Course Syllabus

1. **Course Title:** Reinforced Concrete Building Structures Project
2. **Course Code:** RCBP311817
3. **Credit Units:** 1 (1/0/2) (1 unit of theory/ 0 unit of practice/ 2 units of self-study)
   Duration: 15 weeks
4. **Course Instructors:**
   1/ MSc. Nguyễn Văn Hậu,
   2/ Assoc. Prof. Nguyễn Trung Kiên,
   3/ Dr. Phan Đức Hùng,
   4/ Dr. Châu Đình Thành,
   5/ MSc. Đoàn Ngọc Tịnh Nghiêm,
   6/ Dr. Lê Trung Kiên,
   7/ Dr. Lê Anh Thắng,
   8/ Dr. Ngô Việt Dũng,
   9/ Dr. Phạm Đức Thiện,
   10/ MSc. Nguyễn Ngọc Dương,
   11/ MSc. Trịnh Công Luận,
   12/ MSc. Nguyễn Thế Trường Phong.
5. **Course Requirements**
   Prerequisite: Reinforced Concrete Structures (RCST240617)
   Previous courses: Reinforced Concrete Building Structures (RCBS320817)
   Parallel courses: Information Technology in Construction Practice (ITCP421417)
6. **Course Description**
   The project aims to help learner to be familiar with designing real structural components made of reinforced concrete and reinforced concrete building structures to analyse and calculate the 5-storey buildings.
7. **Course Goals**

Goals	Goal description	Programme ELOs
G1	Expertise knowledge in practical design of steel structures such as: slab, frame.	1.3
G2	Ability to analyze, explain and argue to solve technical problems related to design of building structures.	2.1, 2.4, 2.5
G3	Abilities of reporting, reading and presenting the drawing in English.	3.2, 3.3
G4	Ability to analyze, give solutions to design reinforced concrete building structures.	4.3

8. Course Learning Outcomes (CLOs)

CLOs		CLO Description	Programme ELOs
G1	**G1.1**	Estimate dimensions of building members.	1.3
	G1.2	Calcultate loads and action on reinforced concrete building structures.	1.3
G2	**G2.1**	Establishing calculating models and design structural elements of the building.	2.1
	G2.2	Abilities of self studying in documentaries and the Vietnamese Specifications of reinforced concrete building structures.	2.4
	G2.3	Calculation results are both reliable and economical	2.5
G3	**G3.1**	The reports and drawings are clearly presented	3.2
	G3.2	Abilities of presenting the drawing of steel structures in English	3.3
G4	**G4.1**	Design abilities of reinforced concrete building elements	4.3

9. Learning Resources

1. Nguyễn Đình Cống và các tác giả , **Kết cấu bê tông cốt thép (phần cấu kiện nhà cửa),** NXB KHKT – Hà nội, 2012.

2. Nguyễn Đình Cống và các tác giả , **Kết cấu bê tông cốt thép (phần cấu kiện đặc biệt),** NXB KHKT – Hà nội, 2012.

3. TS. Nguyễn Hữu Lộc, **Sử dụng AutoCAD 2012** , NXB Tổng hợp, 2012.

4. ThS. Lê Đình Quốc, **Giáo trình ETABS**, ĐH Bách Khoa Tp.HCM, 2012.

5. Tiêu chuẩn xây dựng Việt Nam, TCXDVN 5574-2012.

10. Student Assessment

- Grading scale: **10**
  - 50% score given by the instructor
  - 50% score given by reviewer
- Planning for students assessment is followed:

Assessment Type	Content	Timeline	Assessment techniques	ELOs	Rate (%)
Instructor's grading					**50**
	- The content covers all the course learning outcomes	After 15th week of semester (planned by the department holding the course)	Grading based on the rubric for instructor.	**G1.1**, **G1.2**, **G2.1, G2.2**, **G2.3, G3.1**, **G3.2, G4.1**	
Oral examination					**50**

	- The content covers all the course learning outcomes	After 15th week of semester (planned by the department holding the course)	Oral examination directly with a reviewer teacher and grading based on the rubric for reviewer.		

11. Course Content:

Week	Content	CLOs
1	***Chapter 1: Basic parameters and principles of calculation***	
	A/* Content and pedagogical methods: (1)* **Content:** 1.1 Layout column grids. 1.2 Types of slab. **Pedagogical methods**: + Lecture + Guide + Discuss	**G3.1, G3.2**
	***B/* Self-study content**: *(2)* Carry out structural layout according to project parameters	**G2.3, G4.1**
2	***Chapter 1: Basic parameters and principles of calculation (continue)***	
	A/* Content and pedagogical methods: (1)* **Content:** 1.3 Estimate dimension of members. 1.4 Principles of calculation. **Pedagogical methods**: + Lecture + Guide + Discuss	**G1.1, G3.1**
	***B/* Self-study content**: *(2)* Review the theory relating to project.	**G3.2**
3	***Chapter 2: Design of slab***	
	A/* Content and pedagogical methods: (1)* **Content:** 2.1 Determine loads on slab. **Pedagogical methods**: + Lecture + Guide + Discuss	**G1.2, G3.1**

	***B/* Self-study content**: *(2)* Determine loads acting on the slab	**G1.2**
4	***Chapter 2: Design of slab (continue)***	
	A/* Content and pedagogical methods: (1)* **Content:** 2.2 Types of slab. **Pedagogical methods**: + Lecture + Guide + Discuss	**G2.1, G3.1**
	***B/* Self-study content**: *(2)* Types of slab, then draw them.	**G2.3, G4.1**
5	***Chapter 2: Design of slab (continue)***	
	A/* Content and pedagogical methods: (1)* **Content:** 2.3 Calculate reinforcing bars for slabs. **Pedagogical methods**: + Lecture + Guide + Discuss	**G2.1, G3.1**
	***B/* Self-study content**: *(2)* Calculate reinforcing bars for slab	**G1.2**
6	***Chapter 2: Design of slab (continue)***	
	A/* Content and pedagogical methods: (1)* **Content:** 2.4 Presenting results on drawings. **Pedagogical methods**: + Lecture + Guide + Discuss	**G2.1, G3.1**
	***B/* Self-study content**: *(2)* Presenting the results with available drawing software.	**G3.1, G4.1**
7	***Chapter 2: Design of slab (continue)***	
	A/* Content and pedagogical methods: (1)* **Content:** 2.5 Calculation of deflection **Pedagogical methods**: + Lecture + Guide + Discuss	**G1.1, G3.1**

	***B/* Self-study content**: *(2)* Calculate and check the deflection of slab	**G1.2**
8	***Chapter 2: Design of slab (continue)***	
	A/* Content and pedagogical methods: (1)* **Content:** 2.6 Specifications of drawing **Pedagogical methods**: + Lecture + Guide + Discuss	**G2.1, G3.1**
	***B/* Self-study content**: *(2)* Checking the results of slab calculation.	**G2.3**
9	***Chapter 3: Design of frame***	
	A/* Content and pedagogical methods: (1)* **Content:** 3.1 Determine vertical loads on frame. **Pedagogical methods**: + Lecture + Guide + Discuss	**G1.2, G3.1**
	***B/* Self-study content**: *(2)* Calculate vertical loads of building.	**G1.2**
10	***Chapter 3: Design of frame** (continue)*	
	A/* Content and pedagogical methods: (1)* **Content:** 3.2 Determine horizontal loads on frame. **Pedagogical methods**: + Lecture + Guide + Discuss	**G1.2, G3.1**
	***B/* Self-study content**: *(2)* Calculate horizontal loads on frame.	**G1.2**
11	***Chapter 3: Design of frame** (continue)*	
	A/* Content and pedagogical methods: (1)* **Content:** 3.3 Cases of acting load. **Pedagogical methods**: + Lecture	**G1.2, G3.1**

	+ Guide + Discuss	
	***B/* Self-study content**: *(2)* Calculate and assign load cases	**G1.2**
12	***Chapter 3: Design of frame*** *(continue)*	
	A/* Content and pedagogical methods: (1)* **Content:** 3.4 Load combination (internal force) **Pedagogical methods**: + Lecture + Guide + Discuss	**G1.2, G3.1**
	***B/* Self-study content**: *(2)* Combination of loads that may occur	**G1.2**
13	***Chapter 3: Design of frame*** *(continue)*	
	A/* Content and pedagogical methods: (1)* **Content:** 3.5 Calculation of reinforced steel for beams **Pedagogical methods**: + Lecture + Guide + Discuss	**G2.1, G3.1**
	***B/* Self-study content**: *(2)* Calculate and draw beams‘ reinforcing steel	**G1.2, G3.1**
14	***Chapter 3: Design of frame*** *(continue)*	
	A/* Content and pedagogical methods: (1)* **Content:** 3.6 Calculate reinforcing steel for columns **Pedagogical methods**: + Lecture + Guide + Discuss	**G1.2, G3.1**
	***B/* Self-study content**: *(2)* Calculate and draw columns‘ reinforcing steel	**G3.2**
15	***Chapter 3: Design of frame*** *(continue)*	
	A/* Content and pedagogical methods: (1)* **Content:**	**G2.1, G3.1,** **G4.2, G4.1**

	3.7 Specifications of drawing **Pedagogical methods**: + Lecture + Guide + Discuss	
	***B/* Self-study content**: *(2)* Present the all results on general drawing.	**G2.2, G2.3, G3.2, G4.1**

12. Learning Ethics:

Home assignments must be done by the students themselves. Plagiarism found in the assessments will get zero grade point.

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

14. Approval:

Dean	Head of Department	Instructuor
A/Prof. Dr. Nguyễn Trung Kiên	**MSc. Nguyễn Văn Hậu**	**MSc. Nguyễn Văn Hậu**

15. Date and Up-to-date content

1st time: Date:	Instructor Head of department: