| ſ | MOLECULAR TECHNI | QUES | IN HISTOLOGY LABORATORY | | | | | |
|------|--|---|---|--|--|--|--|--|
| 1 | Course Title: | MOLEC | ILAR TECHNIQUES IN HISTOLOGY LABORATORY | | | | | |
| 2 | Course Code: | VHE602 | 2 | | | | | |
| 3 | Type of Course: | Optional | | | | | | |
| 4 | Level of Course: | Third Cycle | | | | | | |
| 5 | Year of Study: | 1 | | | | | | |
| 6 | Semester: | 2 | | | | | | |
| 7 | ECTS Credits Allocated: | 3.00 | | | | | | |
| 8 | Theoretical (hour/week): | 2.00 | | | | | | |
| 9 | Practice (hour/week): | 0.00 | | | | | | |
| 10 | Laboratory (hour/week): | 0 | | | | | | |
| 11 | Prerequisites: | | | | | | | |
| 12 | Language: | Turkish | | | | | | |
| 13 | Mode of Delivery: | Face to f | face | | | | | |
| 14 | Course Coordinator: | Dr. Ögr. | Üyesi Tuncay İLHAN | | | | | |
| 15 | Course Lecturers: | | | | | | | |
| 16 | Contact information of the Course Coordinator: | Tel: 0224 2941266 E-mail: tilhan@uludag.edu.tr Bursa Uludağ Üniversitesi Veteriner Fakültesi A Blok Histoloji- Embriyoloji A.D. | | | | | | |
| 17 | Website: | | | | | | | |
| 18 | Objective of the Course: | Teaching the most used molecular techniques in the histology laboratory. | | | | | | |
| 19 | Contribution of the Course to Professional Development: | To learn the molecular techniques that can be used in scientific laboratory studies in the field of histology and to reach the competence to apply. | | | | | | |
| 20 | Learning Outcomes: | | | | | | | |
| | | 1 | To be able to make calculations for laboratory applications. | | | | | |
| | | 2 | To be able to apply the techniques of purification of macromolecules, gel electrophoresis and spectrophotometric analysis on their own. | | | | | |
| | | 3 | To gain the ability to use histological methods and molecular techniques in a laboratory. | | | | | |
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| 21 | Course Content: | | | | | | | |
| | | Co | ourse Content: | | | | | |
| Week | Theoretical | | Practice | | | | | |
| 1 | Safety in the molecular biology labor Presentation of laboratory and labor equipments. | ratory; atory | | | | | | |

| 2 | Micro adjus buffe | Micropipette use, Laboratory calculations; pH adjustments; Preparation of solutions and buffers to be used. | | | | | ł | | | | | | | | | | |
|-------------------------------------|--|--|---|---|--|---|-----------------------------|--|---|--|-------------------------------|------------------------------------|-----------------------------------|------------------------|-----------------------|------------------------------|----------------|
| 3 | Sepa macr | Separation and purification of macromolecules. | | | | | | Т | | | | | | | | | |
| 4 | Agar | garose gel electrophoresis. | | | | | | | | | | | | | | | |
| 5 | PCR | CR (Working principle, optimization) | | | | | | | | | | | | | | | |
| 6 | PCR | CR (Application areas, application). | | | | | | | | | | | | | | | |
| 7 | Mark | larking of proteins with flourescence. | | | | | | | | | | | | | | | |
| 8 | Obse by mi | Dbservation of fluorescently labeled proteins by microscope. | | | | | | | | | | | | | | | |
| 9 | Туре | Types of blotting (Western, Southern) | | | | | | | | | | | | | | | |
| 10 | West calcu | tern Ilatio | Blot ((n) | Collec | tion of | f tissue | prote | in, | | | | | | | | | |
| 11 | West | tern | Blot (| gel pre | eparat | ion, loa | ading) | | | | | | | | | | |
| 12 | West | tern | Blot (I | Blottin | g, Vie | wing) | | | | | | | | | | | |
| 13 | ELIS | A (G | enera | al prino | ciples, | , calcul | ations | s). | | | | | | | | | |
| 14 | ELIS. | A (A | pplica | ition o | f the r | nethod |). | | | | | | | | | | |
| 22 | Textb Mate | Fextbooks, References and/or Other Vaterials: | | | | | | Da an Wi At | Dale, von Schantz, From Genes to Genomes: Concepts and Applicaitons of DNA Technology, 2nd Edition, John Wiley & Sons, Ltd, USA, 2007 (ISBN: 9780470017340) At the banch,Barker K.,Cold Spring Harbor Laboratory | | | | | | | | |
| Activites | | | | | | Number | | | Duration (nour) | | | Load (hour) | | | | | |
| Theoretical R Midtorm Exam | | | | | | | <u>14</u> <u>2.0</u> | | | 2.00 | 28.00 | | | | | | |
| Practicals/Labs | | | | | (| 0.00 | | | | 0.00 | | | | | | | |
| Self stu | udy an | nd pr | epera | tion – | | | 0 | | | 4.00 | | | | 56.00 | | | |
| Homeworks | | | | | | (| 0 | | | 0.00 | 0.00 | | | 0.00 | | | |
| Project | Projects | | | | | | | 100.00 | | | 0.00 | | | 0.00 | | | |
| Field S | Studies | 6 | | | | | | | (| 0 | | | 0.00 | | | 0.00 | |
| Midters | डि छाँचे इ | 108 | 51111 (| | _ean | ing Act | Mies | 10 | (| 0 | | | 0.00 | | | 0.00 | |
| Others | i | | | | | | | | (| 0 | | | 0.00 | | | 0.00 | |
| Final E | xams | | | | | | | | 10 | 100.00 | | | 1.00 | | | 1.00 | |
| Total M | | | | | | | | | | | | | | | | 85.00 | |
| | Vork L | .oad | | | | | | | ┏┰┰┠ | ееуал | | | | | | TTHESH | |
| | Vork L vork lo | oad | o eva 30 hr | iuatioi | пес | nnque | 5 050 | u in ui | e i i sh | e evan ort ans | wer qu | win be d lestions | and m | ultiple | n-ende choice | question | ns, S. |
| | Vork L york lo Credit | oad | 30 hr | urse | | | | u in ui | e i i Shi | e evan ort ans | wer qu | uestions | and m | ultiple | n-ended choice | guestion Guestion 3.00 | 5. |
| Course ECTS (24 | Vork L vork lo Credit | .oad bad/ (cof th S / | 30 hr ne Co WOI | urse RKL | OAD | TAB | LE | | e i i Shi | e evan ort ans | swer qu | win be d lestions | and m | ultiple | n-endec choice | question question 3.00 | 5. |
| ECTS 0 | Vork L york lo Credit | .oad n an ad/ : of th S / | 30 hr ne Co WOI | urse RK L CON | | | LE N OF | F LE/ | ARN | e evan ort ans IING (LIFIC | | COMES | s TO F | PROC | choice | 3.00 | 5. |
| 24 | Vork L Vork lo Credit ECT | .oad 1. an ad/ : of th TS / | 30 hr ne Co WOI | urse RK L CON | OAD TRIE | TAB UTIO | LE N OF PQ6 | F LEA C | ARN QUA | UING (LIFIC | OUTC ATIO | OME NS | S TO F | PQ1 | GRAM | ME | PQ16 |
| ČOUISE ECTS (24 25 ÖK1 | Vork L Vork lo Credit ECT | .oad .ad/ ad/ of th S / PQ1 | 30 hr ne Co WOI PQ2 | urse RK L CON PQ3 | OAD TRIE PQ4 | TAB UTIO | LE N OF PQ6 | F LEA C PQ7 | ARN QUA PQ8 | ING CLIFIC | OUTC ATIO | COMES NS PQ11 | S TO F PQ12 | PROC PROC | BRAM | PQ15 0 | PQ16 0 |
| ÖK1 | Vork L Vork Io Credit ECT F 4 | oad ad/ of the of the | 30 hr ne Co WOI PQ2 4 | urse RKL CON PQ3 5 | OAD TRIE PQ4 3 | TAB BUTIO PQ5 5 4 | LE N OF PQ6 4 | F LE G PQ7 5 | ARN 2UA 9Q8 5 | ING CLIFIC | OUTC ATIO PQ1 0 4 | COMES NS PQ11 4 5 | S TO F PQ12 0 | PROC PROC 0 | PQ14 0 | PQ15 0 | PQ16 0 |
| ÖK1 ÖK3 | Vork L Vork Io Credit ECT P 4 5 5 | oad namad/ of the S PQ1 | 30 hr ne Co WOI 9Q2 4 5 4 | urse RK L CON 9Q3 5 4 3 | OAD TRIB PQ4 3 5 5 | TAB BUTIO PQ5 5 4 4 | LE N OF PQ6 4 4 | F LEA PQ7 5 5 4 | PQ8 5 | e evan ort ans IING (LIFIC PQ9 5 3 5 | PQ1 0 5 5 | COMES NS PQ11 4 5 4 | PQ12 0 0 | PROC PROC 0 0 | PQ14 0 0 | PQ15 0 0 | PQ16 0 0 |

| Contrib | 1 very low | 2 low | 3 Medium | 4 High | 5 Very High |
|---------|------------|-------|----------|--------|-------------|
| ution | | | | | |
| Level: | | | | | |