

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

**T6. Course Specifications
(CS)**

355CE-3

Steel Structures

Course Specifications

| | |
|---|-------------------------|
| Institution: Najran University | Date: 08/03/2017 |
| College/Department: College of Engineering / Civil Engineering | |

A. Course Identification and General Information:

| | | | |
|--|-------------------------------------|------------------|-----------------------------------|
| 1. Course title and code: Steel Structures (355CE-3) | | | |
| 2. Credit hours: 3 | | | |
| 3. Program(s) in which the course is offered: Civil Engineering (If general elective available in many programs indicate this rather than list programs) | | | |
| 4. Name of faculty member responsible for the course: Dr. Moustafa Abdulrahim Hassan Mohamedsalih | | | |
| 5. Level/year at which this course is offered: 8 th /4 th Year | | | |
| 6. Pre-requisites for this course (if any): 253CE-3 (Structural Analysis II) | | | |
| 7. Co-requisites for this course (if any): NA | | | |
| 8. Location if not on main campus: Main Campus | | | |
| 9. Mode of Instruction (mark all that apply): | | | |
| a. traditional classroom | <input checked="" type="checkbox"/> | What percentage? | <input type="text" value="100%"/> |
| b. blended (traditional and online) | <input type="checkbox"/> | What percentage? | <input type="text"/> |
| c. e-learning | <input type="checkbox"/> | What percentage? | <input type="text"/> |
| d. correspondence | <input type="checkbox"/> | What percentage? | <input type="text"/> |
| f. other | <input type="checkbox"/> | What percentage? | <input type="text"/> |
| Comments: | | | |

B Objectives:

1. What is the main purpose for this course?

1. To design steel tension member.
2. To design steel compression member.
3. To design steel sections subjected to moment only (Beam).
4. To design steel sections subjected to eccentric force.
5. To design steel connections.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

1. The subject should be divided into two courses, Steel Structures I, and Steel Structures II (The subject includes too much topics).
2. Computer applications should be inserted.
3. Site visits can be arranged.
4. Increased use of IT or web-based reference material
5. Consistently assigning problems to students, as an application to theoretical contents
6. Working on updating the objectives of the course as required.

C. Course Description (Note: General description in the form used in Bulletin or handbook):

Course Description:

1. Topics to be Covered

| List of Topics: | No. of Weeks | Contact hours |
|---|--------------|---------------|
| Introduction to structures steel design. | 2 | 6 |
| Design of tension members. | 4 | 12 |
| Design of compression members. | 4 | 12 |
| Design of beams. | 2 | 6 |
| Design of beam column (under eccentric normal force). | 1 | 3 |
| Design of connections. | 2 | 6 |

2. Course components (total contact hours and credits per semester):

| Lecture | Tutorial | Laboratory | Practical/ Field work/ Internship | Others | |
|---------|----------|-------------------------|-----------------------------------|--------|--|
| 2 | 1 | 0 | 0 | 0 | |
| Lecture | Tutorial | Laboratory/ Field work/ | Practical | Other | |
| 2 | 1 | 0 | | | |

3. Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week).

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy:

On the table below are the five NQF Learning Domains, numbered in the left column:

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

| Code # | NQF Learning Domains And Course Learning Outcomes | Course Teaching Strategies | Course Assessment Methods |
|------------|---|---------------------------------------|--|
| 1.0 | Knowledge: | | |
| 1.1 | To recognize concepts of design of: <ul style="list-style-type: none"> - Tension member. - Compression member. - Beam. - Beam column. - Connections. | Lectures, tutorials, and assignments. | Assignments, midterm examinations, and final examination |
| 1.2 | Identify the steel construction details. | Ditto | Ditto |
| 1.3 | Identify the parameter affecting steel design. | Ditto | Ditto |
| 2.0 | Cognitive Skills: | | |
| 2.1 | Description of cognitive skills to be developed <ul style="list-style-type: none"> - Designing tension member. - Designing compression member. - Designing beam. - Designing beam column. - Designing connections. - Drawing details. | Ditto | Ditto |
| 3.0 | Interpersonal Skills & Responsibility: | | |
| 3.1 | Apply the engineering knowledge, techniques, and intellectual skills into professional applications. | Ditto | Ditto |
| 3.2 | Prepare technical reports | Ditto | Ditto |
| 4.0 | Communication, Information Technology, Numerical: | | |
| 4.1 | <ul style="list-style-type: none"> • Refer to relevant literature (hard and soft copy). • Search for information and engage in life-long self – learning discipline. | Ditto | Ditto |
| 4.2 | Effectively manage tasks, time, and resources. | Ditto | Ditto |
| 5.0 | Psychomotor skills (if applicable): | | |
| 5.1 | solving problem strategies | | |
| 5.2 | Results analysis vs. logic and fundamentals | | |

