

**Name of the module: c 1st year Medicine**

**Number of module: 4718-1022**

**BGU Credits:** 2 points

**Academic year:** 1st year Medicine

**Semester:** first semester

**Hours of instruction:** 2 hours per week  
frontal lecture

**Location of instruction:** Daily lectures will take place in the Deichmann Building for Health Professions. Specific classroom numbers are indicated in the schedule.

**Language of instruction:** Lectures will be given in Hebrew.

**Cycle:** B.Med.Sc

**Position:** Obligatory module intended for 1st year medical students, as part of their preclinical teaching.

**Field of Education:** Biology

**Responsible department:**  
Microbiology, Immunology and Genetics

**General prerequisites:** None.

**Grading scale:** Successful passing of the multiple choice questions exam with a score of 65 or higher.

**Course Description:** The course will include introductory lectures on cell structure and the organelles within the cells. In this course we will examine different areas including: macromolecules such as water, carbohydrates, fats and proteins; the cell membrane-structure and function; the cell skeleton; cell nucleus, DNA, RNA, cell division and the endoplasmic reticulum.

**Aims of the module:** The goal of this course is to provide basic knowledge and understanding of the structure and function of major biomolecules, cellular organelles and cell life cycle. This course is an introduction to the advanced courses in the fields of Biochemistry, Genetics and Physiology.

**Objectives of the module:** At the end of the course, the student will be able:

1. Describe concepts related to the structure and function of the cell.
2. Define basic processes which will be studied at a more complex level in the advanced courses such as Neuroscience, Immunology and Microbiology
3. Connect the basic biochemical concepts learned in this course with those of the more advanced courses in the fields of systems biology.

**Learning outcomes of the module:** On successful completion of the course, the student should be able to:

1. Identify structure and function of cellular organelles
2. Have a clear understanding of basic cellular lifecycle
3. Make conceptual associations between various fields of molecular biology

**Attendance regulation:** Attendance to the oral lectures is not obligatory.

**Teaching arrangement and method of instruction:** Instruction in the module is based on frontal oral lectures.

**Coordinator:** Prof. Yael Segev

**Contact details:**

**Office phone:** 08-6479537

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**Office hours:** By appointment

**Lecturers:** Prof. Yael Segev, Prof.

Yaakov Gopas and Dr. Nurith Hadad

**Module evaluation:** at the end of the semester the students will evaluate the module, in order to draw conclusions, and for the university's internal needs

**Confirmation:**

**Last update:** 09/15

**Assessment:**

Students will be assessed in the module only by passing an exam with a score of 65 or higher (100% of grade).

**Time required for individual work:** in addition to attendance in class, the students are expected to do their assignment and individual work: reading the relevant text book. Due to the method of the module – students are required to study and review the lectures at home (30 minutes per an hour lecture).

**Module Content\ schedule and outlines:**

1. Introduction – General concepts in biochemistry: water, lipids, carbohydrates, proteins, enzymes, eukaryotic and prokaryotic cells.
2. Structure and function of the cell membrane: diffusion, osmosis, permeability, endo- and exocytosis.
3. Cytoskeleton: Macro- and micro and intermediate filaments.
4. The nucleus: nucleic acids, chromosomes, mitosis and meiosis, genetic information, DNA replication, RNA transcription and proteins translation.
5. Endoplasmic reticulum and Golgi's apparatus.
6. Production of energy: the mitochondria

**Required reading:** The Cell: a molecular approach. Geoffrey M. Cooper, Robert E.

**Additional literature:** Every fundamental university cell biology textbook

**\* All learning material will be available to the students on the module's website (high-learn)/ library/ electronic documents available to BGU students.**

