Course Syllabus

1. **Course Title:** COnstruction Inspection Practice
2. **Course Code:** COIP412217
3. **Credit Units:** 1 credits (0/1/2) (0 unit of theory/ 1 units of practice)
   Duration: 8 weeks (0 hours of theory + 5 hours of practice, and 5 hours of self-study per week)
4. **Course Instructors**
   1/ Dr. Le Anh Thang
   2/ MSc. Nguyen Van Khoa
   3/ Dr. Tran Tuan Kiet
   4/ Dr. Le Trung Kien
   5/ Dr. Phan Duc Hung
   6/ MSc. Bui Pham Duc Tuong
   7/ MSc. Nguyen Thi Thuy Hang.
5. **Course Requirements**
   Prerequisite courses: None
   Previous courses: Construction Materials (COMA220717)
   Parallel courses: None
6. **Course Description**

   Inspection of construction structure aims to strengthen the knowlege of Specifications, practice skills of experiments checking/ inspecting the quality of works.

7. **Course Goals**

Goals	Goal Description	Programme ELOs
G1	Analyzing ability and identify the quality of construction components, construction items.	2.2
G2	Ensuring the working safety during the experiment processes; creating experiment samples.	2.5
G3	Organizing groups implementing experiment, reporting the results and reading the instruction document of equipments in English.	3.1,3.2,3.3
G4	Ability writing the checking outlines and describing the indicators needed to evaluate a construction component, a construction phase.	4.6

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

CLOs		CLO Description	Programme ELOs
G1	**G1.1**	Having knowledge of checking the quality of construction components	2.2
G2	**G2.1**	Working safety regulations in the laboratory	2.5

	G2.2	Having knowledge of the labor safety regulations in the process of sampling, and field experiments	2.5
G3	**G3.1**	Assign work among team members to perform experiments	3.1
	G3.2	Writing reports and presenting test results	3.2
	G3.3	Reading the equipment documents in English	3.3
G4	**G4.1**	Based on the construction situation, detail testing outlines can be written for every experiment components that are needed for evaluation of a construction work	4.6

9. Learning resources

All following learning resources will be sent to student throughout learning management system (LMS) of the University.

- Textbooks:

1. Textbook of construction techniques, volume I and II.

- References:

2. TCXDVN 285-2002, TCXDVN 371-2006, TCXDVN 296-2004, TCXDVN 305-2004, TCXDVN 313-2004 ...

10. Student assessment

- Grading point: **10**
- Assessment plan

Type	Content	Timeline	Assessment method	CLOs	Rate (%)
Quiz					**10**
KT#1	Evaluating knowledge and evaluating observance of work safety regulations and laboratory regulations	Beginning of each lesson	Oral	G2.1	
Homework + attendance					**40**
BT#1	Fabrication of specimens for experiments	2nd Week	Product evaluation		10
BT#2	Concrete testing using a rebound hammer and combining ultrasound	6th Week	Product evaluation		10
BT#3	Presentation of topics in practice	7,8th Week	Product evaluation	G3.1,G3.2, G3.3	20
Final exam					**50**
	- The content covers all the course learning outcomes - Submit a report	G1.1, G2.2, G3.2, G4.1	Oral	G1.1, G2.2, G3.2, G4.1	

11. Course Content

Week	Content	CLOs
1	***Chapter 1:*** **Overview of quality inspection of construction works** *(0/5/10)*	

	A/ Content and pedagogical methods in class: *(5)*	G1.1, G2.1
	Content: + The concept of construction inspection + Principle selection of inspection organizations + Requirements of inspection organizations + The order for inspection + Syllabus of inspection works + General inspection steps + Inspection steps for an incident works + Estimating cost of inspection + Announcing the rules, safety regulations in a laboratory and industrial hygiene of laboratory **Pedagogical methods:** + Theoretical lecturer + PowerPoint Presentation + Discussion + Divide students into 3 groups (5-8 students a group) to conduct independent experiments for a whole semester	
	B/ Self-study content: *(10)* + Self-study about the construction process, and construction works + Self-study about component of concrete mix for casting samples of 15x15x60cm	G1.1
2	***Chapter 2:*** **Checking the concrete strength by non-destructive methods (using a rebound hammer combining ultrasound on a concrete sample of 15x15x60cm)** *(0/5/10)*	
	A/ Content and pedagogical methods in class: *(5)*	G3.1, G3.2, G3.3, G4.1, G2.2
	Content: Creating specimens + Introduction of laboratory instruments + Instruction steps for experiment + Hygiene of laboratory instruments Regulations on labor safety **Pedagogical methods:** + Theoretical lecturer, sample manipulation + Discussion + Observation, instructions of experimental manipulation	
	B/ Self-study content: *(10)* + Writing experiment reports, preparing for presentation	G4.1
3	***Chapter 2:*** **Checking the concrete strength by non-**	

