Course Syllabus

1. **Course Title:** Steel building STructure Project
2. **Course Code:** SSTP311717
3. **Credit Units:** 1 credits (1/0/2) (a unit of theory/ 0 unit of practice/ 2 units of self-study)
   Duration: 15 weeks (1 hours of theory+0*2 hours of practice, and 2 hours of self-study per week)
4. **Course Instructors**
   1/ Assoc. Prof. Dr. Nguyễn Trung Kiên
   2/ Dr. Phan Đức Hùng, Dr. Châu Đình Thành, MSc. Nguyễn Văn Hậu, Dr. Lê Trung Kiên, Dr. Lê Anh Thắng, Dr. Ngô Việt Dũng, Dr. Phạm Đức Thiện, MSc. Đoàn Ngọc Tịnh Nghiêm, MSc. Nguyễn Ngọc Dương, MSc. Trịnh Công Luận, MSc. Nguyễn Thế Trường Phong.
5. **Course Requirements**
   Prerequisite courses: Steel Structures (STST240917)
   Previous courses: None
   Parallel courses: Steel building structures (SBST321617)
6. **Course Description**

   This module helps students applying theoretical knowledges learned in both subjects of the steel structures and the steel building structures into analysis and design the industrial steel buildings having cranes.

7. **Course Goals**

Goals	Goal Description	Programme ELOs
G1	Expertise knowledge in practical design of steel structures such as: column, rafter, connections …	1.3
G2	Ability to analyze, explain and argue to solve technical problems related to design of steel structures	2.1, 2.3, 2.4, 2.5
G3	Abilities of presenting the drawing in English	3.2, 3.3
G4	Abilities of design the steel structures	4.3, 4.4, 4.5

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

CLOs		CLO Description	Programme ELOs
G1	**G1.1**	Calculate loads and action on the steel buildings using currently Vietnamese specifications	1.3
G2	**G2.1**	Establishing calculating models and design structural elements of the industrial steel buildings	2.1, 2.3
	G2.2	Abilities of self studying in documentaries and the Vietnamese Specifications of steel structures design	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 of steel building structures considering construction conditions	4.3
	G4.2	Design abilities of steel building elements	4.4, 4.5

9. Learning resources

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

- Textbooks:

1. Đoan Định kiến, Phạm Văn Tư, Nguyễn Quang Viên, Steel structures for civil and industrial buildings, Science and Engineering Press, 2006 (in Vietnamese).

- References:

1. Pham Van Hoi, Nguyen Quang Vien, Pham Van Tu, Luu Van Tuong, Steel structures for civil and industrial buildings, Science and Engineering Press, 2006 (in Vietnamese).
2. TCVN 2737-1995 : Load and Action (in Vietnamese)
3. TCVN 5575:2012: Steel structrure design (in Vietnamese)
4. Tran Thi Thon, Assignments of Steel Structures, Published by University of Bach-Khoa of Ho Chi Minh City, 2007. (in Vietnamese)

10. Student assessment

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

Type	**Content**	**Timeline**	**Assessment method**	**CLOs**	**Rate (%)**
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.	G1.1, G2.1, G2.2, G2.3, G3.1, G3.2, G4.1, G4.2	
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.		

11. Course Content

Week	Content	CLOs
1-2	***Chaper 1:*** **Descriptions of requirement tasks of project** *(2h,0,4h)*	
	A/ Content and pedagogical methods in class: *(2h)* **Content:** 1.1 Project parameters are given for each student 1.2 Layout column grids 1.3 Determine dimensions of the typical horizontal frame 1.4 Arranging the bracing of roof and columns **Pedagogical methods:** + Instructions how to perform the assigned contents + Discuss and answer questions given by students	G2.2
	B/ Self-study content: *(4h)* + Understand the project parameters + Arrangement: the grids of columns, frame, bracing, determine the preliminary size of a horizontal frame	G2.3
3-5	***Chaper 2:*** **Estimate internal forces of the typical horizontal frame** *(3h,0,6h)*	
	A/ Content and pedagogical methods in class: *(3h)* **Content:** 2.1 Determine loads on the frame 2.2 Calculate the internal forces of frame (by displacement method, force method, or finite element method) **Pedagogical methods:** + Instructions how to perform the assigned contents + Discuss and answer questions given by students	G1.1, G2.1
	B/ Self-study content: *(6h)* + Determine loads acting on the horizontal frame + Calculate internal forces of the horizontal frame	G2.2
6-9	***Chaper 3:*** **Design of steel columns and details of column** *(4h,0,8h)*	
	A/ Content and pedagogical methods in class: *(4h)* **Content:** 3.1 Check the design of upper column part 3.2 Check the design of lower column part 3.3 Check the column details . Connections of column and rafter . Column shoulder . Connections of steel column and concrete foundation **Pedagogical methods:**	G2.3

Week	Content	CLOs
	+ Instructions how to perform the assigned contents + Discuss and answer questions given by students	
	B/ Self-study content: *(8h)* + Perform calculation of upper column part + Perform calculation of lower column part + Perform calculation of column details: connections, column shoulder	G2.2
10-13	***Chaper 4:*** **Design of steel rafters** *(4h,0,8h)*	
	A/ Content and pedagogical methods in class: *(4h)* **Content:** 4.1 Determine loads on the rafter of horizontal frame 4.2 Calculating the internal forces 4.3 Design the details of rafters **Pedagogical methods:** + Instructions how to perform the assigned contents + Discuss and answer questions given by students	G2.3
	B/ Self-study content: *(8h)* + Perform the design of rafters + Perform the design of rafter details	G2.2
14-15	***Chaper 5:*** **Overview all drawings and all the design solutions** *(2h,0,4h)*	
	A/ Content and pedagogical methods in class: *(2h)* **Content:** 5.1 Implementation of structural steel building drawings 5.2 Checking the overall calculations and writing reports **Pedagogical methods:** + Instructions how to perform the assigned contents + Discuss and answer questions given by students	G3.1, G3.2, G4.1, G4.2
	B/ Self-study content: *(4h)* + Perform writing reports + Perform drawings	G2.2

12. Learning Ethics

All calculation tasks and drawings must be done by the students themselves. Plagiarism found in the final reports and drawing 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 Hậu	A/Prof. Dr. Nguyễn Trung Kiên

15. Date and Up-to-date content

1st time: Date: February 5, 2015 The evaluation rubric for both instructors and reviewers Implement cross-protection between instructors and reviewers, 50% of grading is evaluated by instructors and other 50% of grading is evaluated by reviewers **2nd time:** Date: August 5, 2015 Industrial frames with hollow-columns are replaced by industrial frames with solid-columns	Instructor: A/Prof. Dr. Nguyễn Trung Kiên Head of Department: MSc. Nguyễn Văn Hậu