



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

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|--|---|---|---------------------|--|---|--------------------------------|---|------------|---|
| Course Title | | Metabolisms of Water and Minerals | | | | | | | |
| Course Code | | VBY623 | | Couse Level | | Third Cycle (Doctorate Degree) | | | |
| ECTS Credit | 2 | Workload | 50 (<i>Hours</i>) | Theory | 1 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | | To teach the structure of water, features, biological functions of water, macromelcules, trace elements, cofactors, tocsic elements, relationship between mineral substances. | | | | | | | |
| Course Content | | Structure of water, features, biological functions of water, macromelcules, trace elements, cofactors, tocsic elements, relationship between mineral substances | | | | | | | |
| Work Placement | | N/A | | | | | | | |
| Planned Learning Activities and Teaching Methods | | | | Explanation (Presentation), Discussion, Individual Study | | | | | |
| Name of Lecturer(s) | | | | | | | | | |

Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---------------------|----------|----------------|
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 60 |

Recommended or Required Reading

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| 1 | Lippincott's Illustrated Reviews Biyokimya Seri Editörleri Richard A HARVEY, Pamela C. CHAMPE Biyokimya Çeviri Editörü Doç.Dr. Engin ULUKAYA, Nobel Tıp Kitabevleri 2007 |
| 2 | Lehninger Biyokimyanın İlkeleri. David L. Nelson Michael M. COX. Çeviri Editörü Prof.Dr. Nedret KILIÇ, Palme Yayıncılık |
| 3 | Harper Biyokimya Robert K. Murray, Daryl K. Granner, Peter A. Mayes, Victor W. Rodwell. Çeviri Editörleri: Nurten DİKMEN, Tuncay ÖZGÜNEN. Nobel Tıp Kitabevleri |

| Week | Weekly Detailed Course Contents | |
|------|---------------------------------|---|
| 1 | Theoretical | Structure of water |
| 2 | Theoretical | Weak interactions in aqueous systems |
| 3 | Theoretical | Ionization of water, weak acids and bases |
| 4 | Theoretical | Biologic tampon systems |
| 5 | Theoretical | Extracellular and intracellular |
| 6 | Theoretical | Osmosis, dialysis, osmotic pressure |
| 7 | Theoretical | Dilutions |
| 8 | Intermediate Exam | Midterm exam |
| 9 | Theoretical | Calcium, phosphorus, and magnesium |
| 10 | Theoretical | Sodium, potassium, chlorine |
| 11 | Theoretical | Zinc and copper |
| 12 | Theoretical | Manganese, molybdenum, selenium, cobalt, fluorine |
| 13 | Theoretical | Iron, Chromium, sulphur, Iodine |
| 14 | Theoretical | Hormones that regulate Mineral metabolism |
| 15 | Theoretical | Discussion |
| 16 | Final Exam | Final exam |

Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|---------------------------------------|----------|-------------|----------|----------------|
| Lecture - Theory | 15 | 0 | 1 | 15 |
| Reading | 10 | 1 | 0 | 10 |
| Midterm Examination | 1 | 9 | 1 | 10 |
| Final Examination | 1 | 14 | 1 | 15 |
| Total Workload (Hours) | | | | 50 |
| [Total Workload (Hours) / 25*] = ECTS | | | | 2 |

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

| | |
|---|--|
| 1 | To learn the structure of water and biological functions |
| 2 | To learn functions of mineral substances in an organism |
| 3 | To learn the disease of trace element deficiency |
| 4 | To have information about osmotic pressure |
| 5 | To have information about hormones regulating mineral metabolism |

Programme Outcomes (Biochemistry (Veterinary Medicine) Doctorate)

| | |
|----|---|
| 1 | Has a deep and broad knowledge about the field and the interdisciplinary area related with the field through the achievements gained in undergraduate and professional levels. |
| 2 | Has the knowledge to create original ideas, analyze them and develop definition/product/diagnosis methods by using the knowledge gained in undergraduate and/or professional experience, when needed. |
| 3 | Is knowledgeable about theories and practices in methodological and scientific research methods to run an independent research. |
| 4 | Excels in the laboratory, clinical and similar fields by using the theoretical and practical information gained in former education, and has the ability to create solutions in related fields. |
| 5 | Designs and develops scientific methodology for the advanced level/newly defined/emerged problems about the field. |
| 6 | Excels in the known scientific methods in the field for the advanced level/ newly defined/emerged problems. |
| 7 | Designs unique researches and implements independently. |
| 8 | Analyzes, synthesizes and evaluates the new ideas in related fields by using critical thinking. |
| 9 | Plans, creates teams and carries out the interdisciplinary research projects in order to create solutions to the known/newly defined problems. |
| 10 | Joins to congresses, panels, symposiums, workshops, seminars, article discussions and problem solving sessions in different disciplines, and exchanges information with the other professionals to contribute to the solutions. |
| 11 | Broadens the borders of scientific information by publishing scientific articles in national and/or international peer-reviewed journals. |
| 12 | Creates new ideas and methods to contribute to the technological, social and cultural progress, or to help the development of information society by using the theoretical, practical, independent research, abilities responsibly. |
| 13 | Designs and implements social projects with the awareness of creating an information society. |
| 14 | Compiles and interprets any type of data (field observation, scientific knowledge etc.) in accordance with the aims. |
| 15 | Develops and uses strategies about related topics with the field. |
| 16 | Implements and defends institutional and practical information and abilities in accordance with the needs of the country and the world, and changes when necessary. |
| 17 | Follows up and uses all the updates about the field (scientific information, legislations etc.), and has the qualification to change them. |
| 18 | Adopts lifelong learning as a principle and acknowledges that the information gained through research is the most valuable gain. |

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 | 5 | 5 | 5 | 5 |
| P3 | 5 | 5 | 5 | 5 | 5 |
| P8 | 5 | 5 | 5 | 5 | 5 |
| P11 | 5 | 5 | 5 | 5 | 5 |
| P12 | 5 | | 5 | | 5 |
| P13 | | 5 | | | |
| P15 | 5 | 5 | 5 | 5 | 5 |
| P18 | 5 | | 5 | 5 | 5 |

