

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 requires careful planning to achieve its objectives, the preparation of a lesson plan at the beginning of the educational process (as a map and guide for instructors and students) is essential. It serves as one of the main tools for the educational activities of instructors. Therefore, we kindly ask all instructors to pay utmost attention to completing the lesson plan.

Course and Instructor Details (Completing all items in this section is essential)

Course information

Field	Details
Course title	Anatomy of the Digestive System
Instructors	Dr. Maryam Bahmanzadeh; Dr. Abbas Bakhtiari; Dr. Sepideh Gohari Taban
Course coordinator (responsible)	Dr. Maryam Bahmanzadeh
Head of Department	Dr. Maryam Bahmanzadeh
Units (credits)	Theory: 1.5 units; Practical: 0.5 unit
Program & student level	Professional Doctorate — Medicine

Semester	First semester
Teaching location	Faculty of Medicine

Theoretical sessions — Digestive System (1.5 units)

Sessi on	Topic	Learning outcomes (behavioral)	Learning domain	Teachin g method s	Durati on	Teachin g aids	Evaluati on methods
1	Oral cavity anatomy	1. Name parts of the oral cavity. 2. Define the boundaries of the oral (true) cavity. 3. Describe gingival blood supply and innervation. 4. State eruption times for primary and permanent teeth. 5. Describe gross parts of a tooth. 6. Name tooth surfaces. 7. Describe vascular and neural supply of teeth. 8. Describe blood supply and innervation of the lips. 9. Describe blood supply and innervation of the	Knowledge; Comprehension (varied per objective)	Lecture; explanatory Q&A; group discussion	120 minutes	Projector ; PowerPoint; whiteboard; curated online anatomy resources	Formative: initial quiz (MCQ); ongoing: participation, Q&A; Summative: end-of-unit MCQ exam

		<p>cheeks. 10. Describe attachments, actions and innervation of soft palate muscles. 11. Describe root and body of the tongue. 12. List contents of the floor of mouth. 13. Name lingual papillae. 14. Describe attachments, actions and innervation of intrinsic and extrinsic tongue muscles. 15. Describe relations and surfaces of the sublingual gland. 16. Describe relations, blood supply and innervation of the sublingual salivary gland.</p>					
2	Pharynx and esophagus anatomy	<p>1. State superior and inferior limits of the pharynx. 2. Describe posterior</p>	<p>Knowledge; Comprehension; Application (selected)</p>	<p>Lecture; explanatory Q&A; group discussion</p>	<p>120 minutes</p>	<p>Projector ; PowerPoint; whiteboard; curated</p>	<p>Formative: quiz; participation; Summative: MCQ exam</p>

		<p>relations of the pharynx.</p> <p>3. Describe lateral relations of the pharynx.</p> <p>4. Describe attachments, actions and innervation of pharyngeal constrictors.</p> <p>5. Describe attachments, actions and innervation of pharyngeal longitudinal muscles.</p> <p>6. Name internal pharyngeal spaces.</p> <p>7. Describe nasal pharyngeal walls.</p> <p>8. Describe oral pharyngeal walls.</p> <p>9. Describe laryngeal pharyngeal walls.</p> <p>10. Describe pharyngeal vessels and nerves.</p> <p>11. Trace the course and branches of the pharyngeal branch of the glossopharyngeal nerve.</p>				<p>online anatomy resources</p>	
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		<p>12. Describe parts of the esophagus.</p> <p>13. Describe esophageal constrictions.</p> <p>14. Describe cervical and thoracic relations of the esophagus.</p> <p>15. Describe blood supply and innervation of cervical and thoracic esophagus.</p>					
3	Anterior abdominal wall (muscles, inguinal canal, vessels & nerves)	<p>1. Describe positions of abdominal muscles.</p> <p>2. Explain actions and innervation of abdominal muscles.</p> <p>3. Describe muscle aponeuroses.</p> <p>4. Describe rectus sheath.</p> <p>5. List contents of the rectus sheath.</p> <p>6. Localize the inguinal canal.</p> <p>7. Describe structures forming the inguinal canal wall.</p> <p>8. Describe types of</p>	Comprehension; Application	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated online anatomy resources	Formative: quiz; participation; Summative: MCQ exam

