**وزارة التعليم العالي والبحث العلمي**

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| **اسم المادة** | **باللغة العربية** | **البايولوجي** | **السنة الدراسية الاولى** | **عدد الساعات الاسبوعية** | | | |
| **باللغة الانكليزية** | **Biology** | **نظري** | **عملي** | **المحموع** | **عددالوحدات** |
| **لغة تدريس المادة** | | **الانكليزية** | **2** | **2** | **4** | **6** |

**القسم: تقنيات الأشعة**

**اهداف المادة :ان يكون الطالب قادرا على التعرف على اجزاء الخلية وانواعهاوانقسامهاووظائف الخلية بشكل عام وكذلك يتعرف الطالب على انواع خلايا الجسم البشري .**

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| **Theoretical & practical syllabus** | |
| **Details** | **week** |
| **Introduction, history & general concepts of biological cell theory, prokaryotic & eukaryotic cell.** | **1** |
| **Plasma membrane (structure, integral protein, lipids). Functional activity fluid cell mosaic factors effect on permeability, chemical composition.** | **2** |
| **Mitochondria (morphology, structure), lysosomes (types, function), Golgi complex (morphology, function).** | **3** |
| **Endoplasmic reticulum (smooth & rough) their function. Ribosome, protein synthesis.** | **4** |
| **The nucleus, nuclear envelope.** | **5** |
| **The cell cycle. Mitosis, cell division, meiosis.** | **6** |
| **Cell chemistry, water, salts, and ions.** | **7** |
| **Macromolecules, proteins, carbohydrates, lipids.** | **8, 9** |
| **Nucleic acids.** | **10** |
| **DNA structure & function.** | **11** |
| **Chromosome, structure, changes (duplication, translocation, inversion)** | **12, 13** |
| **First examination** | **14** |
| **Radiation biology concept, history, sources.** | **15** |
| **Techniques used in radiation biology.** | **16** |
| **Types of radiation, chemical yield, ionic yield.** | **17** |
| **Radiation effects on water, hydrogen peroxide.** | **18** |
| **Radiation effects on DNA molecule, repair mechanism.** | **19** |
| **Application of radiation isotopes, medical application, food preservation by irradiation.** | **20** |
| **Control of insects, genetic studies.** | **21** |
| **Second examination** | **22** |
| **Introduction to microbiology.** | **23** |
| **Bacterial growth requirements.** | **24** |
| **Bacterial growth curve.** | **25** |
| **Anatomy of bacterial cell.** | **26** |
| **Types of stains & smear preparation.** | **27** |
| **Media & classification.** | **28** |
| **Final examination** | **29 , 30** |