Course Syllabus

1. **Course title:** COnstruction Material Practice
2. **Course Code:** COMP211117
3. **Credit Units:** 1 credit (0/1/2) (0 units of theory/ 1 unit of practice/ 2 units of self-study)
   Duration: 8 weeks (0 hours of theory+6 hours of practice, and 4 hours of self-study per week)
4. **Course Instructors:**
   1/ MSc. Nguyễn Thị Thúy Hằng
   2/ Dr. Phan Đức Hùng
   3/ MSc. Nguyễn Ngọc Dương
   4/ MSc. Trần Thanh Tài
5. **Course Requirements:**
   Prerequisite courses: None
   Previous courses: Strength of Materials (STMA240121)
   Parallel courses: None
6. **Course Description:**
   The course equips knowledge to test physical and mechanical properties of basic construction materials such as burnt-clay bricks, sand, stones, cement, concrete… and calculate concrete aggregate.
7. **Course Goals:**

Goals	***Goal description***	**Programme ELOs**
G1	Knowlegde of testing construction material so cement, sand, aggregate, concrete, calculate concrete aggregate…	1.2
G2	Analyse, explain, argue to solve problems in testing construction materials	2.2, 2.5
G3	Ability to teamwork, communication, presentation , evaluation, judgment	3.1, 3.2

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

CLOs		**CLO Description**	**Programme ELOs**
G1	**G 1.1**	Understand structure, operating principle of equipment Carry out test about construction material according to Vietnamese code and abroad course Calculate concrete aggregate	1.2
G2	**G 2.1**	Ability to analysis, avaluation of test result	2.2
	G 2.2	Compliance with the rules of the laboratory, conscious discipline, industrial working style. Understand the principles of safety when conducting experiments	2.5

G3	**G 3.1**	Ability to effectively work in group	3.1
	G 3.2	Ability to discuss and solve problem in construction material test	3.2

9. Learning Resources:

- Textbooks:

1. **Nguyễn Cao Đức-Nguyễn Mạnh Phát-Trịnh Hồng Tùng-Phạm Hữu Hanh**, *Construction material practice textbook*, Education publishing House, 2000

- References:

2. Vietnamese code - Chapter 8 & 10, Ministry of Construction, 2004
3. Nguyễn Tấn Quí , *Construction material practice textbook, chapter 1, chapter 2*, Construction publishing House,, 1983

10. Student Assessment

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

Type	Content	Timeline	Assessment method	CLOs	Rate (%)
Attitude					**30**
	-Students must attend in class at least 90% time of course.	Any time	Attendance	G 2.2	
Report					**30**
	-Students submit report after finishing this course	Week 8	Report	G 1.1 G 2.1	
Final exam					**40**
	- Covers all important contents delivered in the CELOs	Week 8	Quiz (45 minutes) or Oral	G 1.1 G 2.1 G 2.2 G 3.1 G 3.2	

11. Course contents:

Week	Content	CLOs
1	***Chapter 1:*** **Determine density of cement**	
	A/ **Content and pedagogical methods in class** *: (6)* **Content:** 1.1 The concept of cement density. 1.2 Laboratory equipment. 1.3 Test procedure. 1.4 Calculate and process experimental data 1.5 Students prepare material for next test: wash, expose aggregate… **Pedagogical methods:** + Lecture and perform experiment	G 1.1 G 2.1

	+ Discuss. + Divide students into 3 groups so that students perform experiment. +Monitoring, instruct student do experiment.	
	***B/* Self-study content**: *(4)* + Calculate and process experimental data + Report + Chapter 2: Determine standard water of cement	G 2.1 G 2.2
2	***Chương 2:* Determine standard water of cement**	
	***A/* Content and pedagogical methods in class :** *(6)* 2.1 Determine standard water of cement. 2.1.1 The concept of standard water of cement. 2.1.2 Laboratory equipment. 2.1.3 Test procedure. 2.1.4 Calculate and process experimental data. 2.2 Determine the setting time of cement. 2.2.1 The concept of determine the setting time of cement. 2.2.2 Laboratory equipment. 2.2.3 Test procedure. 2.2.4 Calculate and process experimental data. **Pedagogical methods**: + Lecture and perform experiment + Discuss. + Monitoring, instruct student do experiment.	G 1.1 G 2.1
	***B/* Self-study content**: *(4)* + Calculate and process experimental data + Report + Chapter 3: Determine flexural and compressive strength of cement.	G 2.1 G 2.2
3	***Chapter 3:* Determine flexural and compressive strength of cement.**	
	***A/* Content and pedagogical methods in class** *: (6)* **Content:** 3.1 The concept of flexural and compressive strength of cement 3.2 Laboratory equipment. 3.3 Test procedure. 3.4 Calculate and process experimental data. **Pedagogical methods**: + Lecture and perform experiment + Discuss. + Monitoring, instruct student do experiment.	G 1.1 G 2.1 G 3.1 G 3.2
	***B/* Self-study content**: *(4)* + Unpack and clean formwork + Calculate and process experimental data + Report +Chapter 4: Determine the mechanical and physical properties of aggregate	G 2.1 G 2.2

