# AYDIN ADNAN MENDERES UNIVERSITY
# COURSE INFORMATION FORM

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|---|---|---|---|---|---|---|---|---|---|
| Course Title | Plant Physiology | | | | | | | | |
| Course Code | BYL105 | | Couse Level | Short Cycle (Associate's Degree) | | | | | |
| ECTS Credit | 3 | Workload | 75 *(Hours)* | Theory | 2 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | Teaching basic concepts and events on plant metabolism | | | | | | | | |
| Course Content | Subdivisons of plant physiology. Chemical composition of plant cells, water metabolism in plants. Water, uptake, loss and transportation, mineral nutrition, dissolved substance transportation, photosynthesis and chemosynthesis, transportation of organic substances in plants, respiration and fermentation, lipid metabolism, assimilation of mineral nutrients and plant hormones | | | | | | | | |
| Work Placement | N/A | | | | | | | | |
| Planned Learning Activities and Teaching Methods | Explanation (Presentation) | | | | | | | | |
| Name of Lecturer(s) | | | | | | | | | |

| **Assessment Methods and Criteria** | | |
|---|---|---|
| Method | Quantity | Percentage (%) |
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 70 |

| **Recommended or Required Reading** | |
|---|---|
| 1 | . Taiz, L and Zeiger, E. 2007 Plant Physiology. Palme Press, Ankara. |
| 2 | Kacar, B., Katkat, V., Ozturk, S. 2002. Bitki Fizyolojisi. Nobel Yayınevi, Ankara |

| Week | Weekly Detailed Course Contents | |
|---|---|---|
| 1 | Theoretical | Introduction to Plant Physiology, Chemical Composition of Plant Cells |
| 2 | Theoretical | Structure and properties of water |
| 3 | Theoretical | Water uptake and transport in plants |
| 4 | Theoretical | Water loss events in plants; transpiration, glutation and exudation |
| 5 | Theoretical | Mineral nutrition in plants; soil, roots and microorganisms |
| 6 | Theoretical | Dissolved matter transport |
| 7 | Theoretical | Photosynthesis; Light reactions |
| 8 | Intermediate Exam | Mid term exam |
| 9 | Theoretical | Fotosentez; Karbondioksit fiksasyon reaksiyonları |
| 10 | Theoretical | Phloem transporation |
| 11 | Theoretical | Respiration (Glycolysis, Citric acid cycle, Electron Transport System and ATP synthesisi) |
| 12 | Theoretical | Oxidative Pentose Phosphate Metabolic Pathway, Photorspiration, Fermantation |
| 13 | Theoretical | Lipid metabolism |
| 14 | Theoretical | Assilimation of Mineral Nutrient |
| 15 | Theoretical | Plant Growth Regulators |
| 16 | Final Exam | FINAL EXAM |

| **Workload Calculation** | | | | |
|---|---|---|---|---|
| Activity | Quantity | Preparation | Duration | Total Workload |
| Lecture - Theory | 14 | 0 | 2 | 28 |
| Assignment | 14 | 0 | 2 | 28 |
| Individual Work | 9 | 0 | 1 | 9 |
| Midterm Examination | 1 | 4 | 1 | 5 |
| Final Examination | 1 | 4 | 1 | 5 |
| | | | Total Workload (Hours) | 75 |
| | | | [Total Workload (Hours) / 25*] = **ECTS** | 3 |
| **25 hour workload is accepted as 1 ECTS* | | | | |

| Learning Outcomes | |
|---|---|
| 1 | Have knowledge about the sub-branches of plant physiology and chemical composition of plants. Understands the importance of water for life by learning the structure and properties of water. Understands water absorption, transport and loss of plants. |
| 2 | Comprehend plant-mineral nutrient relationship and its requirements. Understands the basic relationships between soil, roots and microorganisms. Comprehends the transport of dissolved substance in plants at cell, tissue, organ level |
| 3 | Comprehends the phases of the light reactions of photosynthesis. Photosynthesis; Comprehends the mechanisms of carbon dioxide fixation reactions and carbon dioxide deposition. Understands and interprets how the mechanism of photosynthesis is affected by environmental |
| 4 | Handling organic substance transport and transportation models |
| 5 | Understand the basic processes of respiration and the factors affecting these processes. Oxidative Pentose Phosphate Metabolic Path, fermentation events can grasp. Learn about lipid metabolism. |
| 6 | Understand the nitrogen cycle and biological nitrogen fixation, mineral nutrient extraction and plant growth regulators issues. |