

# Course Syllabus

**1. Course Title:** Construction Technique Practice

**2. Course Code:** COTP320519

**3. Credit Units:** 2 (0/1/2) (0 units of theory/ 1 unit of practice/ 2 units of self-study)

Duration: 15 weeks (0 hours of theory+6 hours of practice, and 12 hours of self-study per week)

**4. Course Instructors**

1/ MSc. Bùi Phạm Đức Tường

2/ MSc. Nguyễn Văn Khoa

3/ MSc. Nguyễn Thanh Tú

4/ Dr. Hà Duy Khánh

**5. Course Requirements**

Prerequisite courses: None

Previous courses: Construction Technique (COTE340319)

Parallel courses: None

**6. Course Description**

This is the course that aims to provide students with practical skills in the field. Students can do some practical construction activities such as mason work, painting work, formwork work, rebar fabrication/ installation, concreting work, and tiling work for beam, column and wall. In addition, students can use some construction equipment and tools such as drilling machine, cutting machine, concrete mixing machine, etc.

**7. Course Goals**

Goals	Goal Description	Programme ELOs
G1	Explain, infer and practice some commonly specified construction activities.	1.2, 2.4, 2.5
G2	Build ability team work, communication, and make report	3.1, 3.2
G3	Establish ability of applying knowledge to develop construction procedure system for workers and control quality of work.	4.3, 4.5

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

CLOs	CLO Description	Programme ELOs
G1	G1.1 Make list of construction activities, be able to use construction equipment and tools competently in order to make working conditions safe and convenient.	1.2
G2	G2.1 Do some typical construction activities well including formwork, rebar, mason, painting, tiling work.	2.4, 2.5
	G2.2 Know specifications and methods of use and maintenance of the machinery normally used by construction workers.	4.3, 4.5

<b>G3</b>	G3.1	Have ability to work in groups to discuss and resolve issues related to the situation of construction practice, laws and regulations in the implementation of the construction contract.	3.1, 3.2
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### 9. Learning Resources

1. Đỗ Đình Đức, Lê Kiều, Construction Technique, Part 1 & 2, Ha Noi Construction Publisher, 2<sup>nd</sup> edition, 2004.
2. Vietnamese Construction Standard: TCXDVN 285-2002, TCXDVN 371-2006, TCXDVN 296-2004, TCXDVN 305-2004, TCXDVN 313-2004 ;
3. Vietnamese Construction Law No. 50/2014/QH13;
4. Circular 05/2007 / TT-BXD dated 25/07/2007 of the Ministry of Construction;
5. Disclosure on Norms of construction project management, investment and consulting cost " dated 08/14/2007 of the Ministry of Construction.
6. Handbook for Selecting Construction Machine;
7. Construction and Finishing Techniques for Civil Projects, Ha Noi Construction Publisher.

### 10. Student Assessment

- Grading scale: **10**

- Assessment plan:

Type	Content	Timeline	Assessment method	CLOs	Rate (%)
<b>Assignments</b>					<b>50</b>
BT#1	Fabricate and install formwork for structural elements	Week 2	Direct test on product	G1.2, G2.4, G2.5	10
BT#2	Fabricate and install rebar for beam and slab	Week 4	Direct test on product	G1.2, G2.4, G2.5	10
BT#3	Do mason works for brick wall and column	Week 9	Direct test on product	G1.2, G2.4, G2.5	10
BT#4	Do painting works for a wall	Week 11	Direct test on product	G1.2, G2.4, G2.5	10
BT#5	Do tiling works for a slab and a wall	Week 13	Direct test on product	G1.2, G2.4, G2.5	10
<b>Final exam</b>					<b>50</b>
	The contents used for the final test cover all the CLOs above	After week 15	Question-based test and practical skill	G1.2, G2.4, G2.5; G3.1, G3.2; G4.3, G4.5	50

<b>Total</b>	<b>100</b>
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### 11. Course Content

Week	Content	CLOs
1	<b>Chapter 1: Overview on Construction Technique (0h,6h,12h)</b>	
	<b>A/ Content and pedagogical methods in class: (6h)</b> <b>Content:</b> <ul style="list-style-type: none"> <li>- Review general knowledge on construction techniques</li> <li>- Summarize construction activities which workers frequently do on site</li> </ul> <b>Pedagogical methods:</b> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5
	<b>B/ Self-study content: (12h)</b> <ul style="list-style-type: none"> <li>+ Construction Law;</li> <li>+ Decree No. 15/ 2013;</li> <li>+ Labor Law</li> </ul>	G1.2, G3.1, G3.2
2	<b>Chapter 1: Overview on Construction Technique (cont.) (0h,6h,12h)</b>	
	<b>A/ Content and pedagogical methods in class: (6h)</b> <b>Content:</b> <ul style="list-style-type: none"> <li>- Introduce construction engineering practice;</li> <li>- Make construction methods for several activities;</li> <li>- Make construction site layout</li> <li>- Distribute labor and materials for activities;</li> <li>- Analyze techniques for construction, as well as errors happened during execution;</li> <li>- Make schedule for providing materials, equipment and tools</li> </ul> <b>Pedagogical methods:</b> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5
	<b>B/ Self-study content: (12h)</b> <ul style="list-style-type: none"> <li>+ Construction weekly schedule, and construction estimating;</li> <li>+ Comparison of construction practice between Vietnam and other developed countries</li> </ul>	G1.2, G3.1, G3.2
3	<b>Chapter 2: Practice of formwork activity (0h,6h,12h)</b>	
	<b>A/ Content and pedagogical methods in class: (6h)</b> <b>Content:</b> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Fabricate and install formwork for foundation, column, beam and slab</li> <li>- Do clearance</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5

	<p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Formwork for staircase</li> <li>+ Accidents related to formwork system</li> </ul>	G1.2, G3.1, G3.2
4	<p><b>Chapter 3: Practice of rebar activity (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Fabricate and install rebar for foundation, column, beam and slab</li> <li>- Do clearance</li> </ul> <p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Rebar fabrication/ installation for staircase, elevator</li> <li>+ How to cut rebar with minimum redundancy?</li> </ul>	G1.2, G3.1, G3.2
5	<p><b>Chapter 4: Practice of mason activity for brick wall (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform mason activity for 100mm brick wall</li> <li>- Do clearance</li> </ul> <p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Perform mason activity for 200mm brick wall</li> <li>+ Inspection of brick wall</li> </ul>	G1.2, G3.1, G3.2
6	<p><b>Chapter 5: Practice of mason activity for brick column (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform mason activity for 200mm brick column</li> <li>- Do clearance</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5

	<p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Perform mason activity for 250mm and 300mm brick column</li> <li>+ Inspection of brick column</li> </ul>	G1.2, G3.1, G3.2
7	<p><b>Chapter 6: Practice of mason activity for curved brick wall (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform mason activity for curved brick wall</li> <li>- Do clearance</li> </ul> <p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Perform mason activity for wall and column combined, step of staircase</li> <li>+ Perform mason activity for foundation</li> </ul>	G1.2, G3.1, G3.2
8	<p><b>Chapter 7: Practice of plastering activity for brick wall (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform plastering activity for 100mm brick wall</li> <li>- Do clearance</li> </ul> <p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Perform plastering activity for 200mm brick wall</li> <li>+ Inspection of brick wall</li> </ul>	G1.2, G3.1, G3.2
9	<p><b>Chapter 8: Practice of plastering activity for brick column (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform plastering activity for 200mm brick column</li> <li>- Do clearance</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5

	<p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Perform plastering activity for concrete column</li> <li>+ Techniques for plastering a column with thickness of mortar more than 2cm</li> <li>+ Inspection of brick wall</li> </ul>	G1.2, G3.1, G3.2
10	<p><b>Chapter 9: Practice of mastic activity for wall and column (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform mastic activity for brick wall and column in 2 layers</li> <li>- Do clearance</li> </ul> <p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Types of mastic in construction</li> </ul>	G1.2, G3.1, G3.2
11	<p><b>Chapter 10: Practice of painting activity (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform painting activity for wall and column in 2 layers</li> <li>- Do clearance</li> </ul> <p><b>Pedagogical methods:</b></p> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5
	<p><b>B/ Self-study content: (12h)</b></p> <ul style="list-style-type: none"> <li>+ Types of painting in construction</li> <li>+ Causes of failure for painting works</li> </ul>	G1.2, G3.1, G3.2
12	<p><b>Chapter 11: Practice of tiling activity for a slab (0h,6h,12h)</b></p>	
	<p><b>A/ Content and pedagogical methods in class: (6h)</b></p> <p><b>Content:</b></p> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform tiling activity for a slab</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5

	<ul style="list-style-type: none"> <li>- Do clearance</li> </ul> <b>Pedagogical methods:</b> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	
	<b>B/ Self-study content: (12h)</b> <ul style="list-style-type: none"> <li>+ Causes of failure for tiling works</li> </ul>	G1.2, G3.1, G3.2
13	<b>Chapter 12: Practice of tiling activity for a wall (0h,6h,12h)</b>	
	<b>A/ Content and pedagogical methods in class: (6h)</b> <b>Content:</b> <ul style="list-style-type: none"> <li>- Prepare tools and plans</li> <li>- Calculate volume of materials necessary</li> <li>- Perform tiling activity for a wall</li> <li>- Do clearance</li> </ul> <b>Pedagogical methods:</b> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> <li>+ Discussion on practical problems related.</li> <li>+ Practical performance (5-7 students per each group)</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5
	<b>B/ Self-study content: (12h)</b> <ul style="list-style-type: none"> <li>+ Causes of failure for tiling works</li> </ul>	G1.2, G3.1, G3.2
14	<b>Chapter 13: Test and Work Inspection (0h,6h,12h)</b>	
	<b>A/ Content and pedagogical methods in class: (6h)</b> <b>Content:</b> <ul style="list-style-type: none"> <li>- Guide inspection works based on current standards</li> <li>- Inspect performed elements</li> <li>- Do clearance</li> </ul> <b>Pedagogical methods:</b> <ul style="list-style-type: none"> <li>+ Presentation of lecture</li> </ul>	G1.2, G2.4, G2.5, G3.1, G3.2, G4.3, G4.5
	<b>B/ Self-study content: (12h)</b> <ul style="list-style-type: none"> <li>+ Study Laws, Decrees and other documents related to construction activities;</li> <li>+ Do report</li> </ul>	G1.2, G3.1, G3.2
15	<b>Report defense (0h,6h,12h)</b>	
	<b>A/ Content and pedagogical methods in class: (4h)</b> <ul style="list-style-type: none"> <li>- Student's presentation</li> <li>- Group report;</li> <li>- Questions</li> </ul>	G3.1, G3.2
	<b>B/ Self-study content: (8h)</b> <ul style="list-style-type: none"> <li>+ Do final report and submit</li> </ul>	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 1<sup>st</sup>, 2012

**14. Approved by**

**Dean**

**Head of Department**

**Instructor**

**A/Prof. Dr. Nguyễn Trung Kiên**

**MSc. Nguyễn Văn Khoa**

**MSc. Bùi Phạm Đức Tường**

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

<b>1<sup>st</sup> time:</b> Date:	Instructor:  Head of Department:
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