	(Density, volume density, water absorption, moisture content of the aggregate).	
4	***Chapter 4: Determine the mechanical and physical properties of aggregate (Density, volume density, water absorption, moisture content of the aggregate).***	
	***A/* Content and pedagogical methods in class** *: (6)* **Content:** 4.1 Concept of density, volume density, water absorption, moisture content of the aggregate 4.1.2 Laboratory equipment. 4.1.3 Test procedure. 4.1.4 Calculate and process experimental data. **Pedagogical methods**: + Lecture and perform experiment + Discuss. + Monitoring, instruct student do experiment.	G 1.1 G 2.1 G 3.1 G 3.2
	***B/* Self-study content**: *(4)* +Calculate and process experimental data + Report +Chapter 4: Determine the mechanical and physical properties of aggregate (Density, volume density, water absorption, moisture content of the aggregate) (Con't) +Chapter 5: Calculate concrete aggregate	G 2.1 G 2.2
5	***Chapter 4: Determine the mechanical and physical properties of aggregate (Density, volume density, water absorption, moisture content of the aggregate). (Con't)*** ***Chapter 5: Calculate concrete aggregate***	
	***A/* Content and pedagogical methods in class** *: (6)* **Content:** Chapter 4 (Con't) 4.2 Concept of volume density, water absorption, moisture content of the aggregate 4.2.1 Laboratory equipment. 4.2.2 Test procedure. 4.2.3 Calculate and process experimental data. 4.3 The concept of the aggregate particles. 4.3.1 Laboratory equipment. 4.3.2 Test procedure. 4.3.3 Calculate and process experimental data. Chapter 5 5.1 The concept of concrete aggregate. 5.2 Test procedure. **Pedagogical methods**: + Lecture and perform experiment.	G 1.1 G 2.1 G 3.1 G 3.2

	+ Discuss. + Monitoring, instruct student do experiment.	
	***B/* Self-study content**: *(4)* + Calculate and process experimental data + Report + Student practice to calculate of concrete (Every group will calculate concrete aggregate with specific strength and structural types) + 6.1 Determine of slump concrete mixture.	G 1.1 G 2.1 G 2.2
6	***Chapter 6:* Determine of slump concrete mixture and compression strength of concrete.**	
	***A/* Content and pedagogical methods in class** *: (6)* **Content:** 6.1 The concept of slump of concrete mixture. 6.1.1 Laboratory equipment. 6.1.2 Test procedure. 6.1.3 Calculate and process experimental data. **Pedagogical methods**: + Lecture and perform experiment. + Discuss. + Monitoring, instruct student do experiment.	G 1.1 G 1.2 G 2.1 G 3.1 G 3.2
	***B/* Self-study content**: *(4)* + Calculate and process experimental data + Report +6.2 The concept of compression strength of concrete.	G 2.1 G 2.2
7	***Chapter 6:* Determine of slump concrete mixture and compression strength of concrete. (Con't)**	
	***A/* Content and pedagogical methods in class** *: (6)* **Content:** 6.2 The concept of compression strength of concrete 6.2.1 Laboratory equipment. 6.2.2 Test procedure. 6.2.3 Calculate and process experimental data. **Pedagogical methods**: + Lecture and perform experiment. + Discuss. + Monitoring, instruct student do experiment.	G 1.1 G 2.1 G 3.1 G 3.2
	***B/* Self-study content**: *(4)* + Unpack and clean formwork + Calculate and process experimental data + Report	G 2.1 G 2.2
8	***Final exam***	

	A/ **Content and pedagogical methods in class** *: (3)* - Student submit report - Quiz and oral	G 1.1, G 2.1, G 2.2 G 3.1, G3.2
	B/ **Self-study content**: *(2)* - Students self-review of their knowledge.	G 2.2

12. Learning Ethics:

-Reports which are similar will be got zero point.

-Students who did not attend in class at least 90% time of course will be not passed this course.

-If Student attends exam with other name, he/she will be suspended or expelled.

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**	**MSc. Nguyễn Ngọc Dương**

15. Date and Up-to-date content

1st time: Date: -	Instructor: Head of Department: