Course Syllabus

1. **Course Title:** Quality control & supervision consultant
2. **Course Code:** QMSC420919
3. **Credit Units:** 2 (2/0/4) (2 units of theory/ 0 unit of practice/ 4 units of self-study)
   Duration: 15 weeks (2 hours of theory+0 hours of practice, and 4 hours of self-study per week)
4. **Course Instructors**
   1/ MEng. Bùi Phạm Đức Tường
   2/ Dr. Nguyễn Sỹ Hùng
   3/ Dr. Nguyễn Đình Hiển
   4/ Dr. Phạm Sanh
5. **Course Requirements**
   Prerequisite courses: Construction Technique (COTE340319)
   Previous courses: None
   Parallel courses: None
6. **Course Description**
   This course contains 2 credits to introduce some new requirements in quality management of construction in Viet Nam. The course also equips student knowledge of quality surveyor, ISO 9000 in construction field and the process to control the quality and acceptance of work from begin to the end, and using the project.
7. **Course Goals**

Goals	Goal Description	Programme ELOs
G1	Introduction of the basic knowledge in survey and control quality of the construction	1.3
G2	Capacity of analysis, design, explain then solve the problem in the construction phase	2.1, 2.4, 2.5
G3	Team work, communicate and read English document	3.1, 3.2, 3.3
G4	Experience of using knowledge to build system of quality management for company and predict construction's failure	4.5, 4.6

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

CLOs		CLO Description	Programme ELOs
G1	**G1.1**	Can evaluate how to be a good quality project. Practice to have knowledge for supervising	1.3
	G1.2	Be able to supervise a quality construction project	1.3
G2	**G2.1**	Define purpose of owner, limit of work to perform the supervising the construction right as Standard, Decree and Law	2.1
	G2.2	Specify the method to evaluate working of geology observation,	2.1

		basement and foundation, reinforce concrete frame, industrial factory and finishing, tools providing for construction	
	G2.3	Specify the specified work of a supervisor with mission: moral, responsibility, and professional behavior	2.4, 2.5
G3	**G3.1**	Have ability to establish a supervisor group and share work to finish the project	3.1, 3.2
	G3.2	Understand English terms in contract, report, form, drawing and construction document	3.3
G4	**G4.1**	Suggest the method to acceptance, supervise, examine the classical construction	4.5
	G4.2	Suggest the solution to solving the regularly construction problems	4.6

9. Learning Resources

- Textbooks:

1. Giám sát và kiểm định chất lượng công trình – tập 1, 2, 3. Bộ Xây Dựng, 2002
2. Bộ tiêu chẩn Việt Nam trong xây dựng (11 tập). Nhà xuất bản Xây Dựng, 1998
3. Tiêu chuẩn quản lý hệ thống chất lượng ISO 9000 (9001-9004). NXB Khoa Học Kỹ Thuật, Hà Nội 2002

- References:

4. Bùi Mạnh Hùng, Giám sát thi công và nghiệm thu công trình xây dựng phần Xây dựng, Nhà Xuất Bản Xây Dựng 2013
5. Bùi Mạnh Hùng , Giám sát thi công và nghiệm thu công trình xây dựng phần Lắp đặt thiết bị, Nhà Xuất Bản Xây Dựng 2013
6. David Doran, Site Engineering Manual, Whittle Publishing 2004

10. Student Assessment

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

Type	Content	Timeline	Assessment method	CLOs	Rate (%)
Assigments					**20**
BT#1	Solution to increase the construction quality. What regulation, rule Government issued	Week 2	Mini assignment in class	G1.1	5
BT#2	The construction problems in foundation caused by designer. Problem examine, design basement and foundation	Week 5	Mini assignment in class	G2.4	5
BT#3	Calculate and design formwork for slab, beam and column	Week 8	Mini assignment in class	G2.2 G2.3	5
BT#4	Calculate welding for industrial factory and method to supervising, checking the work of industrial factory	Week 10	Mini assignment in class	G2.2	5
Project					15
BL#1	Calculate and design deep excavation for the	Week 12	Report	G2.2,	10

	construction			G3.2,	
BT#7	Analyze the cause of construction problems from design to protect construction from the dynamic load	Week 14	Report	G1.3, G3.2,	10
Report - Presentation					15
	After each class, students are required to read and study about a topic, and each group has presentation in front of class in the next class about their own topic. List of topic as follow: 1. Common problems of construction (foundation, frame, finishing) caused by supervising process **1.** Solution and supervising deep excavation **2.** Calculate and method to supervise, acceptance for formwork of reinforce concrete frame **3.** Research elevator and escalator, hoist in the construction **4.** Design, supervise work of bulk concrete **5.** Compare cast in situ bore pile when construct upper and underwater. Solution for supervising bore pile underwater.	Week 2-15	Report - Presentation	G1.1 G2.1 G2.2 G2.3	
Final exam					**50**
BT#8	- Content covers all the field of CLOs of the subject Time limit for the exam in 90 mins	Week 15	Writing	G2.1, G2.4,	50
Total					**100**

