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| **COURSE IDENTIFICATION FORM** |
| **Course Code and Name:** **SM-5022 Phytoplankton Ecology** | **Department of :** |
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| **Semester** |

 | **Theoretic Hour** | **Practice Hour** | **Total Hour** | **Credits** | **ECTS** | **Education Language** | **Type: Compulsory Elective** |
| Fall | 3 | 0 | 3 | 3 | 6 | Turkish | Optional |
| **Prerequisite (s)** | Post Graduate |
| **Instructor** | Prof. Dr. Banu KUTLU | **Mail :** **Web :** |
| **Course Assistant** |  | **Mail :****Web :** |
| **Groups / Classes** |  |  |
| **Course Aim** |  This course focuses on the fundamental principles of biological oceanography as they relate to different marine ecosystems, in such a way that can be usefully applied in quality assessment, quality management and rehabilitation of natural aquatic environments. Practical laboratory exercises are designed to reinforce to identification and quantification of phytoplankton and measurements of water quality parameters with new techniques |
| **Course Goals** | * These include field observations in the near shore environment. Through the assignment, the course aims to increase the capacity of the students to engage in scientific discussions and report on topics related to the aquatic habitats expose to human impacts. Phytoplankton ecology of the course, the basic principles of biological oceanography about the different marine ecosystems, the rehabilitation of the natural aquatic environment, quality management and quality assessment has focused on.
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| **Course Learning Outs and Proficiencie*s*** | * To study fundamental principles and concepts of marine ecology and apply these concepts to understand the relationships of organisms to their environment. To gain an appreciation for the complexity of human influence on ecosystems.
* To introduce students to the different ecology of aquatic ecosystem, To survey of the phytoplankton.
* To introduce students to field techniques common to aquatic ecosystems, water quality parameters.
* To gain experience in data analysis and presentation of results in standard scientific format.
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| **Course Basic and Auxiliary Contexts** | Lecture, question and answer, discussion, brain storming, individual work |
| **Methods of Give a Lecture** | The Ecology of Phytoplankton, C. S. Reynolds, 2006. |

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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** | Phytoplankton: Definitions and Terminology, Historical context, Diversification |
| **2** | Phytoplankton:General features, Construction and composition,. Introduction to phytoplankton |
| **3** | Entrainment and distribution in the Pelagic, motion in aquatic environments, Turbulence, Phytoplankton sinking and floating, Sinking and entrainment in natural turbulence, The spatial distribution of phytoplankton. |
| **4** | Photosynthesis and carbon acquisition in phytoplankton: Essential biochemistry of photosynthesis, Light-dependent environmental sensitivity of photosynthesis, Sensitivity of aquatic photosynthesis to carbon sources, capacity, achievement and fate of primary production |
| **5** | Nutrient uptake and assimilation in phytoplankton: Cell uptake and intracellular transport of nutrients, phosphorus: requirements, uptake, deployment in phytoplankton, nitrogen: requirements, sources, uptake and metabolism in phytoplankton |
| **6** | Nutrient uptake and assimilation in phytoplankton:The role of micronutrients, Major ions, Silicon: requirements, uptake, deployment in phytoplankton |
| **7** | Work up phytoplankton samples from field study for counting |
| **8** | Mid-Term exam |
| **9** | Growth and replication of phytoplankton |
| **10** | Mortality and loss processes in phytoplankton |
| **11** | Community assembly in the plankton: pattern, process and dynamics, Pattern of species composition and temporal change |
| **12** | Phytoplankton ecology and aquatic ecosystems: mechanisms and management |
| **13** | Student assignments |
| **14** | Final Exam |