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| **College :** | **Engineering** |
| **Programme** | **Electrical Engineering** |
| **Course :** | **Electromagnetics II** |

**Course Report**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Institution: | Al Majmaah University | | Date of CR | 28 /5 / 2017. |
| College/ Department | | Engineering / Electrical Engineering | | |

**A Course Identification and General Information**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Course title: | | Electromagnetics II | | | | | Code | | | EE 234 | | | Section | | | 418 | | |
| 2. Name of course instructor | | | | Dr. Mohamed Ouda | | | | | | | Location : | | | Al Yahya Building | | | | |
| 3. Year and semester to which this report applies: | | | | | | | | | | Spring 2017 | | | | | | | | |
| 4. Number of students starting the course? | | | | | | 17 | | Students completing the course? | | | | | | | | | 12 |  |
| 5. Course components: | | | | | | | | | | | | | | | | | | |
|  | Lecture | | Tutorial | | Laboratory/  Studio | | | | Practical | | | Other | | | **Total** | | | |
| **Contact**  **Hours** | 45 | | 15 | | 0 | | | | 0 | | | 0 | | | **60** | | | |
| **Credit** | 3 | | 0 | | 0 | | | | 0 | | | 0 | | | **3** | | | |

**B- Course Delivery:**

**1. Coverage of Planned Program**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topics Covered** | **Planned** Contact Hours | **Actual** Contact Hours | **Reason for Variations (\*)** |
| Time varying fields; Faraday's law, Transformer and motional emfs; Displacement current; Maxwell’s Equations. | 16 | 16 | ………………………………….. |
| Waves Maxwell's equations and time harmonic fields; Wave equation; Power transfer and Poynting vector; Plane wave propagation in free space, in lossy dielectrics and in good conductors; Polarization; Reflection of plane wave at normal and oblique incidence; | 16 | 16 | ………………………………….. |
| Transmission lines; Impedance matching | 12 | 12 | ………………………………….. |
| Waveguides | 8 | 2 | …………………………………..  The semester is terminated early |
| Introduction to radiation and antennas; Antenna parameters; Wire antennas | 8 | 2 |

( \* ) 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 |
| Waveguides | non | It is needed for communication track student, It is covered in Microwar course |
| Introduction to radiation and antennas; Antenna parameters; Wire antennas | non | It is needed for communication track student, It is covered in Antenna course |
| ………………………………. | ………………………………. | ………………………………. |
| ………………………………. | ………………………………. | ………………………………. |

**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** | **.....................................................................** | .................. | .................. |
| **2.0** | **Cognitive Skills** | | |
| **2.1** | Analyze Plane Waves propagation through various media by apply the general Maxwell’s Equations. | |  | | --- | | Standardized exams, Seminars and Assignment | | |  | | --- | |  |   69% |
| **2.2** | Determine the dielectric and magnetic properties of given materials |
| **2.3** | Apply the boundary conditions for electric and magnetic fields at dielectric interfaces |
| **2.4** | Solve Transmission line problems using EM field theory and electric circuit theory |
| **2.5** | Analyze transmission lines by applying the transmission-line equations and characteristic quantities and Smith chart. |
| **2.6** | Analyze the use of rectangular waveguide to guide electromagnetic waves. |
| **2.7** | Determine the radiated field and the radiation parameters of Hertzian dipole and the half-wave dipole. |
| **3.0** | **Interpersonal Skills & Responsibility** | | |
| **3.1** | **.....................................................................** | .................. | .................. |
| **3.2** | **.....................................................................** | .................. | .................. |
| **3.3** | **.....................................................................** | .................. | .................. |
| **3.4** | **.....................................................................** | .................. | .................. |
| **3.5** | **.....................................................................** | .................. | .................. |
| **3.6** | **.....................................................................** | .................. | .................. |
| **4.0** | **Communication, Information Technology, Numerical** | | |
| **4.1** | |  | | --- | | Apply knowledge of transformer and motional electromotive forces, displacement currents and time varying Maxwell’s Equations | | |  | | --- | | Standardized exams, memorization and individual presentation | | |  | | --- | |  |   65% |
| **4.2** | Determine the radiated field and the radiation parameters of Hertzian dipole and the half-wave dipole. |
| **4.3** | **.....................................................................** |
| **4.4** | **.....................................................................** |
| **4.5** | **.....................................................................** |
| **4.6** | **.....................................................................** |
| **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.**

|  |
| --- |
| Follow the articulation matrix and encouraging the student to actively participate in the teaching and learning process ………………………………………………………………………………. |

**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 |
| Giving Lectures, |  | X | ……………..…………………………. |
| Group discussion |  | x | ……………..…………………………. |
| Practical project |  | x | ……………..…………………………. |
| ……………………………………….… |  |  | ……………..…………………………. |
| ……………………………………….… |  |  | ……………..…………………………. |

