

In the Name of God



Hamadan University of Medical Sciences and Health Services
Educational Deputy of the University
Center for Studies and Development of Medical Sciences Education

Theory/Practical Lesson Plan Form

Dear Colleagues,

As the teaching-learning process is one that cannot achieve its objectives without planning, it is essential to develop a lesson plan at the beginning of the educational process (as a roadmap and guide for instructors and students). Therefore, it is requested that esteemed instructors exercise utmost care in completing the lesson plan.

Course and Instructor Details

- **Course Title:** Gastrointestinal Physiology
- **Instructor Name:** Dr. Fatemeh Ramazani Ali Akbari
- **Course Coordinator:** Dr. Fatemeh Ramazani Ali Akbari
- **Department Head:** Dr. Siamak Shahidi
- **Course Units:**
 - **Theoretical:** 0.6 units
 - **Practical:** 0.11 units
- **Student Major and Level:** Medical Field, Doctor of Medicine
- **Class Schedule:**
 - Tuesday: 8:00 AM - 10:00 AM
 - Wednesday: 8:00 AM - 10:00 AM
- **Location:** Medical School

Session	Date	Topic	Behavioral Objectives	Learning Domain	Teaching Method	Duration	Educational Aids	Evaluation Method
1		Introduction to	- Explain the	Cognitive -	Flipped	2 hours	Projector,	Oral multiple-

Session	Date	Topic	Behavioral Objectives	Learning Domain	Teaching Method	Duration	Educational Aids	Evaluation Method
		General Principles of Digestive System Function	<p>physiological structure of the digestive system wall.</p> <ul style="list-style-type: none"> - Describe types of action potentials in the digestive system. - Explain the control of digestive functions by the enteric nervous system. - Describe reflexes in the digestive system and their effects. - Explain types of movements in the digestive system. 	Understanding Affective	Classroom & Group Discussion		Computer with Speaker, Board, PowerPoint Files	choice questions, scenario-solving assignments, peer evaluation, and self-assessment
2		Understanding Food Propulsion and Mixing in the Digestive Tract	<ul style="list-style-type: none"> - Explain the stages of chewing and swallowing. - Describe gastric motility and its 	Cognitive - Understanding Affective	Flipped Classroom & Group Discussion	2 hours	Projector, Computer, Board, PowerPoint Files	Oral questions, scenario-solving assignments, peer evaluation, and self-assessment

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			<p>regulation.</p> <ul style="list-style-type: none"> - Explain food processing in the small and large intestines . - Describe the mechanism of defecation reflex. 					
3		Understanding Secretory Functions of the Digestive Tract 1	<ul style="list-style-type: none"> - Explain the basic mechanisms of stimulation and secretion in the digestive glands. - Describe saliva production and regulation. - Explain mucus-secreting cells and their importance. - Describe gastric secretory cells and their regulatory factors. 	Cognitive - Understanding Affective	Flipped Classroom & Group Discussion	2 hours	Projector, Computer, Board, PowerPoint Files	Oral questions, scenario-solving assignments, peer evaluation, and self-assessment

Session	Date	Topic	Behavioral Objectives	Learning Domain	Teaching Method	Duration	Educational Aids	Evaluation Method
4		Understanding Secretory Functions of the Digestive Tract 2	<ul style="list-style-type: none"> - Explain pancreatic digestive enzymes and their secretion regulation. - Describe bile production and its regulatory factors. - Explain bicarbonate secretion into the small intestine. - Describe secretions of the small intestine and large intestine. 	Cognitive - Understanding Affective	Flipped Classroom & Group Discussion	2 hours	Projector, Computer, Board, PowerPoint Files, Clips, Scenarios	Oral questions, scenario-solving assignments, peer evaluation, and self-assessment
5		Understanding Digestion in the Digestive Tract	<ul style="list-style-type: none"> - Explain carbohydrate digestion in the mouth, stomach, and intestine. - Describe enzymes involved in carbohydrate digestion. - Explain 	Cognitive - Understanding Affective	Flipped Classroom & Group Discussion	2 hours	Projector, Computer, Board, PowerPoint Files, Clips	Oral questions, scenario-solving assignments, peer evaluation, and self-assessment

Session	Date	Topic	Behavioral Objectives	Learning Domain	Teaching Method	Duration	Educational Aids	Evaluation Method
			protein digestion stages and involved enzymes. - Name how fats are digested by various enzymes.					
6		Understanding Nutrient Absorption in the Digestive Tract	- Explain basic principles of absorption in the digestive tract. - Describe the structure of microvilli in the small intestine. - Explain the absorption of carbohydrate rates and their transporters. - Describe cellular mechanisms of protein absorption. - Explain fat absorption stages	Cognitive - Understanding Affective	Flipped Classroom & Group Discussion	2 hours	Projector, Computer, Board, PowerPoint Files, Clips	Oral questions, scenario-solving assignments, peer evaluation, and self-assessment

Session	Date	Topic	Behavioral Objectives	Learning Domain	Teaching Method	Duration	Educational Aids	Evaluation Method
			<p>and entry into the bloodstream.</p> <ul style="list-style-type: none"> - Describe iron absorption stages. - Explain the absorption of various vitamins. 					
7		Introduction to Physical Examination of the Abdomen	<ul style="list-style-type: none"> - Perform abdominal examination through palpation with instructor assistance. - Perform abdominal examination through percussion with instructor assistance. - Auscultate bowel sounds under instructor supervision. - 	Psychomotor	Flipped Classroom & Group Discussion in Physiology Lab	2 hours	Projector, Computer, Board, PowerPoint Files, Clips, Examination Table, Stethoscope	Q&A and report writing

Session	Date	Topic	Behavioral Objectives	Learning Domain	Teaching Method	Duration	Educational Aids	Evaluation Method
			Conduct peer examinations during training.					
8		Introduction to Nasogastric Tube Placement	<ul style="list-style-type: none"> - Independently place a nasogastric tube in a mannequin with instructor assistance. - Conduct peer training on nasogastric tube placement. 	Psychomotor	Flipped Classroom & Group Discussion in Clinical Skills Center	2 hours	Projector, Computer, Board, PowerPoint Files, Clips, Mannequin, NGT	Q&A and report writing

Notes:

- Each session is designed to last approximately 90-100 minutes.
- The teaching methods primarily include lectures, question and answer sessions, and in some cases, flipped classroom techniques.
- Evaluation is conducted through class assessments and final exams.

Grading Scheme

Evaluation Type	Date	Evaluation Tool¹	Weight from Total
Quiz		Answering essay questions	10% of the score
Project Presentation		Presentation style, mastery of the topic, answering student questions	20% of the score
Midterm Exam	According to the academic calendar	Answering written multiple-choice, essay, and short-answer questions	25% of the score
Final Exam	According to the academic calendar	Answering written multiple-choice, essay, and short-answer questions	40% of the score
Other Items		Class participation, answering the instructor's questions, interest in the topic, and following discussions and questions	5% of the score
Total			100%

¹ **Evaluation tools** can include items such as essay exams, short answer questions, fill-in-the-blank questions, multiple-choice questions (MCQs), projects, and assignments, among others.

Reference

Guyton and Hall Medical Physiology, latest edition 2021

Ganong's Medical Physiology, latest edition 2021

Berne and Levy Physiology, latest edition 2021