



## Course Specifications

|                      |                                   |
|----------------------|-----------------------------------|
| <b>Course Title:</b> | Introduction to Civil Engineering |
| <b>Course Code:</b>  | CE 101                            |
| <b>Program:</b>      | B.Sc. in Civil Engineering        |
| <b>Department:</b>   | Civil Engineering                 |
| <b>College:</b>      | Jubail University College         |
| <b>Institution:</b>  | Jubail University College         |

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## A. Course Identification

|  |
|--|
| <b>1. Credit hours:</b> 1  |
| <b>2. Course type</b><br><b>a.</b> University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/><br><b>b.</b> Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/> |
| <b>3. Level/year at which this course is offered:</b><br>Level 1, First Year   |
| <b>4. Pre-requisites for this course (if any):</b><br>None   |
| <b>5. Co-requisites for this course (if any):</b><br>None  |

### 6. Mode of Instruction (mark all that apply)

| No | Mode of Instruction   | Contact Hours | Percentage |
|----|-----------------------|---------------|------------|
| 1  | Traditional classroom | ✓             | 100        |
| 2  | Blended               |               |            |
| 3  | E-learning            |               |            |
| 4  | Distance learning     |               |            |
| 5  | Other                 |               |            |

### 7. Contact Hours (based on academic semester)

| No | Activity          | Contact Hours |
|----|-------------------|---------------|
| 1  | Lecture           | 15            |
| 2  | Laboratory/Studio |               |
| 3  | Tutorial          |               |
| 4  | Others (specify)  |               |
|    | <b>Total</b>      | <b>15</b>     |

## B. Course Objectives and Learning Outcomes

|  |
|--|
| <p><b>1. Course Description</b><br/> <i>CE 101 Introduction to Civil Engineering (1-0-1)</i> <span style="float: right;"><i>Pre-requisite: N/A</i></span></p> <p>Introduction to CE profession; description of various areas of specialization with a focus on nature of work and duties; orientation of the CE program and choice of electives for concentration in each discipline; field trips to ongoing projects; professional ethics and conduct, responsibilities and role of a civil engineer in the society</p> |
| <p><b>2. Course Main Objective</b><br/>           The main purpose of this course is to prepare students into understanding of various disciplines of Civil engineering and understand responsibilities, and ethics in the Civil Engineering area.</p>   |

### 3. Course Learning Outcomes

| CLOs |   | Aligned PLOs |
|------|---|--------------|
| 1    | <b>Knowledge and Understanding</b>  |              |
| 1.1  | Mention the various disciplines of Civil Engineering                      | 8            |
| 1.2  | Describe the responsibilities of Civil Engineers                          | 8            |
| 2    | <b>Skills :</b>   |              |
| 2.1  | Communicate the importance of Civil engineering profession to the society | 3            |
| 3    | <b>Values:</b>  |              |
| 3.1  | NA  |              |

### C. Course Content

| No | List of Topics  | Contact Hours |
|----|---|---------------|
| 1  | <b>Unit 1. HISTORY OF CIVIL ENGINEERING.</b><br>1.1 Introduction<br>1.2 Different Between Science and Engineering<br>1.3 Civil Engineering Disciplines  | 1             |
| 2  | <b>Unit 2. GENERAL INTRODUCTION ABOUT ALL CIVIL ENGINEERING DISCIPLINES.</b><br>2.1 Introduction<br>2.2 Disciplines Briefing<br>2.3 Civil Engineering Department Degree Plan                          | 1             |
| 3  | <b>Unit 3. ENGINEERING GRAPHICS</b><br>3.1 Engineering Graphics Definition<br>3.2 Engineering graphics Importance to Civil Engineer<br>3.3 Exercises  | 3             |
| 4  | <b>Unit 4. STRUCTURAL ENGINEERING.</b><br>4.1 Definition<br>4.2 Structural Engineering Disciplines  | 1             |
| 5  | <b>Unit 5. GEOTECHNICAL ENGINEERING.</b><br>5.1 Definition<br>5.2 Geotechnical Engineering Disciplines  | 1             |
| 6  | <b>Unit 6. WATER RESOURCES ENGINEERING.</b><br>6.1 Definition<br>6.2 Water Resources Engineering Disciplines  | 1             |
| 7  | <b>Unit 7. TRANSPORTATION ENGINEERING.</b><br>7.1 Definition<br>7.2 Transportation Engineering Disciplines  | 1             |
| 8  | <b>Unit 8. ENVIRONMENTAL ENGINEERING.</b><br>8.1 Definition<br>8.2 Environmental Engineering Disciplines  | 1             |
| 9  | <b>Unit 9. CONSTRUCTION TECHNOLOGY AND MANAGEMENT.</b><br>9.1 Introduction About Construction Technology and Management<br>9.2 Construction Technology and Management Importance to Civil Engineering | 1             |
| 10 | <b>Unit 10. LAND SURVEYING.</b>   | 1             |

|              |  |           |
|--------------|--|-----------|
|              | 10.1 Definition<br>10.2 Land Surveying Equipment   |           |
| 11           | <b>Unit 11. ETHICS.</b><br>11.1 Ethics Introduction and Definition<br>11.2 Case Studies and Examples | 1         |
| 12           | <b>Unit 12. REVIEW OF CIVIL ENGINEERING STUDY PLAN AND HAVE A TOUR IN CE LABS.</b>                   | 2         |
| <b>Total</b> |  | <b>15</b> |

