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| **Course number**:  **CLS 322** | | **Course title: Histological Techniques** |
| **Level/semester: 6th level / 2nd Semester** | | |
| **Credit hours:** | | **Thereof lecture hours: 1** |
| **Thereof practical hours: 1** |
| **Language: English** | | |
| **Aims and goals/ skills of the course:** | | This course will provide the student with the basic knowledge in the techniques of tissue preparation, staining and examination under the light microscope. Knowledge will be focused mainly on the paraffin technique; however, other histological methods will be covered. Also, the student will be instructed how to use the light microscope properly. An idea about other types of microscope will be provided. |
| **Content of the course:** | | **Weeks Subjects**  1. Introduction to Microtechniques  Lab tools, rules & safety  2. Different histological methods (paraffin, celloidin, cryostat) Fresh unfixed tissue; teased, squashed, smear, impression, frozen techniques  Tissue processing (manual, automated)  3. Upon obtaining the specimen  Narcotization  Steps of tissue preparation  4. Fixation (purpose, effects, methods, types)  5. Dehydration and clearing  6. Infiltration and embedding  Types of wax, other embedding media  7. Sectioning: 1) Microtome, Types, components, techniques, and care  2) Microtome knife; types, sharpening3) Sectioning  Affixation and mounting  8. Staining: Definitions  Theory, mechanism, Types,  9. Principle of light microscope,  Theory of magnification & resolution  Components, Definitions  10. Dark field microscope, Fluorescent microscope  11. Polarized microscope  Phase contrast microscope  12. Discussion  13. Revision |
| **Examination:** | | Written & practical examination,  First Mid Term Examination 15  Second Mid Term Examination 15  Final Practical Examination 30  Final Written Examination 40 |
| Course Leader | Dr Nami Aljehani  Office number: 2327 -2nd floor  Email: naljehani@ksu.edu.sa | |