**C. Results**

**1. Distribution of Grades**

|  |  |  |  |
| --- | --- | --- | --- |
| Letter  Grade | Number of  Students | Student  Percentage | Analysis of Distribution of Grades |
| **A+** | 0 | 0% | First exam 16%  Second Exam 20%  Quizzes & Homework 10%  Case Study 4%  Project 10%  Final exam 40%  Total 100%  The distribution fit a normal distribution curve |
| **A** | 1 | 8% |
| **B+** | 1 | 0 |
| **B** | 2 | 8% |
| **C+** | 1 | 8% |
| **C** | 1 | 8% |
| **D+** | 0 | 0 |
| **D** | 4 | 33% |
| **F** | 2 | 17% |
| Denied  Entry | 0 | 0% | ……………………………………………………….. |
| In Progress | 0 | 0% | ……………………………………………………….. |
| Incomplete | 0 | 0% | ……………………………………………………….. |
| Pass | 10 | 59% | ……………………………………………………….. |
| Fail | 2 | 12% | ……………………………………………………….. |
| Withdrawn | 5 | 29% | ……………………………………………………….. |

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

|  |
| --- |
| * The course is terminated early; the student did not do the second exam ………………………………………………………… * ……………………………………………………………………………………………… * ……………………………………………………………………………………………… |

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

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

|  |  |
| --- | --- |
| Variation | Reason |
| Early final exam | The semester is terminated early. |
| …………………………………………… | …………………………………………… |
| …………………………………………… | …………………………………………… |

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

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

**4. Student Grade Achievement Verification :**

|  |  |
| --- | --- |
| Method(s) of Verification | Good |
| ……colleague review…… Verified by Dr. Abdullah Al Ahmadi ……… | …………………………………………… |
| …………………………………………… | …………………………………………… |
| …………………………………………… | …………………………………………… |

**D. Resources and Facilities**

|  |  |
| --- | --- |
| Difficulties in access to resources  or facilities (if any) | Consequences of any difficulties experienced for student learning in the course |
| Non | …………………………………………… |
| …………………………………………… | …………………………………………… |
| …………………………………………… | …………………………………………… |

**E. Administrative Issues**

|  |  |
| --- | --- |
| Organizational or administrative difficulties encountered (if any) | Consequences of any difficulties experienced for student learning in the course |
| …………………Non………………………… | …………………………………………… |
| …………………………………………… | …………………………………………… |
| …………………………………………… | …………………………………………… |

**F Course Evaluation**

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

|  |
| --- |
| 1. List the most important recommendations for improvement and strengths   Student overall evaluation is 3.5/5 |
| b. Response of instructor or course team to this evaluation   * The course is considered a difficult and demanding that is why the students are usually harsh on evaluation |

**2. Other Evaluation :**

|  |
| --- |
| a. List the most important recommendations for improvement and strengths   * General evaluation is satisfactory * ……………………………………………………………………………………………… * ……………………………………………………………………………………………… |
| b. Response of instructor or course team to this evaluation :   * Encouraging student to actively participate in the teaching and learning process * .…………………………………………………………………………………………… * ……………………………………………………………………………………………… |

**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 |
| Using on line quizzes | Number of quizzes | Better results | ………………… |
| Adapting active teaching strategies | Case study was given, group discussion was adapted | Better understanding | ………………… |
| the addition of some reference books for the course | the improvement of the course syllabus |  | ………………… |

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

|  |
| --- |
| * More interactive teaching methods were adapted ……………………………………………………………………………………………… * ……………………………………………………………………………………………… |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Actions Recommended for Further Improvement | Intended Action Points  (should be measurable) | Start  Date | Completion  Date | Person Responsible |
| Follow the articulation matrix and encouraging the student to actively participate in the teaching and learning process | Give Micro-project,  case study  group presentation | Week 2 | Week 14 | ……..… |
|  |  | Week 2 | Week 14 | ……..… |
|  |  | …/…/1437 H | …/…/1437 H | ……..… |
| 1. ………………………… | ………………………… | …/…/1437 H | …/…/1437 H | ……..… |
| 1. ………………………… | ………………………… | …/…/1437 H | …/…/1437 H | ……..… |

**Course Instructor:**

|  |  |  |  |
| --- | --- | --- | --- |
| Name: | Dr. Mohamed Ouda | | |
| Signature: | ............................. | Date Report Completed: | 28/5/2017 |

**Program Coordinator:**

|  |  |  |  |
| --- | --- | --- | --- |
| Name: | ................................ | | |
| Signature: | ............................. | Date Received : | ....../…../1437 H |

