# MATERIAL SAMPLING, SECTIONING AND STAINING TECHNIQUES

| 1 | Course Title: | MATERIAL SAMPLING, SECTIONING AND STAINING TECHNIQUES |
|---|---|---|
| 2 | Course Code: | VPT 6003 |
| 3 | Type of Course: | Compulsory |
| 4 | Level of Course: | Third Cycle |
| 5 | Year of Study: | 1 |
| 6 | Semester: | 1 |
| 7 | ECTS Credits Allocated: | 5.00 |
| 8 | Theoretical (hour/week): | 1.00 |
| 9 | Practice (hour/week): | 2.00 |
| 10 | Laboratory (hour/week): | 0 |
| 11 | Prerequisites: | None |
| 12 | Language: | Turkish |
| 13 | Mode of Delivery: | Face to face |
| 14 | Course Coordinator: | Prof. Dr. M.MÜFIT KAHRAMAN |
| 15 | Course Lecturers: | - |
| 16 | Contact information of the Course Coordinator: | gursels@uludag.edu.tr, 224 2941303, Uludağ Üniv. Veteriner Fak. Patoloji Anabilim Dalı Görükle Kampüsü 16059 BURSA |
| 17 | Website: | http://saglikbilimleri.uludag.edu.tr |
| 18 | Objective of the Course: | To teach students the fixation, decalcification, processing of tissues, preparation of sections and staining methods for histopathological examination |
| 19 | Contribution of the Course to Professional Development: | |
| 20 | Learning Outcomes: | |

| | | 1 | The student learns fixative solutions and application techniques, fixation problems and delcalcification techniques |
|---|---|---|---|
| | | 2 | The student learns processing of tissues and embedding in paraffin |
| | | 3 | The student learns preparation of sections |
| | | 4 | The student learns routine hematoxylin and eosin staining method |
| | | 5 | The student learns special staining techniques |
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| 21 | Course Content: | |
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| Course Content: | | |
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| Week | Theoretical | Practice |
|---|---|---|

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| 1 | Preparation of tissues (fixation) | Preparation and application of fixative solutions |
| 2 | Preparation of tissues (decalcification) | Preparation and application of decalcifying solutions |
| 3 | Processing of tissues (dehydration, clearing, paraffin embedding) | Dehydrating, clearing and embedding in paraffin of tissues |
| 4 | Preparation of sections | Preparation of sections |
| 5 | Routine staining procedures (Hematoxylin and Eosin methods) | Routine Hematoxylin and Eosin staining |
| 6 | Staining methods of connective tissue (collagen, keratin, mucin, muscle) | Connective tissue staining |
| 7 | Staining methods of cytoplasmic granules (mast cells, chromaffin) | Mast cells staining |
| 8 | Staining methods of hematologic and nuclear elements | Giemsa staining |
| 9 | Staining methods of fats and lipids | Fat staining |
| 10 | Staining methods of carbohydrates and mucoproteins (amyloid, glycogen) | Amyloid and glycogen staining |
| 11 | Staining methods of pigments and minerals | Calcium and urate crystals staining |
| 12 | Staining methods of pigments and minerals (cooper, hemosiderin, iron) | Iron staining |
| | (astrocytes, nerve fibers) | |
| | Staining methods of bacteria and fungi (acid fast organisms, Gram, fungi) | Bacterial and fungi staining |
| 22 | Textbooks, References and/or Other | Histological and Histochemical Technics (Davenport, H.A., ... Manual of Histologic Staining Methods of the Armed Forces Institute of Pathology (Luna, L.G., 1968, McGraw- ... J.D., Gamble, M., 2002, Churchill Livingstone, London) ... Oxfordshire) |

| Activites | Number | Duration (hour) | Total Work Load (hour) |
|---|---|---|---|
| Theoretical | 14 | 1.00 | 14.00 |
| Practicals/Labs | 14 | 2.00 | 28.00 |
| Self study and preperation | 14 | 2.00 | 28.00 |
| Homeworks | 0 | 0.00 | 0.00 |
| Projects | 0 | 0.00 | 0.00 |
| Field Studies | 0 | 0.00 | 0.00 |
| Midterm exams | 0 | 0.00 | 0.00 |
| Others | 10 | 4.00 | 40.00 |
| Final Exams | 1 | 40.00 | 40.00 |
| Total Work Load | | | 150.00 |
| Total work load/ 30 hr | | | 5.00 |
| ECTS Credit of the Course | | | 5.00 |

| 23 | Assesment |
|---|---|

| TERM LEARNING ACTIVITIES | NUMBER | WEIGHT |
|---|---|---|
| Midterm Exam | 0 | 0.00 |
| Quiz | 0 | 0.00 |
| Home work-project | 0 | 0.00 |
| Final Exam | 1 | 100.00 |
| Total | 1 | 100.00 |
| Contribution of Term (Year) Learning Activities to Success Grade | | 0.00 |

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|---|---|---|
| Contribution of Final Exam to Success Grade | 100.00 | |
| Total | 100.00 | |
| Measurement and Evaluation Techniques Used in the Course | | |

| 24 | ECTS / WORK LOAD TABLE |
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| 25 | **CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS** |
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| | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ÖK1 | 5 | 4 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 |
| ÖK2 | 5 | 4 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 |
| ÖK3 | 5 | 4 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 |
| ÖK4 | 5 | 4 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 |
| ÖK5 | 5 | 4 | 5 | 5 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 |

**LO: Learning Objectives    PQ: Program Qualifications**

| Contribution Level: | 1 very low | 2 low | 3 Medium | 4 High | 5 Very High |
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