>4.8 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 8 | ***Chapter 4:*** **Calculation of concrete volume and structure of formwork (cont.)** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>4.9 Select machine to transport materials and equipment for construction<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>4.10 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 9 | ***Chapter 5:*** **Construction schedule and construction site layout** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>5.1 Develop solutions for construction site layout and management<br>**Pedagogical methods**: | G2.1, G2.2, G2.3, G3.2 |

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| | + Presentation of lecture | |
| | **B/ Self-study content**: *(2h)*<br>5.2 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 10 | ***Chapter 5:*** **Construction schedule and construction site layout (cont.)** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>5.3 Identify duration and relationship between activities, and identify the need of resource for each activity<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>5.4 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 11 | ***Chapter 5:*** **Construction schedule and construction site layout (cont.)** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>5.5 Propose and select the solution for construction site layout<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>5.6 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 12 | ***Chapter 5:*** **Construction schedule and construction site layout (cont.)** *(1h,0,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>5.7 Make drawings for construction site layout<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>5.8 Perform the modified contents and prepare next contents | G2.1, G2.2, G2.3 |
| 13 | ***Chapter 6:*** **Report finishing** *(1h,0h,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>6.1 Guide students process and finish their drawings and calculation<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>6.2 Perform the modified contents | G2.1, G2.2, G3.2 |
| 14 | ***Chapter 6:*** **Report finishing** *(1h,0h,2h)* | |

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| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>6.3 Project finishing<br>**Pedagogical methods**:<br>+ Presentation of lecture | G2.1, G2.2, G2.3, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>6.4 Perform the modified contents | G2.1, G2.2, G3.2 |
| 15 | **Project defense** *(1h,0h,2h)* | |
| | **A/ Content and pedagogical methods in class***: (1h)*<br>**Content:**<br>- Test students' knowledge which have done in the project<br>**Pedagogical methods**:<br>- Question-based test | G1.2, G2.1, G2.2, G2.3, G3.1, G3.2 |
| | **B/ Self-study content**: *(2h)*<br>+ Finish the project | G1.2, G2.1, G2.2, G2.3, G3.1, G3.2 |

**12. Learning Ethics**

Students must do homework by themselves. If plagiarism is found, students will get zero point.

**13. Date of first approval:** August 1st, 2012

**14. Approved by**

| Dean | Head of Department | Instructor |
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| **A/Prof. Dr. Nguyễn Trung Kiên** | **MSc. Nguyễn Văn Khoa** | **Dr. Hà Duy Khánh** |

**15. Date and Up-to-date content**

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| **1st time:** Date: | Instructor:<br><br>Head of Department: |