**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 PeközerE-007(0212) 383 63 07gpekozer@yildiz.edu.trTuesday 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 EditionMolecular 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 1Week 2Week 3Week 4Week 5Week 6Week 7Week 8Week 9Week 10Week 11Week 12Week 13Week 14 | Course OverviewFundamentals of LifeCellular Organelles and Microscopical TechniquesDNA, Chromosomes, DNA Replication and Repair Transcription and TranslationGene ExpressionNo ClassNo Class (Ramadan Holiday)Midterm Cytoskeleton and Extracellular MatrixCell SignalingCell CycleSexual Reproduction and GeneticsStem 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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