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| **College :** | **College of Engineering** |
| **Programme** | **Electrical Engineering** |
| **Course :** | **EE 271** |

**Course Report**

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| --- | --- | --- | --- | --- |
| Institution : | Majmaah University | | Date of CR | 12/5/2017. |
| College/ Department | | Engineering College/ Electrical Engineering | | |

**A Course Identification and General Information**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Course title: | | Principles of Electric Power and Machines Lab | | | | | Code | | | EE 271 | | | Section | | | 424 | | |
| 2. Name of course instructor | | | | Dr.Bilal and  Mohammad Abdul Baseer | | | | | | | Location : | | | Complex Building | | | | |
| 3. Year and semester to which this report applies: | | | | | | | | | | 2016-2017/Semester-II | | | | | | | | |
| 4. Number of students starting the course? | | | | | | 14 | | Students completing the course? | | | | | | | | | 12 |  |
| 5. Course components: | | | | | | | | | | | | | | | | | | |
|  | Lecture | | Tutorial | | Laboratory/  Studio | | | | Practical | | | Other | | | **Total** | | | |
| **Contact**  **Hours** | xx | | xx | | 16 | | | | xx | | | xx | | | **32** | | | |
| **Credit** | xx | | xx | | 1 | | | | xx | | | xx | | | **1** | | | |

**B- Course Delivery:**

**1. Coverage of Planned Program**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topics Covered** | **Planned** Contact Hours | **Actual** Contact Hours | **Reason for Variations (\*)** |
| Introduction: Introductory to lab equipment's and basic components  Determination of Low TL parameters | 2 | 2 | N/A |
| Single Phase Transformers (Determine Equivalent circuits) | 4 | 4 | N/A |
| O.C and S.C Test on Single phase transformers | 4 | 4 | N/A |
| Voltage and current measured on single phase A.C circuit | 4 | 4 | N/A |
| Active Power and frequency Measured on AC Circuit | 2 | 2 | N/A |
| Magnetization and Load characteristic on D.C Generator | 4 | 4 | N/A |
| Reactive power compensation at industrial load. | 4 | 4 | N/A |
| Three Phase Transformers | 4 | 4 | N/A |
| Measurement of No load ratio of the Three Phase Transformers | 2 | 1 | According to the ministry of higher education the semester has been reduced to 13 weeks |
| Introduction to Induction motor | 2 | 1 | According to the ministry of higher education the semester has been reduced to 13 weeks |

( \* ) if there is a difference of more than 25% of the hours planned

**2. Consequences of Non-Coverage of Topics**

|  |  |  |
| --- | --- | --- |
| Topics not Fully Covered  (if any) | Effected Learning Outcomes | Possible Compensating Action |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |

