

Kurdistan Region Government

Ministry of Higher Education and Scientific Research

Erbil Polytechnic University



**Module (Course Syllabus) Catalogue**

**2020-2021**

|  |  |  |
| --- | --- | --- |
| **College/ Institute** | **Technical Health and Medical College -Polytechnic University** | |
| **Department** | **MLT** | |
| **Module Name** |  | |
| **Module Code** | **LIN205** | |
| **Degree** | **Technical Diploma Bachler High Diploma Master PhD** | |
| **Semester** | **2** | |
| **Qualification** | **PhD** | |
| **Scientific Title** | **lecturer** | |
| **ECTS (Credits)** | **6** | |
| **Module type** | **Core** | |
| **Weekly hours** | **1** | **3** |
| **Weekly hours (Theory)** | **( 1 )hr Class** | **( 1 )Total hrs Workload** |
| **Weekly hours (Practical)** | **(3 )hr Class** | **( 13 )Total hrs Workload** |
| **Number of Weeks** | **12** | |
| **Lecturer (Theory)** | **Shler qasim Hussein** | |
| **E-Mail & Mobile NO.** | **Shler.hussien@epu.edu.iq** | |
| **Lecturer (Practical)** | **Lecturer :Sozan Sami Ali** | |
| **E-Mail & Mobile NO.** | **sozan.ali@epu.edu.iq** | |
| **Websites** |  | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Description** | Student introduce to different lab instruments and learn how to use each device and maintain it. Because, during their 4-year study and after their graduations continuously they deal with these devices, therefore it’s important to teach students what’s these devices and composed of what, and how to maintain it. | | | | | | | |
| **Course objectives** | **To learn**  **1-How to deal with different kind of lab instruments.**  **2- How to maintain it.** | | | | | | | |
| **Student's obligation** | We have theory 1 hours, practical 3 hours General advice:  The students obligate to attend the lessons and accomplish all the requirements prepared by the facilitators in both theoretical and practical parts. | | | | | | | |
| **Required Learning Materials** | different kind of lab instruments | | | | | | | |
| **Evaluation** | | ‌ **Task** | | | | **Weight (Marks)** | **Due Week** | **Relevant Learning Outcome** |
| Paper Review | | | |  |  |  |
| Assignments | Homework | | | 3 | 1 |  |
| Class Activity | | |  | 1 |  |
| Report | | |  | 1 |  |
| Seminar | | |  | 1 |  |
| Essay | | |  |  |  |
| Project | | |  |  |  |
| Quiz | | | | 6 |  |  |
| Lab. | | | |  |  |  |
| Midterm Exam | | | |  |  |  |
| Final Exam | | | |  |  |  |
| Total | | | |  |  |  |
| **Specific learning outcome:** | | 1- Student introduce to different lab instruments  2 learn how to use each device and maintain  3-Learn use different device for the same test and how to choose the best | | | | | | |
| **Course References‌:** | | 1- Benson: Microbiological Applications Lab Manual, Eighth Edition  2-Essential equipment in medical laboratory (Ahmad Mustafa bushier) | | | | | | |
| **Course topics (Theory)** | | | | **Week** | **Learning Outcome** | | | |
| , Microscope Parts of the Microscope and Their Function | | | | 1.3.2022 | Describe and identify each part | | | |
| Types of light Microscopes | | | | 8.3.2022 | Learning the purpose of using different type of light Microscope,  advantage and disadvantage of using each type of light Microscope | | | |
| Electron Microscope, Types of Electron Microscopes, difference between light and electron Microscope | | | | 15.3.2022 | Introduce to electron microscope Why we use different type of electron Microscope,  difference between light and electron Microscope. | | | |
| Centrifugation, Types of centrifuge | | | | 22.3.2022 | Principles of centrifugation, define and explain each type of lab centrifuge, how to choose centrifuge according to the sample | | | |
| Balance, types of Balance | | | | 29.3.2022 | purpose of using many types of balance ,and why using Balance. | | | |
| Incubator, types of incubator | | | | 5.4.2022 | Introduce to different type of Incubator , define and explain each type of incubator, | | | |
| Water bath,Typs of Water bath | | | | 12.4.2022 | Describe principle of device, | | | |
| oven, and autoclave | | | | 19.4.2022 | define and explain in details each device oven and autoclave and their usage | | | |
| pH meter | | | | 26.4.2022 | Usage of ph. meter ,why we use it , | | | |
| Spectrophotometer | | | | 3.5.2022 | Characterization by waves, measurement of wave length of substances | | | |
| Hb. Meter, CBC | | | | 10.5.2022 | Principles of the device , how the device work, analyse the result | | | |
| Gel electrophoresis | | | | 17.5.2022 | Analysis of DNA | | | |
|  | | | |  |  | | | |
|  | | | |  |  | | | |
| **Practical Topics** | | | | **Week** | **Learning Outcome** | | | |
| Microscope Parts of the Microscope and Their Function | | | | 1 | Describe and identify each part | | | |
| Types of light Microscopes | | | | 2 | using each type of light Microscope | | | |
| Electron Microscope, Types of Electron Microscopes, difference between light and electron Microscope | | | | 3 | Student Introduce to Electron Microscope through you tube, because there is no Electron Microscope in our college. If it possible making a scientific trip to | | | |
| Centrifugation, Types of centrifuge | | | | 4 |  | | | |
| Balance, types of Balance | | | | 5 |  | | | |
| Incubator, types of incubator | | | | 6 |  | | | |
| Water bath,Typs of Water bath | | | | 7 |  | | | |
| oven, and autoclave | | | | 8 |  | | | |
| pH meter | | | | 9 |  | | | |
| Spectrophotometer | | | | 10 |  | | | |
| Hb. Meter, CBC | | | | 11 |  | | | |
| Gel electrophoresis | | | | 12 |  | | | |
|  | | | | | | | | |
| **Questions Example Design**  **1. explainational**  **Q/ why we use fluorescence microscopes?**  **A1-To study organism stained**  **2- To study some material which is emit energy when stimulated.**  **• True or false type of exams:**  **Q/** **optical dark field microscope uses to study stained microorganism's**  **• F/Study living unstained microorganism's • Single choice Questions**  **Q/ to Identify certain crystalline we use:**  **a-fluorescence-bright field, c-dark field- phase contrast microscope.**  **A-** | | | | | | | | |
| **Extra notes:**  **Student should be care about the distance between them ,by making sub groups also wearing gloves and mask especially practical experiments.** | | | | | | | | |
| **External Evaluator** | | | | | | | | |

* **Assessment scheme**

‌40% Assignments

4% Quiz

16% Midterm Exam

15% Final Theoretical Exam

25% Final Practical Exam

**Course Book**