**King Saud University**

**College of Applied Medical Sciences**

**Clinical laboratory science Department**

**Template for practical course specifications**

**Basic informations**

**-Title of the programs:** CLS (Clinical laboratory science)

**-Title of the course:** practical electron microscopy

**-Code number of the course:** CLS 324

**-Credit hours:** 1 Hours

**-Contact hours:** 2 Hours

**-Academic year:**  1432/1433

**-Level:**  6

**Tutors conducting the course**

|  |  |  |  |
| --- | --- | --- | --- |
| No | Name  | Mobile | e- Mail |
| 1- | Rawan al frayh | 0504152204 | ralfrayh@KSU.EDU.SA |

**Professional informations**

**(Course specifications)**

* **Overall aims of the course:**
1. Introduction to electron microscopy uses(SEM & TEM)
2. Demonstration to EM lab rooms
3. Sample collection
4. Sample processing

* **Intended learning outcomes of the course: (Skills)**
* **Practical skills:**

Cognitive skills:

1. Students should be able to identify different parts of the electron microscope (SEM & TEM).
2. Students should know how to use ultramicrotome.
3. Students must know how to process different type of specimen.
4. Safety in lab
* **Interpersonal skills:**

1. Ability to function effectively as a student of CLS department.

2. Ability to appropriate mode of communication (direct, telephone and email).

3. Encouraging other to come up with solution and listening carefully to each idea.

4. Ability to differentiate between SEM & TEM.

* **Course contents (Time schedule)**

|  |  |  |
| --- | --- | --- |
| Week | Practical lesson | No. of hours |
| 1  | Introduction to EM lab and safety precautions. | 1 |
| 2 | Collection of specimen and buffer preparation. | 2 |
| 3 | Fixation. | 2 |
| 4 | Dehydration and Rat dissection**.** | 2 |
| 5 | Fist Mid Term | 1 |
| 6 | Embedding and polymerization**.** | 2 |
| 7 | Knife making and sectioning**.** | 2 |
| 8 | Second Mid Term | 1 |
| 9 | Grids and staining**.** | 2 |
| 10 | Deparafinization. | 2 |
| 11 | SEM (scanning electron microscope) | 2 |
| 12 | Final Practical Examination | 2 |
| 13 |  |  |
| 14 |  |  |
| 15 |  |  |

* **Teaching Methods:**

Demonstration, explaining, participation, and use of audiovisuals.

* **Assessement methods:**

40% of the course which is equal to 40 marks divided into

MT1………….………………………………………………..…….10 marks

MT2………………………………………………………………….10 marks

Final………………………………………………..……………....20 marks

* **References:**

El-Shewemi, SE. (2004) . Essential Electron Microscopy. Riyadh: King Fahd National Library Cataloging-in-publication Data.