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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** | 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