**TEMPLATE FOR COURSE SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

 **COURSE SPECIFICATION**

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| This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.  |

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| Al- Mansour University College  | 1. Teaching Institution |
| Communication Engineering Department  | 2. University Department/Centre |
| Electromagnetic Fields Theory - 2 | 3. Course title/code |
|  | 4. Programme (s) to which it contributes |
| Weekly – Lectures  | 5. Modes of Attendance offered |
| Second Semester / 2022– 2023 | 6. Semester/Year |
| 45 Hours  | 7. Number of hours tuition (total) |
| 6-2-2023 | 8. Date of production/revision of this specification  |
| 9. Aims of the Course |
| Graduating cadres with the necessary foundations to work in the field of communications, whether in the practical or academic aspects. |

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| 10· Learning Outcomes, Teaching ,Learning and Assessment Methode  |
| 1. Knowledge and Understanding

A1. A1- Understand the subject of electromagnetic fields in general. A2- Learn how to deal with the electric and magnetic fields separately. A3- Linking the electric and magnetic fields within the electromagnetic field. A4- Studying the wave motion of the electromagnetic field within the subject of electromagnetic wave propagation, which is one of the basics of communications.  |
|  B. Subject-specific skillsB1. B1 - B1 - Training the student to deal with different practical situations by solving problems in this direction. B2 - Training the student to take advantage of the academic foundations to advance to advanced methods and techniques that are directed towards graduation projects.  |
|  Teaching and Learning Methods |
| 1- Theoretical lectures with solving various practical examples. 2- Homework. |
|  Assessment methods  |
| 1- Assessment of class exercises 2- Evaluation of extra-curricular exercises 3- Semester exams |
| C. Thinking Skills C1- Training students on the behavior of the scientific approach in  investigation and research. C2 - Training students on scientific reasoning about dealing with different  issues and situations.   |

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| D. General and Transferable Skills (other skills relevant to employability and personal development) D1- Enable the student to obey the foundations he has received in order to be able to apply them in different aspects of life. D2 - Develop the student's ability to adopt these foundations so that he is able to  transfer them to others.  |

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| 11. Course Structure |
| Assessment Method | TeachingMethod | Unit/Module or Topic Title | ILOs | Hours | Week |
| class homework and assessment exams | Theoretical lectures  | Current and Current Density  | Introduction to electric current  | 6 | 1-2 |
| class homework and assessment exams | Theoretical lectures  | The Method of Images  | Dealing with charges and conductors  | 6 | 3-4 |
| class homework and assessment exams | Theoretical lectures  | Dielectric Materials  | Understanding insulators  | 6 | 5-6 |
| class homework and assessment exams | Theoretical lectures  | Magneto static Fields  | Understanding magnetic fields effects  | 6 | 7-8 |
| class homework and assessment exams | Theoretical lectures  | Time- Varying Fields and Maxwell’s Equations  | Understanding variable fields  | 6 | 9-10 |
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| class homework and assessment exams | Theoretical lectures  | Wave Equation for Time- Varying Fields | Wave properties | 6 | 11-12 |
| class homework and assessment exams | Theoretical lectures  | Wave Propagation in Dielectric and Conductors  | Waves in materials | 6 | 13-14 |
| class homework and assessment exams | Theoretical lectures  | Waves at Boundaries and Dispersive Media  | Effect of boundaries and media | 3 | 15 |

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| 12. Infrastructure |
| Theory and Problems of Electromagnetics, by Joseph A. Edminister Fudamentals of Applied Electronics , by Fawwaz | Required reading:· CORE TEXTS· COURSE MATERIALS· OTHER |