

Kurdistan Region Government

Ministry of Higher Education and Scientific Research

Erbil Polytechnic University

**Module (Course Syllabus) Catalogue**

**2023-2024**

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| **College/ Institute** | **Erbil Technical Health** | |
| **Department** | **Physiotherapy** | |
| **Module Name** | **Medical Physics** | |
| **Module Code** | **MEP105** | |
| **Degree** | **Technical Diploma Bachler High Diploma Master PhD**  1 | |
| **Semester** | **1st** | |
| **Qualification** |  | |
| **Scientific Title** |  | |
| **ECTS (Credits)** | **7ECTS** | |
| **Module type** | **Prerequisite Core Assist.**  1 | |
| **Weekly hours** | **5** |  |
| **Weekly hours (Theory)** | **(2)hr Class** | **( )Total hrs Workload** |
| **Weekly hours (Practical)** | **(3)hr Class** | **( )Total hrs Workload** |
| **Number of Weeks** | **8** | |
| **Lecturer (Theory)** | **Karim Mahmood Ababakr & Didar Swara Salih** | |
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| **Lecturer (Practical)** | **Karim Mahmood Ababakr & Didar Swara Salih** | |
| **E-Mail & Mobile NO.** | [**Karim.ababakr@epu.edu.iq**](mailto:Karim.ababakr@epu.edu.iq)**, 07504479612**  **Didar.salih@epu.edu.iq** | |
| **Websites** |  | |

**Course Book**

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| **Course Description** | Provide an introduction to key physical principles applied in physiotherapy through education and practical training. The course covers a wide range of topics needed in physiotherapy including: Electromagnetic radiation, heat, ultrasound, electrotherapy, force and motion, measurements and units. The students gain knowledge in variety of Physical concepts and will be prepared for other courses that are closely related to physics such as therapeutic equipment. | | | | | |
| **Course objectives** | Develop basic understanding of medical physics concepts. Develop scientific communication skills. Provide education and practical training for students and prepare them for careers in physiotherapy. Provide a basic knowledge for the Therapeutic equipment course. | | | | | |
| **Student's obligation** | Students should attend the lectures  Students should take all exams including daily quizzes and practical exam | | | | | |
| **Required Learning Materials** | Principle of electricity, radiation, ultrasound, thermodynamic, force and motion, etc.. | | | | | |
| **Evaluation** | ‌ **Task** | | **Weight (Marks)** | | **Due Week** | **Relevant Learning Outcome** |
| Paper Review | |  | |  |  |
| Assignments | Homework |  | |  |  |
| Class Activity |  | |  |  |
| Report |  | |  |  |
| Seminar |  | |  |  |
| Essay |  | |  |  |
| Project |  | |  |  |
| Quiz | |  | |  |  |
| Lab. | |  | |  |  |
| Midterm Exam | |  | |  |  |
| Final Exam | |  | |  |  |
| Total | |  | |  |  |
| **Specific learning outcome:** | 1- Ability to develop general knowledge in physiotherapy and understand the subjects of the module  2- Ability to understand and use, of general physics in physiotherapy.  3- Demonstrate the ability to think critically and solve problems  4-Ability to apply knowledge in practice  5- Ability to make reasoned decision.  6-Demonstrates research skills to investigate, evaluate or problem solve.  6- | | | | | |
| **Course References‌:** | Fundamentals of Electrotherapy & Biomedical Physics by Ashish Kakkad  Textbook of Electrotherapy by Jagmohan Singh | | | | | |
| **Course topics (Theory)** | | | | **Week** | | **Learning Outcome** |
| Introduction to Medical Physics | | | | 1 | | 1&2 |
| Physics and Measurements | | | | 2 | | 2&4 |
| Force and Laws of Motion | | | | 3 | | 2 |
| Temperature and Heat | | | | 4 | | 2&3 |
| Electromagnetic Spectrum | | | | 5 | | 4 |
| Electricity | | | | 6 | | 2&5 |
| Sound Wave | | | | 7 | | 2&5 |
| Energy and Power | | | | 8 | | 2&6 |
| Fluid Mechanics | | | | 9 | | 2&6 |
| **Practical Topics** | | | | **Week** | | **Learning Outcome** |
| Reflection of light and Snell's law | | | | 1&2 | | 2&5&4 |
| Focal length of concave lens by displacement method | | | | 3&4 | | 2&3&4 |
| Diffraction grating, measuring the wavelength of light | | | | 5&6 | | 2&3&4 |
| Ohm's law | | | | 7&8 | | 2&3&4 |
| Spiral spring | | | | 9&10 | | 2&6&4 |
| **Questions Example Design**  1. define:  2. Explain:  3. Calculate:  4. Fill in the blanks:  5. Multiple choices:  6. Enumerate:  7. Match the following:  8. True or False | | | | | | |
| **Extra notes:** | | | | | | |
| **External Evaluator**  I do approve the content of this course-book. It does cover the general concepts of physics in physiotherapy. The topics are broad and are aimed to equip students with required knowledge to enable them to understand the physics concept of the physiotherapy equipment in latter stages.  **C:\Users\RAM FOR COMPUTER\Downloads\signature (1).png**  Lecturer  Chiman Bakir Ismail | | | | | | |