11. Course Content

Week	Content	CLOs
1	***Chapter 1: Quality Management*** *(3/0/6)*	
	A/ Content and pedagogical methods in class*:* **Content:** + Quality and characteristic of quality + Quality management and principles of quality management **Pedagogical methods**: + Presentation of lecturer + Discussion about characteristic of quality, the most important principles of quality management	G1.1, G1.2
	B/ Self-study content: + Study quality of constructions in developed countries ***References:***	G3.2, G4.2

	+ [3] + Internet & news	
2	***Chapter 1: Quality Management*** (*3/0/6)*	
	A/ Content and pedagogical methods in class*: (4h)* **Content:** + Quality of construction + Quality of construction in Vietnam in innovation and integration period **Pedagogical methods**: + Presentation of lecturer + Group discussion	G3.2, G4.2
	B/ Self-study content: *(8h)* + Study and present about modern technologies in construction of foreign countries and in Vietnam. Compare, comment and evaluate. ***References:*** + [3][4] + Internet & news	G3.2, G4.2
3	***Chapter 2: Overview of construction supervision and consultancy*** (*3/0/6)*	
	A/ Content and pedagogical methods in class*:* **Content:** + Introduction of supervision and consultancy for construction and the concepts + Major contents of superintending consultant in work + Process, methods and measure for testing supervision + General contents of construction supervision **Pedagogical methods**: + Presentation of lecturer + Discussion about the job. Common situations supervision and consultancy engineers often meet in reality	G2.3
	B/ Self-study content: + Study about supervision and consultancy, the latest decrees and circulars about roles and tasks of parties in construction site and especially role of supervision and consultancy engineer. ***References:*** + [2] [3] + Construction law 2003, decree 209 – 2009.	G2.3, G3.2, G3.2, G4.2
4	***Chapter 2: Overview of supervision and consultancy*** (*3/0/6)*	
	A/ Content and pedagogical methods in class*:* **Content:** + Files for supervision and consultancy at site + General basis to implement supervision and consultancy + Conditions to start construction work **Pedagogical methods**:	G2.3

	+ Presentation of lecturer + Group discussion	
	B/ Self-study content: + Study about construction law 2003, the latest decrees and circulars about role and tasks of parties in construction site and especially role of supervision and consultancy engineer. ***References:*** + [1] [4] + Construction law 2003, decree 209 – 2009.	G2.3, G3.2, G4.2,
5	***Chapter 3: Construction survey consultancy*** (*3/0/6)*	G2.1
	A/ Content and pedagogical methods in class*:* **Content:** + Basic principles of construction survey + Basic principles of construction survey consultancy	
	B/ Self-study content: + Study about geological survey files attend for actual work ***References:*** + [1], [2] + Construction law 2003, Decree 15 – 2013	G2.1, G3.1, G4.1.
6	***Chapter 3: Construction survey consultancy*** (*3/0/6)*	G2.1
	A/ Content and pedagogical methods in class*:* + Survey and geological construction survey supervision + Survey and meteorological and hydrological construction survey supervision + Survey and field construction survey supervision **Pedagogical methods**: + Presentation of lecturer + Group discussion	
	B/ Self-study content: + Discussion of common situations engineers often meet when work in underground ***References:*** + [2], [4] + Construction law 2003, Decree 15 – 2013	G2.3, G3.2, G4.2,
7	***Chapter 4: Supervision for work in civil construction foundation*** (*3/0/6)*	
	A/ Content and pedagogical methods in class*:* **Content:** + General principles in foundation supervision + Supervision in reinforcing foundations + Supervision of prefabricated pile + Common problems encountered during the construction of prefabricated pile	G2.3, G3.2, G4.2,