**3. Course learning outcome assessment.**

| **List course learning outcomes** | | **List methods of assessment for each LO** | **Summary analysis of assessment results for each LO** |
| --- | --- | --- | --- |
| **1.0** | **Knowledge** | | |
| **1.1** |  |  |  |
| **1.2** |  |  |  |
| **1.3** |  |  |  |
| **1.4** |  |  |  |
| **1.5** |  |  |  |
| **1.6** |  |  |  |
| **b** | **Cognitive Skills** | | |
| **1** | Perform experiment to determine equivalent circuit parameters of single phase and three phase transformers. | Standardized Exams | I selected Q. No 4 from Final exam  2- Unsatisfactory  6-Developing  5- Satisfactory  Overall result 74.5% |
| **2** | Perform experiment to determine equivalent circuit of three-phase synchronous machine. | Standardized exams | I selected Q. No 4 from Final exam  2- Unsatisfactory  6-Developing  5- Satisfactory  Overall result 74.5% |
| **3** | Perform experiment to determine of Transmission Lines (TL) parameters; TL loading characteristics; TL reactive power compensation; TL insulators voltage characteristics. | Standardized exams | I selected Q. No 4 from Final exam  2- Unsatisfactory  6-Developing  5- Satisfactory  Overall result 74.5% |
| **4** | Perform experiment to analyze reactive power compensation for industrial loads | Standardized exams | I selected Q. No 4 from Final exam  2- Unsatisfactory  6-Developing  5- Satisfactory  Overall result 74.5% |
| **5** | Perform parallel operation of synchronous generator*,* Starting of synchronous motor*,* Steady state operation of synchronous motor |  |  |
| **6** |  |  |  |
| **3.0** | **Interpersonal Skills & Responsibility** | | |
| **3.1** |  |  |  |
| **3.2** |  |  |  |
| **3.3** |  |  |  |
| **3.4** |  |  |  |
| **3.5** |  |  |  |
| **3.6** |  |  |  |
| **K** | **Communication, Information Technology, Numerical** | | |
| **1** | Use modern engineering tools such as power meters and PC integrated measuring systems to analyze equivalent circuit parameters of single phase and three phase transformers. | Standardized Exams | I selected Q.No 1 from Final exam  2- Unsatisfactory  5-Developing  6- Satisfactory  Overall result 76.9% |
| **2** | Use modern engineering tools such as power meters and PC integrated measuring systems to analyze equivalent circuit of three-phase synchronous machine | Behavior Observations and presentations | I selected Q.No 1 from Final exam  2- Unsatisfactory  5-Developing  6- Satisfactory  Overall result 76.9% |
| **3** | Use modern engineering tools such as power meters and PC integrated measuring systems to analyze the Transmission Lines (TL) parameters; TL loading characteristics; TL reactive power compensation; TL insulators voltage characteristics; |  | I selected Q.No 1 from Final exam  2- Unsatisfactory  5-Developing  6- Satisfactory  Overall result 76.9% |
| **4** | Use modern engineering tools such as power meters and PC integrated measuring systems to analyze reactive power compensation for industrial loads |  | I selected Q.No 1 from Final exam  2- Unsatisfactory  5-Developing  6- Satisfactory  Overall result 76.9% |
| **5** | Use modern engineering tools such as power meters and PC integrated measuring systems to analyze parallel operation of synchronous generator*,* starting of synchronous motor*,* steady state operation of synchronous motor |  | I selected Q.No 1 from Final exam  2- Unsatisfactory  5-Developing  6- Satisfactory  Overall result 76.9% |
| **6** |  |  |  |
| **5.0** | **Psychomotor** | | |
| **5.1** |  |  |  |
| **5.2** |  |  |  |
| **5.3** |  |  |  |
| **5.4** |  |  |  |
| **5.5** |  |  |  |
| **5.6** |  |  |  |

**Summarize any actions you recommend for improving teaching strategies as a result of evaluations in table 3 above.**

|  |
| --- |
| To add some experiments on fundamentals of electrical machines (series motor). The result of this course for SLO b and k is above 75% |

**4. Effectiveness of Planned Teaching Strategies for Intended Learning Outcomes set out in the Course Specification**

|  |  |  |  |
| --- | --- | --- | --- |
| List Teaching Methods set out in Course Specification | Were They  Effective? | | Difficulties Experienced (if any) in Using the Strategy and Suggested Action to Deal with Those Difficulties. |
| No | Yes |
| Acquired and applied fundamental principles of science and engineering in this course. |  | Yes | ……………..…………………………. |
| Different Experiments can be done by the students for different components |  | Yes | ……………..…………………………. |
| Practical knowledge has given to the students by viewing the construction Transformers and DC machines |  | Yes | ……………..…………………………. |
| Encourage students to engage in communication use appropriate questioning to develop understanding among the students. |  | Yes | ……………..…………………………. |
| In certain phases of class the students should be given small individual tasks which: make students focus on the topic (problem), enable them to get information about the quality of their work directly. |  | Yes | ……………..…………………………. |

**C. Results**

**1. Distribution of Grades**

|  |  |  |  |
| --- | --- | --- | --- |
| Letter  Grade | Number of  Students | Student  Percentage | Analysis of Distribution of Grades |
| **A+** | 0 | 0 % |  |
| **A** | 1 | 7.6 % | The student was close to A+-grade but he did a mistake in calculation. |
| **B+** | 2 | 15.38 % | The students were close to A-grade but didn’t achieve it. |
| **B** | 1 | 7.6 % | The student fails to apply formulae to calculate the parameters. |
| **C+** | 0 | 0 % |  |
| **C** | 2 | 15.38 % |  |
| **D+** | 2 | 15.38 % | The students fail to connect the circuit properly. |
| **D** | 4 | 30.76 % | The student has partially finished the experiment in final exam. |
| **F** | 1 | 7.6 % | The student has not submitted the lab-reports and got less marks in mid-term exam so he failed. |
| Denied  Entry | 0 | 0 % |  |
| In Progress | 0 | 0 % |  |
| Incomplete | 0 | 0 % |  |
| Pass | 12 | 92.3 % |  |
| Fail | 1 | 7.6 % |  |
| Withdrawn | 1 | 7.6 % |  |

**2. Analyze special factors (if any) affecting the results**

|  |
| --- |
| * The student has not submitted the lab-reports and got less marks in mid-term exam so he failed and the result was dropped to 92.3%. |

