# AYDIN ADNAN MENDERES UNIVERSITY
# COURSE INFORMATION FORM

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Course Title | PCR Analyses and Medical Applications | | | | | | | | |
| Course Code | TIB531 | | Couse Level | Second Cycle (Master's Degree) | | | | | |
| ECTS Credit | 6 | Workload | 155 *(Hours)* | Theory | 2 | Practice | 2 | Laboratory | 0 |
| Objectives of the Course | | | | | | | | | |
| Course Content | | | | | | | | | |
| Work Placement | N/A | | | | | | | | |
| Planned Learning Activities and Teaching Methods | Explanation (Presentation) | | | | | | | | |
| Name of Lecturer(s) | Prof. Mehtap KILIÇ EREN | | | | | | | | |

| **Assessment Methods and Criteria** | | |
|---|---|---|
| Method | Quantity | Percentage (%) |
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 60 |

| **Recommended or Required Reading** | |
|---|---|
| 1 | 1. NCBI Pubmed ve güncel bilimsel yayınlar |
| 2 | 2. PCR Protocols (Vol. 226). Methods in Molecular Biology, John M.S. Bartlett and David Stirling (2003) |

| Week | Weekly Detailed Course Contents | |
|---|---|---|
| 1 | Theoretical | The structure of genes |
| 2 | Theoretical | The principles of Polymerase Chain Reaction |
| 3 | Theoretical | The principles and ways of primer design |
| 4 | Theoretical | The primer design applications using the web-based programmes |
| 5 | Theoretical | Direct and indirect mutation analysis techniques based on PCR (SSCP, HA, DHPLC, HRM, RFLP, ASA etc.) |
| 6 | Practice | PCR application |
| 7 | Practice | PCR optimisation |
| 8 | Intermediate Exam | Midterm Exam |
| 9 | Practice | Real Time PCR analysis |
| 10 | Practice | The medical application of PCR |
| 11 | Practice | DNA Footprinting |
| 12 | Practice | Paternity Exclusion Test |
| 13 | Practice | Diagnosis of genetic diseases |
| 14 | Practice | Cloning |
| 15 | Final Exam | Final Exam |

| **Workload Calculation** | | | | |
|---|---|---|---|---|
| Activity | Quantity | Preparation | Duration | Total Workload |
| Lecture - Theory | 13 | 3 | 2 | 65 |
| Lecture - Practice | 13 | 4 | 2 | 78 |
| Midterm Examination | 1 | 4 | 2 | 6 |
| Final Examination | 1 | 4 | 2 | 6 |
| | | | Total Workload (Hours) | 155 |
| | | | [Total Workload (Hours) / 25*] = **ECTS** | 6 |
| **25 hour workload is accepted as 1 ECTS* | | | | |

| **Learning Outcomes** | |
|---|---|
| 1 | |
| 2 | |
| 3 | |

| | |
|---|---|
| 4 | |
| 5 | |

| **Programme Outcomes** *(Medical Biology Master)* | |
|---|---|
| 1 | To acquire fundamental knowledge on medical biology field |
| 2 | To gain expertise on molecular biology techniques |
| 3 | To utilize molecular biology techniques |
| 4 | To be able to construct and conduct a research project |
| 5 | To be able to follow and interpret scientific advancements |

**Contribution of Learning Outcomes to Programme Outcomes** *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

| | L1 | L2 | L3 | L4 | L5 |
|---|---|---|---|---|---|
| P1 | 5 | 2 | 2 | 2 | 2 |
| P2 | 1 | 5 | 5 | 1 | 5 |
| P3 | 1 | 5 | 5 | 1 | 5 |
| P4 | 1 | 1 | 1 | 1 | 2 |
| P5 | 3 | 3 | 3 | 5 | 3 |