**King Saud University**

**College of Science Zoology Department**



**جامعة الملك سعود**

**كلية العلوم**

**قسم علم الحيوان**

**Histological preparations (ZOO 262)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Designation** | **Zoo-262** | **262 حين** | **رقم المقرر ورمزه** |
| **Course Name** | **Histological preparations** | تحضيرات مجهرية | **اسم المقرر** |
| **No. of Credits** | **2 (1 + 1)** | **2 ساعات (1 + 1)** | **عدد الوحدات الدراسية المعتمدة** |
| **Prerequisites** | **None** | **لا يوجد** | **متطلب سابق** |
| **Co-requisite Course** | **None** | **لا يوجد** | **متطلب مصاحب** |

Exams

**Midterm exams (30%)**

**Midterm1 Exam: Thursday (Week 5) 20-2-2020 @ 1-2 pm (15%)  
Lectures 1 to 4  
Midterm2 Exam: Thursday (Week 9) 19-3-2020 @ 1-2 pm (15%)  
Lectures 5 to 7  
Cumulative final exam: Thursday (Week 13) 16-4-2020 @ 1-2 pm (40%)  
lectures 1 to 9**

**Laboratory (30%)**

**Absence for 25% of course hours (approximately 9 hrs.) including lab hours, student will be deprived from the course**

Evaluation and Assessment

|  |  |  |
| --- | --- | --- |
| **Grade** | **Activities** |  |
| **15** | **First midterm exam** | **1** |
| **15** | **Second midterm exam** | **2** |
| **30** | **Practical** | **3** |
| **40** | **Final Examination** | **4** |
| **100** | **Total** |  |

|  |
| --- |
| List of Topics |
| * Introduction to Histology, and its relation to other sciences. An idea to common terminology in histology |
| * Different methods in collecting tissue sample from an organism. |
| * The steps of routine histological preparations starting from fixation |
| * The objectives of fixation as the first step after obtaining tissue. |
| * Studying the different types of fixatives and give some examples for each type. |
| * Studying factors that affect fixation |
| * Studying different steps for preparation of histological slides (Tissue processor), including Dehydration (The definition, the aim, and the chemical reagents which can be used) |
| * Studying Clearing and infiltration. (The definition of each step, the aim of each step, and the chemical reagents which can be used in each step) |
| * To study the embedding step, its definition, the purpose of this step). |
| * Paraffin wax as a typical embedding material (its chemical composition, its proprieties, methods to improve its properties). |
| * Comparing between the manual routine histological preparations and the automated histological preparation using tissue processor machine. How to hold the tissue sections on glass slide. |
| * Staining the tissue. Different types of stains, and an example from each type.Focusing on haematoxylin and eosin stain. Mounting |
| * Studying the structure of different microscopy (light, phase-contrast, polarized and fluorescent), and compare between them. |
| * Studying the structure of electron microscope, giving an idea of how to prepare tissue to be visualized under electron microscope. |

|  |  |  |
| --- | --- | --- |
| **Date** | **Content** | **Week** |
|  | **Introduction + Sciences (Lecture 1, page 1 -2)** | **1** |
|  | **Lecture 2, p 3 -7** | **2** |
|  | **Lecture 3, p 8-10** | **3** |
|  | **Lecture 4, p 11-13** | **4** |
| **20-2-2020 @ 1-2 pm (15%)** | **M1 Exam** | **5** |
|  | **Lecture 5, p 14-18** | **6** |
|  | **Lecture 6, p 18-21** | **7** |
|  | **Lecture 7, p 22-24** | **8** |
| **19-3-2020 @ 1-2 pm (15%)** | **M2 Exam** | **9** |
|  | **Lecture 8, p 25-28** | **10** |
|  | **Lecture 9, p 1-28** | **11** |
|  | **Revision** | **12** |
| **16-4-2020 @ 1-2 pm (40%)** | **Final** | **13** |