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| Code       | Course Learning Outcomes  | Teaching Strategies                          | Assessment Methods                   |
|------------|---|--|--------------------------------------|
| <b>1.0</b> | <b>Knowledge and Understanding</b>  |  |                                      |
| 1.1        | Describe the responsibilities of Civil Engineers                          | Interactive learning<br>Independent learning | Quizzes, Midterm, Assignments, Final |
| 1.2        | Mention the various disciplines of Civil Engineering                      |  | Quizzes, Midterm, Assignments, Final |
| <b>2.0</b> | <b>Skills</b>   |  |                                      |
| 2.1        | Communicate the importance of Civil engineering profession to the society | Interactive learning<br>Independent learning | Assignments                          |
| <b>3.0</b> | <b>Values</b>   |  |                                      |
| 3.1        | NA  |  |                                      |

### 2. Assessment Tasks for Students

| # | Assessment task* | Week Due | Percentage of Total Assessment Score |
|---|------------------|----------|--------------------------------------|
| 1 | Quiz 1           | 4        | 10%                                  |
| 2 | Assignment 1     | 6        | 10%                                  |
| 3 | Mid-term LT      | 8        | 20%                                  |
| 4 | Quiz 2           | 12       | 10%                                  |
| 5 | Assignment 2     | 14       | 10%                                  |
| 6 | Final Exam LT    | 17-19    | 40%                                  |

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :**

- Office hours 1 hr/week; students can go in times of office hours for teacher to explain what could not be understood from the lesson.
- Students can communicate with a staff member outside the official working hours by email.
- Students are also encouraged to visit their academic advisors.

## F. Learning Resources and Facilities

### 1. Learning Resources

|                                       |  |
|---------------------------------------|--|
| <b>Required Textbooks</b>             | <a href="#">B Mau, S.T</a> and <a href="#">Maalouf S.</a> (2014), <i>Introduction to Civil Engineering</i> , California, USA: Cognella Academic Publishing.  |
| <b>Essential References Materials</b> | <a href="#">Chen, W. F.</a> , and <a href="#">Liew, J. R.</a> (2002). <i>The civil engineering handbook</i> . USA: CRC Press<br><a href="#">Charles, R.</a> , <a href="#">Earl, W.</a> and <a href="#">Jeff, W.</a> (2013). <i>Civil and Environmental Systems Engineering</i> , USA: Pearson Publishing |
| <b>Electronic Materials</b>           | <a href="http://www.aboutcivil.org/index.html">http://www.aboutcivil.org/index.html</a>  |
| <b>Other Learning Materials</b>       | None   |

### 2. Facilities Required

| Item   | Resources  |
|--|--|
| <b>Accommodation</b><br>(Classrooms, laboratories, demonstration rooms/labs, etc.)   | Lecture rooms with a capacity of at least 25 students and fitted with multimedia projector and a computer. |
| <b>Technology Resources</b><br>(AV, data show, Smart Board, software, etc.)  | None   |
| <b>Other Resources</b><br>(Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | None   |

## G. Course Quality Evaluation

| Evaluation Areas/Issues   | Evaluators            | Evaluation Methods   |
|---|-----------------------|--|
| Effectiveness of teaching and assessment as per QMS-Policy-006 Feedback Survey, QMS-QAP-116 Monitoring Students' Satisfaction   | Students              | Indirect: Analyzing the results of the following surveys<br>Course Evaluation Survey (CES), Program Evaluation Survey (PES), Student Experience Survey (SES)       |
| Quality of Exam papers and Verifying Standards of Student Achievement as per QMS-Policy-004 Policy for Examinations and Marking, QMS-ACP-102 Procedure for Marking Examinations | Examination Committee | Direct: Peer review of examination papers and review or double check a minimum of three or 10% of answer papers. Verifying the entries in the Activity Mark Sheet. |
| Achievement of learning outcomes as per QMS-Policy-001 Course Review,   | Faculty               | Direct: Course Report (Section B-3)  |

| Evaluation Areas/Issues   | Evaluators                                   | Evaluation Methods  |
|---|--|---|
| QMS-CDP-106, QMS-CDP-112<br>Curriculum Review   |  |   |
| Implementation of the action plans based on previous semester as per QMS-Policy-001 Course Review, QMS-CDP-106 Procedure for Course Review, QMS-CDP-112 Procedure for Curriculum Review | Faculty                                      | Direct and Indirect: Course report (Section G-1, G-2)   |
| Monitoring Teaching and Learning as per QMS-Policy-005 Monitoring of Teaching and Learning  | Chairperson/Program Director/Course Director | Indirect: Feedback by Chairperson/Program director/Course director. Program Delivery Record.                                    |
| Effectiveness of planned Teaching Strategies QMS-Policy-001 Course Review   | Faculty                                      | Indirect: Course Report (Section B-4)   |
| Course effectiveness and planning for improvement as per QMS-Policy-001 Course Review, QMS-CDP-106 Procedure for Course Review, QMS-CDP-112 Procedure for Curriculum Review             | Faculty                                      | Direct and Indirect: Course report (Section G-3)  |
| Verifying Standards of Student Achievement and Quality of Exam papers as per QMS-ACP-119 External Assessment Review   | Assessment External Reviewer                 | Direct: Report of assessment external reviewer. Review of sample of ten or 10% of student's assessments and coursework scripts. |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

|                     |                                      |
|---------------------|--------------------------------------|
| Council / Committee | Civil Engineering Department Council |
| Reference No.       | REG MIN-CED-009                      |
| Date                | 20-04-2020                           |

**Appendix A**  
**Revision Details**

| Revision no. | DESCRIPTION   | Reference MoMs |   |     |   |
|--------------|---|----------------|---|-----|---|
|              |   | DC             |   | CDC |   |
|              |   | Sem            | # | Sem | # |
| 1            | Revision of Course Teaching Strategies and action verbs based on the comments of NCAAA reviewer | 392            | 4 | 392 | 4 |
| 2            | Course Specification Template 2020  | 402            |   |     |   |