



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

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|--|---|---|----------------------|----------------------------|---|--------------------------------|---|------------|---|
| Course Title | | Lipids and Metabolism of Lipids | | | | | | | |
| Course Code | | VBY502 | | Course Level | | Second Cycle (Master's Degree) | | | |
| ECTS Credit | 5 | Workload | 125 (<i>Hours</i>) | Theory | 2 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | | Provide basic information about lipids and lipids's metabolism | | | | | | | |
| Course Content | | Biological importance of lipids, fatty acids and phospholipids, triglycerides, waxes, sphingolipids, terpenes, steroids, lipoproteins, utilization of fatty acids for energy production, synthesis of lipids, ketosis, fatty liver, alcohol metabolism. | | | | | | | |
| Work Placement | | N/A | | | | | | | |
| Planned Learning Activities and Teaching Methods | | | | Explanation (Presentation) | | | | | |
| Name of Lecturer(s) | | Prof. Ayşegül BİLDİK, Prof. Funda KIRAL | | | | | | | |

Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---------------------|----------|----------------|
| Midterm Examination | 1 | 20 |
| Final Examination | 1 | 60 |
| Quiz | 2 | 10 |
| Assignment | 2 | 10 |

Recommended or Required Reading

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| 1 | 1-Kaya, N. (1993) Biyokimya, Atatürk Üniversitesi, Erzurum. |
| 2 | 2- Murray, R.K. (1993) Harper's Biochemistry, Appleton and Lange, Norwalk |
| 3 | 3- Onat, T., Emerk, K. (1997) Biyokimya, Saray, İzmir. |
| 4 | 4- Sittman, D. (2000) Biyokimya, çev. Güner G., Nobel, İstanbul. |
| 5 | 5- Nihat BAYŞU, Nalan Bayşu SÖZBİLİR.(2008) Biyokimya Güneş Tıp kitabevleri, 2008 |

| Week | Weekly Detailed Course Contents | |
|------|---------------------------------|---|
| 1 | Theoretical | Overview of lipids (definition, significance, structure and classification) |
| 2 | Theoretical | Fatty acids: structure, classification, types, importance, essential fatty acids, cyclic fatty acids, fatty acids, physical and chemical properties |
| 3 | Theoretical | Lipids with Glycerin: Glycerin, neutral lipids, types of phosphoglycerids, structure, the importance of physical and chemical properties |
| 4 | Theoretical | Without glycerol lipids: Sphingolipids, aliphatic alcohols and waxes, terpenes structure types, the importance of physical and chemical properties. |
| 5 | Theoretical | Steroids (Sterine and bile acids) the importance of the organism, structure, types |
| 6 | Theoretical | Related compounds from other classes of lipids: Lipoproteins, proteolipids, phospholipids, lipopolysaccharides.. |
| 7 | Theoretical | Fatty acid biosynthesis |
| 8 | Intermediate Exam | Midterm exam |
| 9 | Theoretical | Essential fatty acids |
| 10 | Theoretical | Metabolism of fatty acids |
| 11 | Theoretical | The transformation of fats and carbohydrates together |
| 12 | Theoretical | Formation and oxidation of ketone bodies in the liver |
| 13 | Theoretical | Steatohepatitis |
| 14 | Theoretical | Metabolism of ethanol |
| 15 | Theoretical | Cholesterol biosynthesis |
| 16 | Final Exam | Final exam |

Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|------------------|----------|-------------|----------|----------------|
| Lecture - Theory | 14 | 0 | 2 | 28 |
| Assignment | 2 | 10 | 1 | 22 |



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|---|---|----|-----|-----|
| Reading | 5 | 5 | 1 | 30 |
| Quiz | 2 | 5 | 0.5 | 11 |
| Midterm Examination | 1 | 12 | 1 | 13 |
| Final Examination | 1 | 20 | 1 | 21 |
| Total Workload (Hours) | | | | 125 |
| [Total Workload (Hours) / 25*] = ECTS | | | | 5 |
| *25 hour workload is accepted as 1 ECTS | | | | |

Learning Outcomes

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|---|---|
| 1 | To be able to respond to these questions: What is lipid? What is the importance of organism? Respond to questions. |
| 2 | To be able to comprehend the structure and classification of lipids. |
| 3 | To be able to explain fatty acids and phospholipids, triglycerides, waxes, sphingolipids, terpenes, steroids, lipoproteins. |
| 4 | To be able to comprehend how to utilize fatty acids for energy production. |
| 5 | To be able to comprehend how to synthesize lipids. |
| 6 | To be able to comprehend ketosis, fatty liver, alcohol metabolism. |

Programme Outcomes (Biochemistry (Veterinary Medicine) Master's Without Thesis)

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|----|--|
| 1 | To be able to tell and describe the interdisciplinary interaction with the associated fields. |
| 2 | To be able to express original ideas using his/her higher education knowledge theoretically and practically information and to be able to create original definitions, products, methods improving and questioning these ideas. |
| 3 | To be able to manage a free research according to scientific and methodological methods and be able to hypothetically and practically about his/her own field. |
| 4 | To be able to compose and interpret the information from different disciplines, and create solution suggestions and scientific information which can contribute to the solution process. |
| 5 | To be able to involve in professional organizations and institutions related with the educational background. |
| 6 | To be able to take responsibility for individual and group work, and do the assignments in line with the skills. |
| 7 | To be able to communicate with the professionals out of the field when it is necessary, and contribute to the solution as a team member. |
| 8 | To be able to tell about the production and publishing methods of scientific information. |
| 9 | To be able to design the source and the type of information that is needed related with the field and chooses the activities that s/he wants to participate, by using his/her critical thinking abilities that is developed in the education. |
| 10 | To be able to use technological devices both for professional and social purposes. |
| 11 | To be able to compose and interpret any kind of data related with the field (field observations, produced scientific information etc.) and analyzes and interprets the results according to the aims of the research. |
| 12 | To be able to define the environmental health rules and apply them for prevention. |
| 13 | To be able to apply the knowledge gained in professional level with the awareness of the needs of the region and the country, and develop a defense capability. |
| 14 | To be able to conceptualize the phenomena and the events related with the field; study scientific methods and techniques, interpret results; analyze and hypothesize methods in accordance with the results and design solution or treatment alternatives addressing the problems. |
| 15 | To be able to interpret the updates of information in the field by using all kinds of sources (scientific information, legislations etc.), and use when needed. |

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

| | L1 | L2 | L3 | L4 | L5 | L6 |
|-----|----|----|----|----|----|----|
| P1 | | 5 | 5 | 5 | 5 | 5 |
| P2 | | 5 | 5 | 5 | 5 | 5 |
| P3 | | 5 | 5 | 5 | 5 | 5 |
| P7 | 4 | 4 | 4 | 4 | 4 | 4 |
| P10 | 3 | 3 | 3 | 3 | 3 | 3 |
| P12 | 2 | 2 | 2 | 2 | 2 | 2 |