	Pedagogical methods: + Presentation of lecture + Discussion foundation issues in the phase of many high-rise buildings was built more in the period 2005 - 2010	
	B/ Self-study content: + Discussion of common situations engineers often meet when constructing foundations ***References:*** + [2], [4] + Construction law 2003, Decree 209 – 2009.	G2.1, G3.1, G3.2.
8	***Chapter 4: Supervision for work in civil construction foundation*** (*3/0/6)*	
	A/ Content and pedagogical methods in class*:* **Content:** + Supervision of bored pile + Common problems encountered during the construction of bored piles + Construction of the pit **Pedagogical methods**: + Presentation of lecture + Discussion foundation issues in the phase of many high-rise buildings was built more in the period 2005 - 2010	G2.3, G3.2, G4.2,
	B/ Self-study content: + Discussion of common situations engineers often meet when constructing foundations ***References:*** + Foundation issues in the phase of many high-rise buildings was built more in the period 2005 – 2010 in Vietnam and all over the world. Compare and comment.	G2.1, G3.1, G3.2.
9	***Chapter 5: Supervision in reinforced civil construction*** (*3/0/6)*	G2.3,
	A/ Content and pedagogical methods in class*:* + Construction supervision and acceptance of reinforced concrete work + Some new conceptions of reinforced concrete + The relevant standards + Supervision and acceptance formwork **Pedagogical methods**: + Presentation of lecture + Discussion of advanced construction technology of reinforced concrete sections	
	B/ Self-study content: + Discussion of common situations engineers often meet when constructing reinforced concrete ***References:*** + [4], [5]	G2.1, G3.1, G3.2, G4.1.
10	***Chapter 5: Supervision in reinforced civil construction*** (*3/0/6)*	

	A/ Content and pedagogical methods in class*:* **Content:** + Supervising and testing of reinforced + Check the concrete construction process + Check the construction pre-stressed concrete **Pedagogical methods**: + Presentation of lecture + Discussion of advanced construction technology of reinforced concrete sections	G2.2, G2.3.
	B/ Self-study content: *(6h)* + Essays on modern technologies of construction of reinforced concrete sections: sliding formwork, concrete pre-stressed reinforced, etc. ***References:*** + [4], [5]	G2.3, G3.2, G4.2,
11	***Chapter 6: Supervising of construction of steel structures in civil constructions*** *(3/0/6)*	
	A/ Content and pedagogical methods in class*:* **Content:** + Supervising erection of steel structures + Common mistakes in the construction of steel structures + Test and acceptance **Pedagogical methods**: + Presentation of lecture + Discussion on construction technology of steel structure in the advanced countries	G2.2, G2.3
	B/ Self-study content: + Discussion of common situations engineers often meet when constructing steel structures + Essays on modern buildings with steel structure ***References:*** + [1], [2]	G2.1, G3.1, G3.2, G4.1.
12	***Chapter 6: Supervising of construction of steel structures in civil constructions*** *(3/0/6)*	
	A/ Content and pedagogical methods in class*:* **Content:** + Supervising erection of steel structures + Common mistakes in the construction of steel structures + Test and acceptance **Pedagogical methods**: + Presentation of lecture + Discussion on construction technology of steel structure in the advanced countries	G2.2, G2.3
	B/ Self-study content: + Discussion of common situations engineers often meet when constructing	G2.1, G3.1,

	steel structures + Essays on modern buildings with steel structure ***References:*** + [1], [2]	G3.2, G4.1
13	***Chapter 7: Supervising of finishing works*** *(3/0/6)*	
	A/ Content and pedagogical methods in class*:* **Content:** + Overview and classification work finishing + Supervision of plaster, smooth, trowel + Supervision of tiling + Supervision of lime, paints, varnishes + Supervision of mounting door + Supervision of roofing + Supervision of the waterproofing, anti-hot **Pedagogical methods**: + Presentation of lecture + Discussion	
	B/ Self-study content: + Discussion of common situations engineers often meet when constructing finishing phase + Learn about environmentally friendly materials ***References:*** + [1] [2][3]	
14	***Chapter 8: Supervision of equipment installation part of civil constructions*** *(3/0/6)*	
	A/ Content and pedagogical methods in class*: (4h)* + Common issues + Supervision and acceptance electrical installation + Supervision and acceptance equipment installation of lightning protection + Supervision and acceptance elevator installation + Supervision and acceptance air conditioners, granted cold + Supervision and acceptance water supply system + Supervision and acceptance the drainage system **Pedagogical methods:** + Presentation of lecture + Discussion	G2.2, G2.3
	B/ Self-study content: + Discussion of common situations engineers often meet when constructing equipment installation + Discussion of modern equipment and measures assembly, maintenance of civil works **References:** + [4][5][6]	G2.1, G3.1, G3.2, G4.1

15	***Chapter 9: The thematic of supervision and consultancy*** *(3/0/6)*	
	A/ Content and pedagogical methods in class*: (4h)* **Content:** + Presentation & discussion of the thematic of supervising actual construction + Presentation of modern construction technology and surveillance measures. **Pedagogical methods**: + Presentation of students + Group discussion	G2.3
	B/ Self-study content: *(4h)* + Study about the supervision and consultancy in actual construction to become a consulting engineer in the future + Study about the laws, decrees and circulars applicable for the construction industry, especially Decree 15/2013 ***References:*** + [2][3] + Other	G2.3, G3.2, G4.2,

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**
A/Prof. Dr. Nguyễn Trung Kiên	**MSc. Nguyễn Văn Khoa**	**MSc. Bùi Phạm Đức Tường**

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