# AYDIN ADNAN MENDERES UNIVERSITY
# COURSE INFORMATION FORM

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|---|---|---|---|---|---|---|---|---|---|
| Course Title | Cell Culture Techniques in Food Applications | | | | | | | | |
| Course Code | GMP523 | | Couse Level | Second Cycle (Master's Degree) | | | | | |
| ECTS Credit | 8 | Workload | 202 *(Hours)* | Theory | 2 | Practice | 2 | Laboratory | 0 |
| Objectives of the Course | To give students information on basic and applied studies of cell cultures used in research studies. | | | | | | | | |
| Course Content | The basic principles of cell and tissue culture, designing the cell culture laboratory and the specific devices and materials, safety in cell culture laboratory, working principles in tissue culture laboratories, contamination, sterilization techniques, culture media and solutions, cell and tissue culture methods, primary cell culture, the culture of special cell line, teaching the application field of cell culture methods in molecular biology and recombinant DNA technology. | | | | | | | | |
| Work Placement | N/A | | | | | | | | |
| Planned Learning Activities and Teaching Methods | Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study | | | | | | | | |
| Name of Lecturer(s) | | | | | | | | | |

**Assessment Methods and Criteria**

| Method | Quantity | Percentage (%) |
|---|---|---|
| Midterm Examination | 1 | 20 |
| Final Examination | 1 | 40 |
| Practice | 7 | 20 |
| Quiz | 4 | 10 |
| Attending Lectures | 1 | 10 |

**Recommended or Required Reading**

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|---|---|
| 1 | Basic Cell Culture, Second Edition, J. M. Davis, Oxford University Press, 2002. |

| Week | Weekly Detailed Course Contents | |
|---|---|---|
| 1 | Theoretical | Introduction, cell culture types |
| 2 | Theoretical | Developing primary cell line |
| 3 | Theoretical | Immortal cell lines |
| 4 | Theoretical | Cell source and cell banks |
| 5 | Theoretical | The design of the cell culture laboratory conditions and the working environment |
| 6 | Theoretical | The selection of consumables used |
| 7 | Theoretical | The selection of media and other materials used |
| 8 | Theoretical | Culture techniques: Cell morphology |
| 9 | Theoretical | In vitro digestion methods |
| 10 | Theoretical | Midterm Exam |
| 11 | Theoretical | Methods to determine cell viability |
| 12 | Theoretical | Determination of cell mortality |
| 13 | Theoretical | Specialized cell cultures |
| 14 | Final Exam | Exam |

**Workload Calculation**

| Activity | Quantity | Preparation | Duration | Total Workload |
|---|---|---|---|---|
| Lecture - Theory | 14 | 3 | 2 | 70 |
| Lecture - Practice | 14 | 3 | 2 | 70 |
| Laboratory | 7 | 3 | 0 | 21 |
| Quiz | 4 | 0 | 2.5 | 10 |
| Midterm Examination | 1 | 14 | 1 | 15 |

| | | | | |
|---|---|---|---|---|
| Final Examination | 1 | 15 | 1 | 16 |
| | | | Total Workload (Hours) | 202 |
| | | | [Total Workload (Hours) / 25*] = **ECTS** | 8 |
| **25 hour workload is accepted as 1 ECTS* | | | | |

| **Learning Outcomes** | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

| **Programme Outcomes** *(Food Engineering Master)* | |
|---|---|
| 1 | To provide further training and research opportunities to food engineers to meet the needs of the food industry |
| 2 | To develop and deepen the current and advanced knowledge in the field of food engineering with original thought and / or research at the level of expertise, based on the qualifications of the master |
| 3 | To identify, define, formulate and solve problems in applications related to Food Engineering and gain the ability to select and apply appropriate analytical methods and modeling techniques |
| 4 | To gain the ability to evaluate the accuracy of the data obtained from food analysis |
| 5 | To educate students having research, entrepreneur qualifications |

**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 | 3 | | 1 | |
| P2 | 3 | 5 | 1 | | |
| P3 | 4 | 2 | 1 | | |
| P4 | 5 | 1 | 5 | | 1 |
| P5 | | 1 | 4 | | 1 |