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** | Surveying (2) |
| **Course Code** | CIE 307 |
| **Year/Level** | Level 2 |
| **Specialization** | Major |
| **Authorization Date of Course Specification** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Teaching hours** | **Lectures** | **Tutorial** | **Practical** |
| 2 hours | 1 hour/week | 1 hour/week |

1. **Course Aims:**

|  |  |
| --- | --- |
| **No.** | **Aims** |
| 8 | Define and preserve properties of the land by using the surveying techniques and skills |

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

|  |  |
| --- | --- |
| **No.** | **Knowledge and understanding** |
| A13 | Recognize the different engineering principles related to surveying. |

1. **Intellectual Skills:**

|  |  |
| --- | --- |
| **No.** | **Intellectual Skills** |
| B2 | Think analytically to select the appropriate solutions for surveying problems. |

1. **Professional Skills:**

|  |  |
| --- | --- |
| **No.** | **Professional Skills** |
| C5 | Use measuring instruments and laboratories equipment to collect analyze and interpret results. |

1. **General Skills:**

|  |  |
| --- | --- |
| **No.** | **General Skills** |
| D6 | Effectively manage tasks, time, and resources |

**4. Course Contents:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Topics** | **Lect.** | **Lab.** | **Exer.** |
| 1 | Indirect methods for distance measurement:  Stadia method-tangent methods-substance bar. | 2 | 1 | 1 |
| 2 | Setting out of horizontal and vertical curves | 4 | 2 | 1 |
| 3 | Introduction to theory of errors and error analysis of surveying measurements.  Computations of areas and volumes of earth work in construction sites. | 6 | 3 | 3 |
| 4 | C Coordinate systems and transformations coordinate computations :  Polar method-intersection-resection | 6 | 3 | 3 |
| 5 | Modern methods for distance measurements :  Distance measurement (EDM) and total stations. | 4 | 2 | 2 |
| 6 | Setting out of engineering projects. | 2 | 1 | 1 |
| 7 | Course Project | 4 | 2 | 2 |
| TOTAL | | 28 | 14 | 14 |

**5. Teaching and learning methods:**

|  |  |
| --- | --- |
| **No.** | **Teaching Methods** |
| 1 | Lectures |
| 2 | Discussion sessions |
| 3 | Information collection from different sources |
| 4 | Research assignment |
| 5 | Case studies |

**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 | A13, B2 |
| 2 | Semester work | C5, D6 |
| 3 | Final Term Examination | A13, B2 |

**7.2 Evaluation Schedule:**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Evaluation Method** | | **Weeks** |
| 1 | semester work | exercises an assignments | , , |
| Teamwork project. |
| 2 | Mid Term examination | |  |
| 3 | Final term examination | |  |

**7.3 weighting of Evaluation:**

|  |  |  |
| --- | --- | --- |
| **No.** | **evaluation method** | **Weights** |
| 1 | Mid-term examination | 20% |
| 3 | Practical examination | 10% |
| 4 | Semester work | 10% |
| 5 | Final-term examination | 60% |
| TOTAL | | 100% |

**8. List of References:**

|  |  |
| --- | --- |
| **No.** | **Reference List** |
| 1 | Walker, J., and Awange, J. L.(2017) Surveying for Civil and Mine Engineers.‏ |
| 2 | - Essential books (text books)  Jack C. Mc Cormac, H, Surveying Fundamentals, Prentice Hall, Englewood, New Jersy (ISBN: 0471364037) |
| 3 | Recommended books  Wolf, P.R. and Brinker, R.C., Elementary Surveying, 10th ed., Harper Collins College Publisher, NY, USA (2002) |

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

|  |  |
| --- | --- |
| **No.** | **Facility** |
| 1 | Lecture classroom |
| 2 | seminar |
| 3 | White board |
| 4 | Data Show system |
| 5 | Lecture classroom |

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Topic** | **Aims** | **Knowledge and understanding** | **Intellectual Skills** | **Professional Skills** | **General Skills** |
| 1 | Indirect methods for distance measurement:  Stadia method-tangent methods-substance bar. | 8 | A13 | B2 | C5 | D6 |
| 2 | setting out of horizontal and vertical curves | 8 | A13 | B2 | C5 | D6 |
| 3 | Introduction to theory of errors and error analysis of surveying measurement | 8 | - | B2 | - |  |
| 4 | Computations of areas and volumes of earth work in construction sites | 8 | A13 |  | C5 | D6 |
| 5 | Modern methods for distance measurements :  Distance measurement (EDM) and total stations. | 8 | A13 | B2 | C5 | D6 |
| 6 | Setting out of engineering projects. | 8 | A13 | - | - | - |
| 7 | Course project | 8 | A13 | B2 | C5 | D6 |

**Course Coordinator:** Dr / Ayman Helal

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

**Date of Approval:** Jan 2017