**YILDIZ TECHNICAL UNIVERSITY**

**FACULTY OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**DEPARTMENT OF BIOMEDICAL ENGINEERING**

**BME 1532 – CELL BIOLOGY SYLLABUS**

**2024 – SPRING**

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| **Course Schedule** | Thursday 13.00-16.00 | |
| **Classroom** | D-B11 | |
| **Instructor’s Name**  **Office**  **Phone**  **E-mail**  **Office Hours** | Assist. Prof. Görke Gürel Peközer  E-007  (0212) 383 63 07  gpekozer@yildiz.edu.tr  Tuesday 10.00-12.00 – Wednesday 13.00-15.00 | |
| **Textbooks:** | Essential Cell Biology, Bruce Alberts, Karen Hopkin, Alexander Johnson, David Morgan, Martin Raff, Keith Roberts, Peter Walter, 5th Edition  Molecular Biology of the Cell, Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter. Garland Science, 6th Edition. | |
| **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 course notes. | |
| **Course Objectives** | In this course, students will explore cells, organelles their functions and microscopical techniques, nucleotide and DNA structure, DNA replication and DNA repair mechanisms, transcription and translation mechanisms, regulation of gene expression in prokaryotes and eukaryotes, the structure and nature of biological membranes, membrane lipids and proteins and molecular trafficking across those membranes, components of cytoskeleton and extracellular matrix and their structures and functions, cell signaling, receptors and molecular crosstalk between pathways, cell cycle and the checkpoints for the regulation, mitosis and cytokinesis, meiosis, sexual reproduction and a fundamentals of genetics, stem cells and cancer.  Students will also learn how to apply the knowledge they gained on cell biology to understanding and curing diseases. | |
| **Course Outline** | Week 1  Week 2  Week 3  Week 4  Week 5  Week 6  Week 7  Week 8  Week 9  Week 10  Week 11  Week 12  Week 13  Week 14 | Course Overview  Fundamentals of Life  Cellular Organelles and Microscopical Techniques  DNA, Chromosomes, DNA Replication and Repair  Transcription and Translation  Gene Expression  No Class  No Class (Ramadan Holiday)  Midterm  Cytoskeleton and Extracellular Matrix  Cell Signaling  Cell Cycle  Sexual Reproduction and Genetics  Stem Cells and Cancer |
| **Grading** | Midterm:  Final: | %60  %40 |
| **Attendance** | Students are required to attend 70% of the classes according to Yıldız Technical University regulations. | |

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