**University**: Benha University

**Faculty**: Faculty of Engineering at Shoubra

**Department offering the program**: Mechanical Engineering Department

**Department offering the course**: Mechanical Engineering Department

**1- Course Data**

**Course Code:** MEC201 **Course Title:** Theory of Measurements and Sensors

**Semester/Year:** First / Second **Specialization:** Mechanical Engineering

**Prerequisite Course(s):** -- **Core or Elective:** Core Course

**Teaching Hours:** **Lecture:** 1 **Tutorial:** 1 **Lab:** 3 **Total:** 5

**Reports for Student Evaluation methods**

**Learning Outcomes (LO’s) That Served by the course.**

|  |  |
| --- | --- |
| **Cognitive Domain** | |
| **#LO1** | Explain and design the main component and characteristics of measurement systems. |
| **#LO2** | Understand the steps of the experimental test plan. |
| **#LO3** | Analyze measurement data statistically. |
| **#LO4** | Analyze the uncertainty of the measured/calculated variables/parameters. |
| **#LO5** | Explain the working principles of the measuring devices |
| **Psychomotor Domain** | |
| **#LO6** | Select the proper measuring device according to the set static and dynamic characteristics. |
| **Affective Domain** | |
|  | None |
|  |  |

**Reports for Student Assessment Methods for each LO**

| **Learning Outcomes** | | **Assessment Methods** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Written Exams | Online Exams | Oral Exam | Pop Quizzes | In-class Problem Solving | Take-Home Exam | Research Assignments | Reporting Assignments | Project Assignments | In-class Questions |
| **Cognitive Domain** | LO1 | **◼** |  | **◼** | **◼** | **◼** | **◼** | **◼** | **◼** |  | **◼** |
| LO2 | **◼** |  | **◼** | **◼** | **◼** | **◼** | **◼** |  |  | **◼** |
| LO3 | **◼** |  | **◼** | **◼** | **◼** | **◼** | **◼** |  |  | **◼** |
| LO4 | **◼** |  | **◼** | **◼** | **◼** | **◼** | **◼** | **◼** |  | **◼** |
| LO5 | **◼** |  | **◼** | **◼** | **◼** | **◼** | **◼** |  | **◼** | **◼** |
| **Psychomotor Domain** | LO6 | **◼** |  | **◼** | **◼** | **◼** | **◼** | **◼** | **◼** | **◼** | **◼** |
|  |  |  |  |  |  |  |  |  |  |  |  |

**Assessment Schedule and Weight**

|  |  |  |
| --- | --- | --- |
| **Assessment Tools** | **Week** | **Weight** |
| Midterm Examination | 7 | 20% |
| Oral Examination | 14 | 20% |
| Final Examination | (As Scheduled) | 50% |
| Reports (#2) | 1, 4 | 1.3% |
| Quizzes (#2) | 2, 8 | 1.3% |
| Home assignments | 1, 2, 4, 5, 8, 9, 11 | 3.3% |
| Project Assignments | 11 | 4.0% |
| **Total** |  | **100 %** |

**Final Exame LO Evaluation Sheet**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question No.** | | **LO that Served by the Topic** | **Mark**  **Assigned to The Topic** | **Percentage**  **(Mark /Total Exame Mark)** | **Comments** |
| **Q1** | **a-i** | LO1, L2, LO3 | 6 | 8.0% | Essay Questions |
| **a-ii** | LO1, LO2 | 2 | 2.7% |
| **a-iii** | LO1, L2, LO3, LO4 | 3 | 4.0% |
| **a-iv** | LO2, LO3 | 3 | 4.0% |
| **a-v** | LO1, LO2 | 4 | 5.3% |
| **b** | LO2, LO3, LO6 | 4 | 5.3% | Problem Solving Questions |
| **c** | LO1, LO2, LO3, LO6 | 5 | 6.7% |
| **d** | LO2, LO3, LO4, LO6 | 10 | 13.3% |
| **Q2** |  | LO1, L2, LO3, LO4, LO5, LO6 | 38 | 50.7% | Multiple-Choice Question |
| **Summation** | | | **75** | **100%** | **Essay, Problem solving and Multiple-Choice Questions** |

**LO Percentage Through the Final Exame**

|  |  |  |
| --- | --- | --- |
| **Question No.** | | **Approximately Cover percentage for each LO in the Exame** |
| **Cognitive Domain** | **LO1** | 13.3% |
| **LO2** | 18.7% |
| **LO3** | 15.7% |
| **LO4** | 9.6% |
| **LO5** | 6.3% |
| **Psychometer Domain** | **LO6** | 11.4% |
| **Affective Domain** | **--** | -- |

**توقيع أستاذ المقرر:**

**توقيع منسق الجودة بالبرنامج:**

**توقيع رئيس مجلس القسم/منسق البرنامج:**