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| **Institute of Technology (IT) - university of Ouargla –**  **Department: Applied Engineering** |

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| **SUBJECT SYLLABUS**  **(to be published on the website)** |
| **Electromagnetism and applications** |

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| **COURSE TEACHER** | | **Mohammed Laid Mechri** | | | |
| Receiving students per week | | | |
| Email | [**mechrimedlaid@yahoo.com**](mailto:mechrimedlaid@yahoo.com) | Day | Tuesday | Hour | 8:00:00 AM |
| Landline phone |  | Day |  | Hour |  |
| Secretary phone |  | Day |  | Hour |  |
| Other | **664172090** | Building | **ISTA** | Office | Room 04 |

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| **Tutorials**  (Receiving students per week) | | | | | | | |
| Name of teacher | Office/reception room | Session 1 | | Session 2 | | Session 3 | |
| Day | Session | Day | Hour | Day | Session |
| **Mohammed Laid Mechri** | **Room 04** | **Tuesday** | **9:30:00 AM** |  |  |  |  |
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| **Practical works**  (Receiving of students per week) | | | | | | | |
| Name of teacher | Office/reception room | Session 1 | | Session 2 | | Session 3 | |
| Day | Session | Day | Hour | Day | Session |
| **Mohammed Laid Mechri**  **Meriem TOUIL** | Physics lab | Saturday | 08:00 |  |  |  |  |
|  | Physics lab | Saturday | 09:30 |  |  |  |  |
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| **Course description** | |
| Objective | Learn about the laws of electromagnetism and their applications to sensors |
| Type of Teaching Unit | UEF (Fundamental) |
| Short content | 1) Electrostatics: field, potential, capacitors, electrostatic energy, applications (sensors, etc.)  2) Electromagnetism: magnetic excitation field H, magnetic induction field B, induction flux. Laplace's law. Work of magnetic forces.  Laws of induction (application of eddy currents). Electromagnetic energy. Magnetic circuits, hysteresis.  3) Technology: passive components, magnetic components (electromagnet, permanent magnets, relays, etc.) |
| Subject Credits | 1.5 |
| Subject coefficient | 1.5 |
| Weighting Participation |  |
| Weighting Attendance |  |
| Average Calculation | MCC = test /12 + attendance /4 + homework/4 |
| Skills targeted | Knowing the basics of electromagnetism and electrostatics and understand the operation of passive and magnetic components above |

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| **Assessment of continuous knowledge test** | | | | | | | |
| **First knowledge test** | | | | | | | |
| Day | Session | Duration | Type (1) | Doc. Allowed (yes/no) | Scale | Exchange after evaluation (date of sheet consulting) | Evaluation criteria (2) |
| Tuesday | 9:30:00 AM | 30 | E | No |  |  |  |
| **Second knowledge test** | | | | | | | |
| Day | Session | Duration | Type (1) | Doc. Allowed (yes/no) | Scale | Exchange after evaluation (date of sheet consulting) | Evaluation criteria (2) |
|  |  | 30 | QCM | No |  |  |  |

(1) Type: E=written, EI=individual presentation, EC=class presentation, EX=experimentation, MCQ

(2) Assessment criteria: A=Analysis, S=synthesis, AR=argumentation, D=approach, R=results.

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| **Used Equipment and Material** | |
| Platforms addresses | Moodle |
| Application names (web, local networks) | http://ressources.univ-lemans.fr/AccesLibre/UM/Pedago/physique/02/mnoptigeo.html |
| Handouts | Educational documentation |
| Laboratory material | Transformer. Electric motor. inductive sensors… |
| Protective material |  |
| Material to be used in the field |  |

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| **Expectations** | |
| Expectations of students (Participation-involvement) |  |
| Teacher expectations |  |
| **Bibliography** | |
| Books and digital resources | Introduction to electrodynamics / David J. Griffiths |
| Articles (papers) |  |
| Handouts |  |
| Websites | http://ressources.univ-lemans.fr/AccesLibre/UM/Pedago/physique/02/mnoptigeo.html |

Stamp of the department