**3. Variations from planned student assessment processes (if any).**

a. Variations (if any) from planned assessment schedule (see Course Specifications)

|  |  |
| --- | --- |
| Variation | Reason |
| Mid Term-II exam was cancelled | According to the ministry of higher education the semester has been reduced to 13 weeks. |
|  |  |
|  |  |

b. Variations (if any) from planned assessment processes in Domains of Learning

|  |  |
| --- | --- |
| Variation | Reason |
|  |  |
|  |  |

**4. Student Grade Achievement Verification:**

|  |  |
| --- | --- |
| Method(s) of Verification | Conclusion |
| The final exam papers are reviewed by other faculty member from the same department. | It was fair during evaluation, which improves the quality. |
|  |  |
|  |  |

**D. Resources and Facilities**

|  |  |
| --- | --- |
| Difficulties in access to resources  or facilities (if any) | Consequences of any difficulties experienced for student learning in the course |
|  | …………………………………………… |
| In this lab the accommodation is only for 10 students, if more than 10 students will register then it is difficult to manage it. | The group of students will work on same experiment due to lack of enough space in room. |
| …………………………………………… | …………………………………………… |

**E. Administrative Issues**

|  |  |
| --- | --- |
| Organizational or administrative difficulties encountered (if any) | Consequences of any difficulties experienced for student learning in the course |
| None | …………………………………………… |
| …………………………………………… | …………………………………………… |
| …………………………………………… | …………………………………………… |

**F Course Evaluation**

**1 Student evaluation of the course (Attach summary of survey results)**

|  |
| --- |
| a. List the most important recommendations for improvement and strengths  From the Evaluation Survey Report (attached) the average is above 75%. |
| b. Response of instructor or course team to this evaluation  No recommendations, as the SLO b and k percentage is above 75%. |

**2. Other Evaluation:**

|  |
| --- |
| a. List the most important recommendations for improvement and strengths  …………………………………………………………………………………………………………………………………………………………………………………………  …………………………………………………………………………………………… |
| b. Response of instructor or course team to this evaluation :  …………………………………………………………………………………………………………………………………………………………………………………………  …………………………………………………………………………………………  …………………………………………………………………………………………… |

**G Planning for Improvement**

**1. Progress on actions proposed for improving the course in previous course reports (if any).**

|  |  |  |  |
| --- | --- | --- | --- |
| Actions recommended  from the most recent course report(s) | Actions Taken | Action Results | Action Analysis |
| 1. Some experiments on fundamentals of dc machines should be added to improve the course. | Done | Result improved | Grades percentage result has improved from 73% to 78%.  (Refer CR 2016-2017 for I-sem) |
| 1. To follow-up the students those who have not finished all the experiments in the lab. | Done | Result improved | Grades percentage result has improved from 75% to 78%. |
| 1. ………………………… | ……………… | ………………… | ………………… |
| 1. ………………………… | ……………… | ………………… | ………………… |

**2. List what other actions have been taken to improve the course**

|  |
| --- |
| 1. Some experiments on fundamentals of dc machines should be added to improve the course. 2. Book title “Laboratory Manual for Electrical machines” by D.P Kothari and B.S.Umre. |

**3. Action Plan for Next Semester/Year**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Actions Recommended for Further Improvement | Intended Action Points  (should be measurable) | Start  Date | Completion  Date | Person Responsible |
| 1. To follow-up the students those who have not finished all the experiments in the lab. | If the student will not complete all the experiments in the lab then it will effect on result. | 10/9/2017 | 15/12/2107 | Supervisor |
| 1. Some experiments on fundamentals of dc machines should be added to improve the course. | Doing more experiments in lab will make practice to gain the practical knowledge to the students. | 10/9/2017 | 15/12/2107 | Supervisor |
| c) |  |  |  |  |
| d) |  |  |  |  |
| e) |  |  |  |  |

**Course Instructor:**

|  |  |  |  |
| --- | --- | --- | --- |
| Name: | Dr. Bilal and M.A.Baseer | | |
| Signature: |  | Date Report Completed: | 12/5/2017 |

**Program Coordinator:**

|  |  |  |  |
| --- | --- | --- | --- |
| Name: | Dr. Abdullah Almuhaisen | | |
| Signature: | ............................. | Date Received : | ....../…../2017 |

**Important Notes :**

* A separate Course Report (CR) should be submitted for every course and for each ( section " Male & Female" or Academic Programme or campus location where the course is taught ) even if the course is taught by the same person
* Each CR is to be completed by the course instructor (Separate reports attached ) and given to the program coordinator At the end of each course
* Course Reports are to discuss by the academic ( Programme ) Department Council





