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| Course Title | **Physics II** |
| Course Code | MANS-104 |
| Course Type | Required |
| Level | 1st Cycle |
| Year / Semester | 1st Year, Spring Semester |
| Teacher’s Name |  |
| ECTS | 4 | Theory | Laboratory | Simulation | Tutorial |
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| Course Purpose and Objectives | The main objectives of the course are to:* introduce students to the basic concepts of thermal physics and waves
* to assist in the development of strong problem-solving skills
* to help cultivate critical thinking in the approach to learning
* consolidate the basic principles discussed in the theoretical section of the course with laboratory experiments
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| Learning Outcomes | After completion of the course students are expected to:1. Describe simple harmonic motion, calculate the variables in simple harmonic motion, analyze the period of oscillations with regard to mass and spring stiffness in mass-spring systems.
2. Understand forced oscillations and the importance of resonance in nature and engineering applications.
3. Be able to mathematically express a traveling wave and a standing wave as a result of interference.
4. Understand the principles of electricity and magnetism
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| Prerequisites | MANS-102 | Required | None |
| Course Content | 1. Simple harmonic motion and Resonance
2. Transverse and longitudinal waves, wave characteristics, interference and standing waves
3. Sound waves, speed of sound, standing waves, Doppler effect
4. Electricity
5. Magnetism

ExperimentsSimple Harmonic MotionStanding waves in stringSpeed of sound and resonance tubeElectric CircuitsMagnetic devices |
| Teaching Methodology | Lectures, Tutorials, Laboratory Work |
| Bibliography | **Required Textbooks/Reading:**

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| **Authors** | **Title** | **Publisher** | **Year** | **Library Access** |
| D. Giancoli | Physics, Principles with applications | Pearson | 7th Edition | Copy |

**Recommended Textbooks/Reading:**

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| **Authors** | **Title** | **Publisher** | **Year** | **Library Access** |
| Ben Crowell  | Conceptual  | <http://www.lightandmatter.com/> | Ben Crowell  | Free to download |

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| Assessment | Midterm Exam, Final Exam, Homework Assignments, Lab reports |
| Language | English  |