

### Course plan

<b>Year:</b> 2024-2025	<b>Semester:</b> <input checked="" type="checkbox"/> First <input type="checkbox"/> Second, <input type="checkbox"/> Summer	<b>Number of students:</b>
<b>Major:</b> Medical doctorate	<input checked="" type="checkbox"/> Basic sciences, <input type="checkbox"/> Physiopathology	<b>Department:</b> Physiology
<b>Course Title:</b> Neurophysiology	... Theoretical, ... Practical	<b>Credit:</b> 1.41 <b>Code N.:</b> 1294029
<b>Prerequisite:</b> Cell physiology	<b>Day &amp; Time:</b> S <input type="checkbox"/> day, 10-12 A.M.	<b>Place:</b> Shahid Soleimani Building
<b>Instructor:</b> Prof. HojjatAllah Alaei & Prof. Parham Reisi	<b>Office address:</b> School of Medicine, Department of physiology	<b>Tel:</b> 031-3792 9007-9033
<b>Email:</b> <a href="mailto:alaei@med.mui.ac.ir">alaei@med.mui.ac.ir</a> , <a href="mailto:p_reisi@med.mui.ac.ir">p_reisi@med.mui.ac.ir</a>	<b>Response Hours and Days:</b>	<b>Student representative name and mobile number:</b>

**Main objective:** Introduction to neurophysiology and familiarity with somatic and special sensory systems, Motor system and higher brain functions

**Specific objects:**

1. Understanding the functional levels of the nervous system, synapses, and synaptic transmission (knowledge domain).
2. Familiarity with the function of sensory receptors and production of neuronal signals, and the basis of information processing (knowledge domain).
3. Familiarity with the somatic sensations (stimulation, transmission, interpretation and perception) at different levels of the nervous system (knowledge domain).
4. Familiarity with the special sensations, including vision, hearing, taste and smell (stimulation, transmission, interpretation and perception) (knowledge domain).
5. Familiarity with the disorders that has a physiological basis (knowledge domain).
6. Familiarity with the different functional levels of motor activity (knowledge domain).
7. Understanding the basics of voluntary and involuntary muscle control (knowledge domain).
8. Understanding the mechanisms of sensory perception and the generation of motor responses (knowledge domain).
9. Familiarity with transcendental actions of the brain (knowledge domain).

**References (Text books):**

- 1- Guyton and Hall Textbook of Medical Physiology, (Latest version)
- 2- Berne & Levy Physiology (Latest version)
- 3- The slides and contents in the class

**Student evaluation and the value related to each evaluation:**

(The assessment tools that will be used to test student ability to understand the course material and gain the skills and competencies stated in learning outcomes)

ASSESSMENT TOOLS	From
<b>Midterm Exam</b>	8
<b>Final Exam (Written exam)</b>	12
<b>TOTAL MARKS</b>	<b>20</b>

**Students' responsibilities:**

- 1- Study the topics before and after the class
- 2- Observe the class order and rules
- 3- Attend all classes

**Discipline and educational rules:**

- 1- For each unplanned absence, 0.5 points will be deducted from 20, and in case of absence exceeding the permissible limit, the score will be zero.
- 2- The maximum permission time to participate in the class is 5 min after the start.
- 3- Mobile phone use is prohibited during class.

**Other important notes for students:**

- 1- Studying the rules and rights of the professor and the student

**Mid exam date:****Final exam date:**

Row	date	Time	Topic	Professor	Theoretical or practical	References	Chapter	Pages
1	Sep 8	10-12	Organization of the Nervous System, Basic Functions of Synapses, and Neurotransmitters	Prof. Reisi	In-person	Textbook of Medical Physiology (Guyton and Hall)	46	567-585
2	Sep 15	10-12	Sensory Receptors, Neuronal Circuits for Processing Information	Prof. Reisi	In-person	Textbook of Medical Physiology (Guyton and Hall)	47	586-598
3	Sep 22	10-12	Somatic Sensations: I. General Organization, the Tactile and Position Senses	Prof. Reisi	In-person	Textbook of Medical Physiology (Guyton and Hall)	48	599-611
4	Sep 29	10-12	Somatic Sensations: II. Pain, Headache, and Thermal Sensations The Eye: II. Receptor and Neural Function of the Retina	Prof. Reisi	In-person	Textbook of Medical Physiology (Guyton and Hall)	49 & 51	612-623 637-640
5	Oct 6	10-12	The Eye: II. Receptor and Neural Function of the Retina The Sense of Hearing	Prof. Reisi	In-person	Textbook of Medical Physiology (Guyton and Hall)	51 & 53	640-651 663-673
<b>Mid-Term Exam</b>								
6	Oct 13	10-12	Motor Functions of the Spinal Cord; the Cord Reflexes	Prof. Alaei	In-person	Textbook of Medical Physiology (Guyton and Hall)	55	683-695
7	Oct 20	10-12	Cortical Control of Motor Function	Prof. Alaei	In-person	Textbook of Medical Physiology	56	696-700

						(Guyton and Hall)		
<b>8</b>	Oct 27	10-12	Brain Stem Control of Motor Function	Prof. Alaei	In-person	Textbook of Medical Physiology (Guyton and Hall)	56	700-709
<b>9</b>	Nov 3	10-12	Contributions of the Cerebellum and Basal Ganglia to Overall Motor Control	Prof. Alaei	In-person	Textbook of Medical Physiology (Guyton and Hall)	57	710-726
<b>10</b>	Nov 10	10-12	Cerebral Cortex, Intellectual Functions of the Brain, Learning, and Memory Behavioral and Motivational Mechanisms of the Brain—The Limbic System and the Hypothalamus	Prof. Alaei	In-person	Textbook of Medical Physiology (Guyton and Hall)	58 & 59	727-752
<b>11</b>	Nov 17	10-12	States of Brain Activity—Sleep, Brain Waves, Epilepsy, Psychoses, and Dementia	Prof. Alaei	In-person	Textbook of Medical Physiology (Guyton and Hall)	60	753-762
<b>12</b>	Nov 24	10-12	The Autonomic Nervous System and the Adrenal Medulla	Prof. Alaei	In-person	Textbook of Medical Physiology (Guyton and Hall)	61	763-775