

Kurdistan Region Government

Ministry of Higher Education and Scientific Research

Erbil Polytechnic University



**Module (Course Syllabus) Catalogue**

**2020-2021**

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| **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**  |  |

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| **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 instruments2 learn how to use each device and maintain3-Learn use different device for the same test and how to choose the best |
| **Course References‌:** | 1- Benson: Microbiological Applications Lab Manual, Eighth Edition2-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  |
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| **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**