



**Ministry of Higher Education and Scientific Research**

**Mustansiriyah University /College of Science**

**Department of ....Biology....**

**(الخطة الدراسية للمساق)**

**Course Plan**

**Course No.:**  **Time Division:** …2.. hr Theoretical and …3…hr Practical

**Course Name: Bacterial physiology Semester & Year: First, 2022 / 2023**

**Course Website:**

**Course Description:**

**This subject presents the - This subject presents the functions of the cell ; how bacterial cell grow ,divide ,reproduce, move , feed ; how uptake nutrients ,synthesize sugar, proteins, lipids, nucleic acids, also studying the effect of different conditions on the cell.**

**Course Intended Outcomes: At the end of the course the student has been studied the relation between cell structure & function, cell metabolism; Catabolism & Anabolism in addition to energy release.**

**Course Outline:**

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| --- | --- |
| **Week** | **Description depends on the Timing table (Theoretical & Practical)** |
| **1** | **Lec 1: Introduction for bacterial physiology**  **Lab1: Metabolism 1** |
| **2** | **Lec 2; Bacterial cell structure**  **Lab 2: Metabolism 2** |
| **3** | **Lec 3 ; Cell function**  **Lab3: Bacterial Growth Curve** |
| **4** | **Lec 4; Microbial nutrition**  **Lab4: Culture media** |
| **5** | **Lec.5: Microbial growth**  **Lab 5: The Growth of bacterial populations** |
| **6** | **Lec6 ; Influence of environmental factors on growth ; Solutes & Water activity, pH**  **Lab 6: Factors effecting microbial growth 1** |
| **7** | **Lec.7: Oxygen concentration , Radiation**  **Lab7: Factors effecting microbial growth 2** |
| **8** | **Exam** |
| **9** | **Lec.8: Metabolism ; Energy , Oxidation- Reduction Reactions , Electron carriers**  **Lab 8: Effect of U.V.on growth** |
| **10** | **Lec.9: Energy Release and Conservation**  **Lab 9: Effect of Temperature on growth** |
| **11** | **Lec.10: Catabolism of Carbohydrates, Proteins and Lipids**  **Lab 10: Hydrogen ion concentration (pH)** |
| **12** | **Lec.11: Anabolism; Synthesis of Sugars ,Polysaccharides ,Amino Acids**  **Lab 11: Osmatic pressure** |
| **13** | **Lec.12: Synthesis of purines & pyrimidines ,Nucleotides**  **Lab 12: Nutritional Requirements of Cells 1** |
| **14** | **Lec.13: Synthesis of Lipids**  **مراجعة المختبرات** |
| **15** | **Exam**  **أمتحان شهري** |

**Textbooks:**

**[1]:** Albert G.Moat, John W.Foster, Michael.P. Spector, (2002), Microbial Physiology, 4th.ed.

**[2]:** Prescott, Harley Klein; 2005, Microbiology, 6th.ed.

**Suggested references:**

**[1]:** John Robert Sokatech, 2014, Bacterial Physiology and Metabolism**.**

**[2]:** Michael Madigan *et*.*al*. (2012) ; Biology of Microorganisms13th.ed

**Marking:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **First Semester** | | | | **Final Exam** |
| **1st exam** | **2nd exam** | **Practical** | **Activity** |  |
| **12** | **12** | **12** | **4** | **60** |

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| **Assignment/ Project** | **Description** | **Due Date** | **Marking** |
| **test** | **written exam** | **2022** | **2** |
| **Quizzes** | **Written exam** | **2023** | **2** |

**Instructor(s) information [معلومات الأستاذ]**

**Section: (Biology) ; Lecture Room:[ 302 ] , ; Office No.: ( 13 )**

**Instructor's Name:** **Dr. Neihaya Heikmat Zaki**

**E-Mail**:dr.neihayahz@uomustansiriyah.edu.iq

**Office Hours : Tue.: [ 10 : 00 – 12 : 00 ]**

**Wed.: [11: 00 – 1: 00 ]**

**NOTES:**

**-Office Hour:Other office hours are available by appointment.**

**-The content of this syllabus not be changed during the current semester.**

**Lecturer Signature Chairman Signature**