

Course plan

Year: 2025-2026	Semester: <input type="checkbox"/> First <input checked="" type="checkbox"/> Second	Number of students:
Major: Doctor of Dentistry	<input checked="" type="checkbox"/> Basic sciences <input type="checkbox"/> Physiopathology	Department: Physiology
Course Title: Physiology 1-A Dentistry	<input checked="" type="checkbox"/> Theoretical <input type="checkbox"/> Practical	Course N. & Credit: 129417-99, 1
Prerequisite: Biochemistry and Anatomy	Day & Time: Monday, 10-12 A.M.	Place: School of Dentistry
Instructors: Prof. Parham Reisi and Dr. Maedeh Ghasemi	Office address: School of Medicine, Department of physiology	Tel: 031-3792 9033, 3792 9188
Email: p_reisi@med.mui.ac.ir ghasemi.m@med.mui.ac.ir	Response Hours and Days: 12-14 every day	Student representative name and mobile number:

Main objective: Understanding fundamental concepts in cell physiology, and gastrointestinal physiology.

Specific objects:

1. Introduction to Physiology Concepts
 - Understanding the fundamental concepts of physiology within the knowledge domain.
2. Internal Environment and Body Control Mechanisms
 - Exploring the mechanisms of homeostasis, stress, and the body's internal environment within the knowledge domain.
3. Cell Membrane Structure and Substances Transport
 - Examining the structure of the cell membrane and the transport of substances through cell membranes within the knowledge domain.
4. Cell Membrane Resting Potential
 - Understanding the creation of cell membrane resting potential and its physical foundation within the knowledge domain.
5. Action Potential in Neural and Muscular Cells
 - Exploring the creation and features of action potentials in neural and muscular cells within the knowledge domain.
6. Physiological Structure of Skeletal Muscle
 - Familiarity with the physiological structure of skeletal muscle and its contraction mechanism within the knowledge domain.
7. Excitation/Contraction Coupling in Skeletal Muscle
 - Understanding the principles of excitation/contraction coupling and contractile characteristics in skeletal muscle within the knowledge domain.
8. Physiological Structure of Smooth Muscle
 - Examining the physiological structure of smooth muscle and its various types within the knowledge domain.
9. Contraction Mechanism in Smooth Muscle

- Understanding the contraction mechanism and its features in smooth muscle within the knowledge domain.

10. Principles of Digestive System Movements and Control

- Exploring the principles governing the movements of different parts of the digestive system and their control within the knowledge domain.

11. Blood Circulation System in the Digestive System

- Understanding the blood circulation system within the digestive system within the knowledge domain.

12. Principles of Secretion in Digestive Tract

- Familiarity with the general principles of secretion in different parts of the digestive tract and their control within the knowledge domain.

13. Digestion and Absorption Principles

- Learning the basic principles of digestion and absorption in the digestive system within the knowledge domain.

14. Digestive Activity of the Liver

- Exploring the digestive activity of the liver within the knowledge domain.

15. Metabolism of Vitamins and Minerals

- Understanding the metabolism of vitamins and minerals within the knowledge domain.

References (Text books):

- 1- Guyton and Hall Textbook of Medical Physiology (Latest Version)
- 2- Berne & Levy Physiology (Latest Version)
- 3- Class Slides and Contents

Student evaluation and the value related to each evaluation:

(The assessment tools employed to evaluate students' comprehension of course content and their attainment of the skills and competencies outlined in the learning outcomes.)

ASSESSMENT TOOLS	From
Cell Physiology (Mid-term)	12
Gastrointestinal Physiology (Final)	8
TOTAL MARKS	20

Students' responsibilities:

- 1- Prepare for class by reviewing topics beforehand and afterwards.
- 2- Adhere to class order and rules.
- 3- Ensure attendance in all classes.

Discipline and educational rules:

1. Attendance Policy:

- A deduction of 0.5 points from a total of 20 points will be applied for each unplanned absence. If the number of absences exceeds the permissible limit, the overall score for the course will be reduced to zero.

2. Punctuality:

- Participants are allowed a maximum grace period of 5 minutes after the scheduled start time to join the class. Beyond this timeframe, latecomers may not be admitted.

3. Mobile Phone Usage:

- The use of mobile phones is strictly prohibited during class. Participants are expected to keep their phones on silent or vibrate mode and refrain from any phone-related activities to maintain a focused learning environment.

Other important notes for students:

Reading the guidelines and rights governing both professors and students.

Note: In each class session, a quiz may be taken or questions asked.

Mid exam date: In accordance with the schedule

Final exam date: In accordance with the schedule

Row	date	Presentation	Topic	Professor	Theoretical or practical	References	Chapter
1	2026/Feb/16	In-person	Comprehending Physiology, Body Fluids, Homeostasis, and Body Control Systems; Exploring Membrane Physiology and Cellular Substance Transport	Prof. Parham Reisi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	1 & 4
2	Feb/23	In-person	Basic physics of membrane potentials, resting membrane potential and action potential, propagation of the action potential	Prof. Parham Reisi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	4, 5
3	Mar/2	In-person	Neuronal signal and factors affecting neuronal conductive velocity, myelin, features of action potential and how membrane potential is recorded	Prof. Parham Reisi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	5
4	Mar/9	In-person	Physiological structure of skeletal muscle and molecular mechanism of contraction, metabolism of energetics of muscle contraction	Prof. Parham Reisi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	6
5	Apr/6	In-person	Characteristics of whole muscle contraction, Remodeling of muscle, neuromuscular junction, action potential and excitation-contraction coupling in skeletal muscle, and other features	Prof. Parham Reisi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	7

6	Apr/13	In-person	Excitation and Contraction of Smooth Muscle, Neuronal and Hormonal Control of contraction in smooth muscle, and other features	Prof. Parham Reisi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	8
7	Apr/20	In-person	General Principles of Digestive Movements, Nervous Control of Digestive Function, Types of Movements in the Digestive Tract, Blood Flow in the Digestive Tract, Transport and Mixing in the Digestive Tract, Chewing and Swallowing Processes	Dr. Ghasemi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	63, 64
8	Apr/27	In-person	Stomach Movements, Small Intestine Movements, Colon Movements, Autonomic Reflexes Impacting Intestinal Activity, General Principles of Digestive Tract Secretion, Saliva Secretion, Esophagus, Stomach, and Pancreas Secretions, Liver's Bile Secretion, Small and Large Intestine Secretions	Dr. Ghasemi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	64, 65
9	May/4	In-person	Basic Principles of Food Digestion and Absorption, Small Intestine Absorption, Large Intestine Absorption, Stool Formation	Dr. Ghasemi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	66
10	May/11	In-person	Understanding the Liver and Its Digestive Functions, Regulation of Food Intake, Exploring Obesity and Thinness, Metabolism of Vitamins and Minerals	Dr. Ghasemi	Theoretical	Textbook of Medical Physiology (Guyton and Hall)	71, 72