**YILDIZ TECHNICAL UNIVERSITY**

**FACULTY OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**DEPARTMENT OF BIOMEDICAL ENGINEERING**

**BME 2901 – BIOCHEMISTRY SYLLABUS**

**2024 – FALL**

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| **Course Schedule** | Class: Thursday 9.00-12.00  Lab: 3 groups  Wednesday 09.00-11.00 / 11.00-13.00 / 13.00-15.00 | | | |
| **Classroom** | DB-011 / Faculty of Arts and Design C-2003 | | | |
| **Instructor’s Name**  **Office**  **Phone**  **E-mail**  **Office Hours** | Assist. Prof. Görke Gürel Peközer  E-007  (0212) 383 63 07  gpekozer@yildiz.edu.tr  Monday 09.00-11.00 - Tuesday 09.00-11.00 | | | |
| **Assistants** | R. A. Yeliz Güldorum, Office: E-013, e-mail: [yelize@yildiz.edu.tr](mailto:yelize@yildiz.edu.tr)  R. A. Burcu Doymuş, Office: E-013, e-mail: [bdoymus@yildiz.edu.tr](mailto:bdoymus@yildiz.edu.tr)  R. A. Güleycan Dedecengiz, Office: E-017, e-mail: [guleycan@yildiz.edu.tr](mailto:guleycan@yildiz.edu.tr)  R. A. Gencay Yasav, Office: E-011, e-mail: [gencay.yasav@yildiz.edu.tr](mailto:gencay.yasav@yildiz.edu.tr) | | | |
| **Textbooks:** | Lehninger Principles of Biochemistry, 7th Edition, David L. Nelson and Michael M. Cox, W.H.Freeman & Co Ltd. | | | |
| **Supplementary Materials:** | Course notes in pdf format will be uploaded on AVESIS website prior to upcoming class: <http://avesis.yildiz.edu.tr/gpekozer/>  Students are responsible of material presented on the course notes. | | | |
| **Course Objectives** | This course explores the basic principles of biochemistry, biochemical composition of the body and major biochemical reactions that occur in the body. | | | |
| **Course and Lab Outline** | Week 1 |  | Course Overview | - |
| Week 2 |  | Introduction to Biochemistry | Laboratory Rules and Safety |
| Week 3 |  | Aminoacids, Peptides and Proteins | Basic Biochemical and Microscopical Techniques  Lead Asst: Yeliz Güldorum  Report Responsible: Yeliz Güldorum |
| Week 4 |  | 3D Structure of Proteins | - |
| Week 5 |  | Protein Functions and Enzymes | Spectrophotometry  Lead Asst: Burcu Doymuş  Report Responsible: Burcu Doymuş |
| Week 6 |  | Protein Isolation and Purification | Protein Quantification  Lead Asst: Burcu Doymuş  Report Responsible: Güleycan Dedecengiz |
| Week 7 |  | Nucleic Acids - I | Enzyme Kinetics  Lead Asst: Yeliz Güldorum  Report Responsible: Yeliz Güldorum |
| Week 8 |  | Midterm 1 | - |
| Week 9 |  | Nucleic Acids - II | Paper Chromatography  Lead Asst: Yeliz Güldorum  Report Responsible: Güleycan Dedecengiz |
| Week 10 |  | Carbohydrates | DNA Isolation and Gel Electrophoresis  Lead Asst: Burcu Doymuş  Report Responsible: Burcu Doymuş |
| Week 11 |  | Lipids | Carbohydrate Detection  Lead Asst: Yeliz Güldorum  Report Responsible: Gencay Yasav |
| Week 12 |  | Biological Membranes and Transport | Lipid Detection  Lead Asst: Burcu Doymuş  Report Responsible: Gencay Yasav |
| Week 13 |  | Metabolism - I |  |
| Week 14 |  | Metabolism - II |  |
| Week 15 |  | Course Summary |  |
| **Grading** | Midterm:  Final:  Laboratory: | %30  %40  %30 | | |
| **Attendance** | Students are required to attend 70% of the classes according to Yıldız Technical University regulations. Students should attend all the lab courses. Make-up of the lab sessions will be organized for the absence only with a valid reason. | | | |