



The Goodman  
Faculty of Life Sciences  
Bar-Ilan University

**Last updated:**

## **Introduction to Mammalian Physiology 80206**

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**Academic year: 2021-2022 Semester: A Hours/credits: 3 hours / 1.5 credits**

**Mandatory / elective (mark the relevant)**

**Prerequisites:** Basic courses in physics and mathematics, as given to first-year, undergraduate students.

**Year in program & how often given, if relevant 2<sup>nd</sup> year undergraduate, given every year**

**Course Overview – Short abstract:** To understand in depth the pathways of signal transduction throughout the mammalian nervous system, at the molecular and cellular levels. the anatomy of skeletal muscles and their mode of action, and the human senses – anatomy and mode of action.

**Assessment: Coursework and Grade structure** The final grade will be comprised of a midterm exam (quiz) and a final exam. Both exams will be multiple choice exams.

The maximal points one can accumulate in the final exam is 100.

The maximal points one can accumulate in the midterm exam is 7 points, which will be considered as a bonus.

The maximal grade that one can receive is 100.

Bonus points will only be considered if the student was present in at least 80% of the exercise lessons.

## Week-by-Week content, assignments and reading

Lesson #	Subject	Readings in the textbook
1	Introduction to membrane physiology	Chapter* 4
2	The membrane resting potential	Chapter 6
3	Ion channels	Chapter 5
4	Voltage-dependent ion channels and the action potential	Chapter 7
5	Synaptic transmission	Chapter 12
6	Ligand-gated ion channels	Chapter 10
7	The mechanism of skeletal muscle contraction	Chapter 34
8	The sense of touch	Chapter 22
9	Control of movements	Chapter 35
10	The chemical senses	Chapter 32
11	Sense of sound	Chapter 30
12	The visual system	Chapter 26
13	The autonomic nervous system	Chapter 47

### Required text:

Principles of Neural Science, 5th Edition, Eric R. Kandel, James H. Schwartz, Thomas M. Jessell, Steven A. Siegelbaum & A. J. Hudspeth.