

**Prince Sattam Bin Abdulaziz University**

**College of Engineering at Wadi Al-dawaser**

**Electrical Engineering Department**

**Course Assessment Report**

|  |  |
| --- | --- |
| **Course Code** | **EE3350** |
| **Course Title** | **Electromechanical Energy Conversion** |
| **Level** | **9** |
| **Instructor Name** | **Prof. Kanagaraj** |
| **Academic Year** | **2022-2023** |
| **Semester** | **2** |

1. **Coverage of planned Program**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topics covered** | **Planned contact hours** | **Actual Contact hours** | **Reason for Variations if there is a difference of more than 25% of the hours planned** |
| **Theory:** |
| DC MACHINE: Construction, Winding diagram, Classification, Motor Characteristics, Speed and Torque calculation. | **10** | **10** |  |
| Generator Characteristics, Voltage and Current Calculation.  | **5** | **5** |  |
| TRANSFORMERS (Single Phase): Construction, Operation, Equivalent circuit, Voltage regulation and Efficiency.  | **5** | **5** |  |
| Determination of transformer equivalent circuit parameters, Autotransformer, Three-phase transformer. | **5** | **5** |  |
| AC MACHINERY FUNDAMENTALS  | **5** | **5** |  |
| THREE-PHASE INDUCTION MOTOR: Construction and advantages | **3** | **3** |  |
| Operation, Equivalent circuit of three-phase induction motor. | **5** | **5** |  |
| Performance calculation, Starting, Speed control of three-phase induction motor. | **10** | **10** |  |
| SMALL AC MOTORS: Single phase induction motors, reluctance and hysteresis motors, Universal motors, servo motors, Stepper motors.  | **5** | **5** |  |
| **Practical:** |  |  |  |
| Demonstration of laboratory equipment usage and safety precaution measures | **4** | **4** |  |
| Performance study on DC shunt motor | **4** | **4** |  |
| Performance study on DC series motor | **4** | **4** |  |
| Performance study on DC cumulative compound motor | **4** | **4** |  |
| Performance study on DC differential compound motor | **4** | **4** |  |
| Study the electrical performance of DC shunt generator | **4** | **4** |  |
| Study the electrical performance of DC series generator | **4** | **4** |  |
| Polarity test on single-phase transformer | **4** | **4** |  |
| Load test on single-phase transformer | **4** | **4** |  |
| Open and short circuit test on single-phase transformer to determine equivalent circuit parameters | **4** | **4** |  |
| Total | **93** | **93** |  |

1. **Distributions of Grades**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **A+** | **A** | **B+** | **B** | **C+** | **C** | **D+** | **D** | **F** | **Total** |
| **No. of Students** | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 3 | 2 | 10 |
| **% of students** | 0 | 0 | 10 | 10 | 0 | 0 | 30 | 30 | 20 | 100 |
| **Cum. % of students** | 0 | 0 | 10 | 20 | 20 | 20 | 50 | 80 | 100 | 100 |
| $GPA= \frac{5\left(0\right)+4.75\left(0\right)+4.5\left(1\right)+4\left(1\right)+3.5\left(0\right)+3\left(0\right)+2.5\left(3\right)+2\left(3\right)+1(2)}{10}$ = **2. 45** |

1. **Course Outcomes (CO)and Student Outcomes (SO) Assessment Results**

|  |  |  |  |
| --- | --- | --- | --- |
| **Instructor** | Prof. Kanagaraj | **Semester** | 2 (2022-2023) |
| **Course Code** | EE3350 | **Course Title** | Electromechanical Energy Conversion |
| **Course Outcomes** | **Student Outcomes** |
| CO | Attainment (Y/N) | % of students attaining the CO |
| 1.6 | 1.7 | 1.8 | 1.9 | 6.1 | 6.2 |
| CO1 | **Y** | **60** | 60 |  |  |  |  |   |
| CO2 | **Y** | **60** |  | 60 |  |   |  |   |
| CO3 | **N** | **56** |  |  |  56 |    |  |   |
| CO4 | **Y** | **60** |  |  |   | 60  |  |   |
| CO5 | **Y** | **75** |  |  |  |  | 60 | 90 |
| **Student Outcome Assessment** | **60** | **60** | **56** | **60** | **60** | **90** |
| **Bar Chart of % of students showing Satisfactory Level for CLOs** | **Bar Chart of % of students showing Satisfactory Level for SOs** |
| **(i)** | **Which of the COs did not meet minimum requirement?** |
|  CO3  |
| **(ii)** | **State the reasons CO did not meet?**  |
| Students’ involvement in studying lecture part (theoretical part) is not up to the level |
| **(iii)** | **State actions to be done to recover?** |
| By providing additional homework and assignments in the coming semester the students’ performance can be improved. |

1. **Any Changes implemented in the course based on suggestions (if any) in the previous semester course report**

|  |  |
| --- | --- |
| **a** | **Assessment Mechanism / Method** |
| None  |
| **b.** | **Teaching & Learning Methods** |
| None |
| **c.** | **Course Content** |
|  None |

1. **Any other Suggestions for improvement**

|  |
| --- |
| **None** |

|  |  |  |  |
| --- | --- | --- | --- |
| Submitted by | Prof. Kanagaraj | Signature |  |
| Program Coordinator |  | Signature |  |