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)

| Course LOs # | Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications) | | | | | | | | | | |
|----------------------------------|--|---|---|---|---|---|---|---|---|---|---|
| | a | b | c | d | e | f | g | h | i | j | k |
| Design steel tension member | ✓ | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| Design steel compression member. | ✓ | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| Design steel beam. | ✓ | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| Design steel beam column. | ✓ | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| Design steel connections. | ✓ | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |

6. Schedule of Assessment Tasks for Students During the Semester:

| | Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.) | Week Due | Proportion of Total Assessment |
|---|---|---------------------------|--------------------------------|
| 1 | Assignments | After teaching each topic | 10% |
| 2 | Quizzes | Monthly | 10% |
| 3 | Mid-Term exam No.1 | After 6 weeks | 15% |
| 4 | Mid-Term exam No.2 | After 12 weeks | 15% |
| 5 | Final Term exam | After 15 weeks | 50% |

D. Student Academic Counseling and Support:

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Each student has an advisor, who is available through the week at his office hours. The advisor monitor the completion of breadth requirements, suggest enrichment opportunities, check progress toward a degree, explain academic services and procedures and, as graduation nears, assist them in planning for graduate school and/or investigating career options.

E. Learning Resources:

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|---|
| 1. List Required Textbooks T.J.Mac Ginley, T.C.Ang, 2004."Structural Steelwork, Design to Limit State Theory". |
| 2. List Essential References Materials (Journals, Reports, etc.) www.sciencedirect.com |
| 3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) <ol style="list-style-type: none"> 1. P201: "Handbook of Structural Steelwork 3rd Edition", The British Constructional Steelwork Association Ltd 2. BS 5950: Part 1-2000 3. BS 5950: Part 1-2001 4. BS 5400: Part 2-2001, Specification for bridge loads |
| 4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. www.google.com |
| 5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. MS Excel, Word and Power point |

F. Facilities Required

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| Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.) |
| 1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) <ol style="list-style-type: none"> 1. 40 seats/ class room. 2. References, particularly the text book of T.J.Mac Ginley, T.C.Ang, 2004."Structural Steelwork, Design to Limit State Theory". 3. BS 5950: Part 1-2000. 4. BS 5400: Part 2-2001, Specification for bridge loads 5. BS 5400: Part 3-2001, Code of practice for design of steel bridges. |
| 2. Computing resources (AV, data show, Smart Board, software, etc.) |
| 3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) |

G Course Evaluation and Improvement Processes:

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| 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching: <ul style="list-style-type: none"> • At the end of the semester, gather the views of students through a questionnaire to get to know their views on the mechanisms of learning and development to demonstrate the extent to which students from the course. • Evaluation of students based on teaching assessments. |
| 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department: <ul style="list-style-type: none"> • Peer consultation on teaching. • Departmental meeting discussions. • Discussions within the teaching group of the course. • Assessments and tests. |

3 Processes for Improvement of Teaching:

- Conducting workshops and training courses given by experts on the teaching and learning methodologies.
- Using technology in teaching.
- Increase discussions.
- Provide faculty library with the scientific references and sources of electronic information.

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

- Checking the course content with other external civil engineering program.
- Providing samples of all kind of assessment in the course file of each course.
- Assigning group of faculty members teaching the same course to grade same questions for various students.
- Following the latest applications in civil engineering program particularly that concern the course.

Name of Instructor: Dr. Moustafa Abdulrahim Hassan Mohamedsalih.

Signature: Dr. Moustafa Hassan

Date Report Completed: 14/03/2017

Name of Course Instructor: Dr. Moustafa Abdulrahim Hassan Mohamedsalih.

Program Coordinator: Dr. Abdulnoor Ghanim.

Signature:

Date Received: /3/2017