1. **Basic Information:**

|  |  |
| --- | --- |
| **Program Title** | Civil Engineering Department |
| **Department Offering the Program** | Civil Engineering Department |
| **Department Responsible for the Course** | Civil Engineering Department |
| **Course Title** | structures analysis (2) |
| **Course Code** | CIE 301 |
| **Year/Level** | level 3 |
| **Specialization** | Major |
| **Authorization Date of Course Specification** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Teaching hours** | **Lectures** | **Tutorial** | **Practical** |
| 3 | 2 | **-** |

1. **Course Aims:**

|  |  |
| --- | --- |
| **No.** | **Aims** |
| 1 | Apply knowledge of mathematics, science, engineering concepts, and construct structures to solve fundamental engineering problems |

1. **Intended Learning Outcomes (ILO’S):**
2. **Knowledge and understanding:**

|  |  |
| --- | --- |
| **No.** | **Knowledge and understanding** |
| A1 | Recall the elementary fundamentals of structural analysis |
| A11 | Recall stability and determinacy |

1. **Intellectual Skills:**

|  |  |  |
| --- | --- | --- |
| **No.** | **Intellectual Skills** | |
| B9 | 1- | Identify methods of beam deflection |
| 2- | Report equation of three moments |

1. **Professional Skills:**

|  |  |  |
| --- | --- | --- |
| **No.** | **Professional Skills** | |
| C9 | 1- | Demonstrate column bucking |
| 2- | Operate properties of plan areas |
| 3- | Diagram internal forces of statically determinate structure. |

1. **General Skills:**

|  |  |
| --- | --- |
| **No.** | **General Skills** |
| D1 | Collaborate effectively within multidisciplinary team |

**4. Course Contents:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Topics** | **Lec.** | **lab** | **exer** |
| 1 | Basic concepts in structure mechanics | 3 | - | 2 |
| 2 | Normal stresses | 9 | - | 6 |
| 3 | Shear stresses | 6 | - | 4 |
| 4 | Combined and principle stresses | 6 | **-** | 4 |
| 5 | Elastic deformation of statically determined structures | 9 | - | 6 |
| 6 | Statically indeterminate structures using the three moments equation | 9 | - | 6 |
| Total | | 42 |  | 28 |

**5. Teaching and learning methods:**

|  |  |
| --- | --- |
| **No.** | **Teaching Methods** |
| 1 | Lectures |
| 2 | Tutorial |
| 3 | Sheets and Exercises |
| 4 | Sessions of discussion |

**6. Teaching and learning methods for disable students:**

|  |  |  |
| --- | --- | --- |
| **No.** | **Teaching Methods** | **Reason** |
| 1 | Presentation of the course in digital material | Better access any time |
| 2 | Asking small groups to do assignments each composed of low, medium, and high performance students. | Knowledge and skills transfer among different level of students. |

7**. Student evaluation:**

**7.1 Student evaluation method**:

|  |  |  |
| --- | --- | --- |
| **No.** | **Evaluation Method** | **ILO’s** |
| 1 | Mid Term Examination | A1, B9 |
| 2 | Semester work | C9, D1 |
| 3 | Final Term Examination | A1, A11, B9 |

**7.2 Evaluation Schedule:**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Evaluation Method** | | **Weeks** |
| 1 | Semester work | exercises an assignments | , , |
| quizzes |
| 2 | Mid Term Examination | |  |
| 3 | Final Term Examination | |  |

**7.3 weighting of Evaluation:**

|  |  |  |
| --- | --- | --- |
| **No.** | **evaluation method** | **Weights** |
| 1 | Mid-term examination | 20% |
| 2 | Semester work | 20% |
| 3 | Final-term examination | 60% |
| TOTAL | | 100% |

**8. List of References:**

|  |  |
| --- | --- |
| **No.** | **Reference List** |
| 1 | Course notes  Lecture notes prepared by the course coordinator and solved Examples. |
| 2 | Essential books (text books)  1- M. E. El-Dakhakhni, “ Theory of Stuctures “  2- Ashraf m. EL-shihy “Stucture Analysis “  3-ELO Dakhahhnt “ Theory of Stuctural“  4-Sayed s. Abdel Salam “Stuctural Analysis and Mechanics “  5-Harry E. West, “ Analysis of Stuctures “  6- Fouad Abdel Rahman Abdel Rahman Bazara “ Elementry Stuctural Analysis “ |
| 3 | Recommended books  1- M. Bakhoum, “ Structural Mechanics “  2- R.C.Coats, M. G. Coutie and F. K. Kong, “ Structural analysis “, Second Edition. |
| 4 | Periodicals, Web sites, etc  Structural Engineering Web Sites -ASCE Periodicals. |

**9. Facilities required for teaching and learning:**

|  |  |
| --- | --- |
| **No.** | **Facility** |
| 1 | Seminar |
| 2 | discussions rooms with internet connections |
| 3 | teaching aids such as interactive (smart) board |
| 4 | Data Show |

**10. Matrix of knowledge and skills of the course:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Topic** | **Aims** | **Knowledge and understanding** | **Intellectual Skills** | **Professional Skills** | **General Skills** |
| 1 | Basic concepts in structure mechanics | 1 | A1 | B9 | C9 | D1 |
| 2 | Normal stresses | 1 | A1 , A11 | B9 | C9 | D1 |
| 3 | Shear stresses | 1 | A1, A11 | B9 | C9 | D1 |
| 4 | Combined and principle stresses | 1 | A1 | B9 | C9 | D1 |
| 5 | Elastic deformation of statically determined structures | 1 | A11 | B9 | C9 | D1 |
| 6 | Statically indeterminate structures using the three moments equation | 1 | A1, A11 | B9 | C9 | D1 |

**Course Coordinator:** Dr/ shaban selim

**Head of Department:** ASS. Prof / khaled fawzy

**Date of Approval:** jan 2017