	destructive methods (using a rebound hammer combining ultrasound on a concrete sample of 15x15x60cm) *(continue) (0/5/10)*	
	A/ Content and pedagogical methods in class: *(5)*	G3.1, G3.2, G3.3, G4.1
	Content: - Determining the compressive concrete strength by using the unbound hammer + Scope of application + General requirements + The unbound hammer requirements and regulations during doing experiment + Checking, evaluating strength and homogeneity of the in-situ concrete - Combining ultrasonic and the unbound hammer for determination of concrete strength. **Pedagogical methods:** + Theoretical lecturer + Discussion + Observation, instructions of experimental manipulation	
	B/ Self-study content: *(10)* + Writing experiment reports, preparing for presentation	G4.1
4	***Chapter 3:*** **Checking the quality of concrete by drilling sampling (destructive experiment)** *(0/5/10)*	
	A/ Content and pedagogical methods in class: *(5)*	G2.2, G3.1, G3.2, G3.3, G4.1
	Content: - Determine the strength of concrete components by drilling sampling - Regulations of safety during sampling **Pedagogical methods:** + Theoretical lecturer + Discussion + Calculating the experiment data results	
	B/ Self-study content: *(10)* + Writing experiment reports, preparing for presentation	G4.1
5	***Chapter 4:*** **Method of ultrasonic pulses for determining the uniformity of concrete in a bored pile** *(0/5/10)*	
	A/ Content and pedagogical methods in class: *(5)*	G3.1, G3.2, G3.3, G4.1
	Content: + Scope of application	

	+ General regulations + Glossary + Laboratory equipment + Requirements about installation of ultrasonic pipes in a bored pile + In-situ experiment + Evaluate experiment results + Report experiment results **Pedagogical methods:** + Thảo luận, thuyết trình	
	B/ Self-study content: *(10)* + Calculating and processing experiment data + Writing experiment reports	G4.1
6	***Chapter 4:*** **Checking the concrete strength by non-destructive methods (using a rebound hammer combining ultrasound on a concrete sample of 15x15x60cm)** *(continue) (0/5/10)*	
	A/ Content and pedagogical methods in class: *(5)*	G3.1, G3.2, G3.3, G4.1
	Content: + Introduction of laboratory instruments + Instruction of the steps of experiments + Instruction of calculating, and processing data + Grouping and guiding the experiment manipulation + Instruction of instrument hygiene in laboratory **Pedagogical methods:** + Theoretical lecturer, sample manipulation + Discussion + Observation, instructions of experimental manipulation	
	B/ Self-study content: *(10)* + Calculating and processing experiment data + Writing experiment reports	G4.1
7	***Chapter 5:*** **Static compression test** *(0/5/10)*	
	A/ Content and pedagogical methods in class: *(5)*	G2.2, G3.1, G3.2, G3.3, G4.1
	Content: + Scope of application + General regulations + Glossary	

	+ Laboratory equipment + Preparation of experiment + Process of loading + Processing and presenting experimental results + Report experimental results + Regulations of working safety **Pedagogical methods:** + Discussion, presentation	
	B/ Self-study content: *(10)* + Calculating and processing experiment data + Writing experiment reports	G4.1
8	***Chapter 6*: Checking pile loading capacity using large deformation dynamic testing (PDA)** *(0/5/10)*	
	A/ Content and pedagogical methods in class: *(5)*	G3.1, G3.2, G3.3, G4.1
	Content: + Scope of application + General regulations + Principle + Experimental equipments + Steps of experiment + Processing data + Reporting experimental results **Pedagogical methods:** + Thảo luận, thuyết trình	
	B/ Self-study content: *(10)* + Calculating and processing experiment data + Writing experiment reports	G4.1
9	***Final report (oral examination)***	
	A/ Content and pedagogical methods in class: *(5)*	G1.1, G3.2, G4.1
	Content: All learned contents **Pedagogical methods:** + Questions and answers	
	B/ Self-study content: *(10)* + Revise and submit reports	G1.1, G3.2, G4.1

12. Learning Ethics

- Copy reports will be subtracted 100% of the points.

- Student, who does not complete all given tasks or attendance the oral examination for other student, will not pass.

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

14. Approved by:

Dean	Head of Department	Instructor
A/Prof. Dr. Nguyễn Trung Kiên	**MSc. Nguyễn Văn Hậu**	**Dr. Lê Anh Thắng**

15. Date and Up-to-date content:

1st time: Date: August 25th, 2015 - Change course code into COIP412217 because the course is moved to Department of Structural Engineering for management	Instructor Head of department: