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| **COURSE IDENTIFICATION FORM** | | | | | | | |
| **Course Code and Name:SM-5058 Migroalgal Biotechnology** | | | | **Department of :** | | | |
| |  | | --- | | **Semester** | | **Theoretic Hour** | **Practice Hour** | **Total Hour** | **Credits** | **ECTS** | **Education Language** | **Type: Compulsory Elective** |
| Fall | 3 | 0 | 3 | 3 | 6 | Turkish | Optional |
| **Prerequisite (s)** | |  | | | | | |
| **Instructor** | | Prof. Dr. Banu KUTLU | | | | **Mail :**  **Web :** | |
| **Course Assistant** | |  | | | | **Mail :**  **Web :** | |
| **Groups / Classes** | |  | | | |  | |
| **Course Aim** | | Microalgae culture is an important field in modern Biochemistry and Biotechnology. It has an important role as it provides 5 million dollars for the world economy every year. In Earth life, microalgae is used as a CO2/O2 convertor. .However, it is the primary biomass producer and the most valuable microorganisms in ecological group | | | | | |
| **Course Goals** | | Students will be taught the biochemical properties of microalgae related to microalgal culture and will be informed about microalgal biomass culture and microalgae systems designed for economical applications | | | | | |
| **Course Learning Outs and Proficiencie*s*** | | * Thestructure of microalgalcellswill be explainedandtheexpressionforphotosynthesis of microalgaewill be explained. * • Togainknowledgeaboutthebasicculturetechniques of microalgaeandtocomparethem. * • Tohaveknowledgeabouttheeffects of environmentalstressfactors on microalgalcellcompositionandfunction. * • Knowdifferentculturetechniquesdesignedtoincreasebiomassproduction of microalgaeanddiscusstheirimportance in aquaticproducts, anddiscusseconomicapplications of microalgae. | | | | | |
| **Course Basic and Auxiliary Contexts** | | Richmond, A. MicroalgalCulture: BiotechnologyandAppliedPhycology. Blackwell Publishing, 2006.  • Barsanti, L. &Gualtieri, P. Algae: Anatomy, Biochemistry, andBiotechnology. CRC Press, 2006 | | | | | |
| **Methods of Give a Lecture** | | Lecture, Question-answer, Discussion, Brainstorming, Individual study | | | | | |

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| **Assessment Criteria** | |  | **If Available, to Sign (x)** | **General Average Percentage (%) Rate** |
| **1. Quiz** | **X** | **50** |
| **2. Quiz** |  |  |
| **3. Quiz** |  |  |
| **4. Quiz** |  |  |
| **5. Quiz** |  |  |
| **Oral Examination** |  |  |
| **Practice Examination (Laboratory, Project etc.)** |  |  |
| **Final Examination** | **X** | **50** |
| **Semester Course Plan** | | | | |
| **Week** | **Subjects** | | | |
| **1** | Microalgae, Microalgal cells and Photosynthesis | | | |
| **2** | Basic Culture techniques | | | |
| **3** | Environmental stress physiolog | | | |
| **4** | Effect of environment on cell composition | | | |
| **5** | Biomass culture of microalgae | | | |
| **6** | Economic applications of microalgae | | | |
| **7** | Economic applications of microalgae | | | |
| **8** | Midterm | | | |
| **9** | Economic applications of microalgae | | | |
| **10** | Economic applications of microalgae | | | |
| **11** | Microalgae as a Platform for New Biotechnological Applications and Recombinant Proteins | | | |
| **12** | Using bioactive chemicals in the Heterotrophic Production of Aquaculture Marina Algae from Microalgae | | | |
| **13** | Student Presentations | | | |
| **14** | Final exam | | | |