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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 MicrotechniquesLab tools, rules & safety2. Different histological methods (paraffin, celloidin, cryostat) Fresh unfixed tissue; teased, squashed, smear, impression, frozen techniquesTissue processing (manual, automated)3. Upon obtaining the specimenNarcotizationSteps of tissue preparation4. Fixation (purpose, effects, methods, types)5. Dehydration and clearing6. Infiltration and embeddingTypes of wax, other embedding media7. Sectioning: 1) Microtome, Types, components, techniques, and care2) Microtome knife; types, sharpening3) SectioningAffixation and mounting8. Staining: DefinitionsTheory, mechanism, Types,9. Principle of light microscope,Theory of magnification & resolutionComponents, Definitions10. Dark field microscope, Fluorescent microscope11. Polarized microscopePhase contrast microscope12. Discussion13. Revision |
| **Examination:** | Written & practical examination,First Mid Term Examination 15Second Mid Term Examination 15Final Practical Examination 30Final Written Examination 40 |
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