		inguinal hernia. 9. Name vessels of the abdominal wall.					
4	Peritoneum	<p>1. Describe position and relations of omental bursa (lesser sac) and greater sac.</p> <p>2. Describe location and relations of the epiploic foramen (of Winslow).</p> <p>3. Describe intraperitoneal spaces.</p> <p>4. Explain clinical importance of peritoneal spaces.</p> <p>5. Describe peritoneal compartments and their significance.</p> <p>6. Describe peritoneal reflections on the liver.</p> <p>7. Describe peritoneal ligaments.</p> <p>8. Describe peritoneal relations in lower abdomen and pelvis.</p> <p>9. Explain peritoneal recesses and</p>	Comprehension; Knowledge	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated online anatomy resources	Formative: quiz; participation; Summative: MCQ exam

		blind-end spaces.					
5	Stomach, small intestine, and celiac trunk anatomy	<ol style="list-style-type: none"> 1. Describe peritoneal relations of the stomach. 2. Name stomach regions. 3. Describe stomach relations. 4. Describe relation of the lesser sac to the stomach. 5. Describe internal stomach structures. 6. Explain location and importance of cardia and pylorus. 7. Define topographic position of the duodenum. 8. Describe peritoneal relations of the duodenum. 9. Name parts of the duodenum. 10. Describe duodenal relations. 11. State topographic positions of jejunum and ileum. 12. Describe peritoneal relations of 	Comprehension; Knowledge; Application	Lecture; explanatory Q&A; group discussion	120 minutes	Projector ; PowerPoint; whiteboard; curated online anatomy resources	Formative: quiz; participation; Summative: MCQ exam

		<p>jejunum and ileum. 13. Differentiate jejunum and ileum. 14. Describe position of the abdominal aorta. 15. List relations of the aorta. 16. Name anterior branches of the abdominal aorta. 17. Name branches of the celiac trunk and describe their course and organ blood supply.</p>					
6	Large intestine; superior & inferior mesenteric arteries	<p>1. Describe positions of large intestine segments. 2. Name relations of large intestine segments. 3. List branches of superior mesenteric artery (SMA). 4. Explain blood supply to large intestine segments. 5.</p>	Comprehension	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated online anatomy resources	Formative: quiz; participation; Summative: MCQ exam

		List branches of inferior mesenteric artery (IMA).					
7	Accessory digestive organs (pancreas, liver, gallbladder)	1. Describe topographic position of the pancreas. 2. Name pancreatic parts. 3. Describe pancreatic relations. 4. Describe pancreatic duct anatomy. 5. Describe liver topography. 6. Explain peritoneal covering of the liver. 7. Describe the porta hepatis and its contents. 8. Describe hepatic ligaments. 9. Name liver relations. 10. Identify biliary ducts. 11. Name hepatic lobes and their significance. 12. Describe gallbladder topography.	Knowledge; Comprehension	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated online anatomy resources	Formative: quiz; participation; Summative: MCQ exam

		13. Name gallbladder relations. 14. Describe biliary drainage pathways.					
8	Posterior abdominal wall, lymphatics, vessels & nerves	1. Name posterior abdominal wall muscles. 2. Describe actions and innervation of posterior abdominal wall muscles. 3. Name relations of the sympathetic trunk in the abdomen. 4. Explain spinal nerve connections to the sympathetic trunk. 5. Describe distribution of sympathetic branches and the lumbar plexus. 6. Localize the vagus nerve in the abdomen. 7. Describe parasympathetic innervation of abdominal organs. 8.	Comprehension; Application	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated online anatomy resources	Formative: quiz; participation; Summative: MCQ exam

		Describe formation and relations of the inferior vena cava (IVC). 9. Name tributaries of the IVC. 10. Describe the portal vein and its relations. 11. Name porto-caval anastomoses, locations and clinical importance.					
9	Histology of oral cavity	1. Describe microscopic structure of lip, cheek, hard & soft palate and pharynx. 2. Describe tongue surfaces. 3. Differentiate primary (deciduous) and permanent teeth. 4. Name components of a permanent tooth. 5. Describe dentin and enamel structure. 6. Describe pulp, cementum and periodontal	Comprehension; Knowledge	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated online histology resources	Formative: quiz; participation; Summative: MCQ exam

		ligament histology. 7. Describe microscopic structure of lingual papillae.					
10	Histology of the GI tract (part 1)	1. Describe layers of the esophagus. 2. Describe microscopic gastric mucosa. 3. Explain acid and pepsin production by parietal and chief cells. 4. Compare histology of stomach regions (cardia, body, pylorus). 5. Compare mucosa, submucosa, muscularis externa and adventitia/serosa in small intestine regions. 6. Describe distinguishing features of duodenum, jejunum and ileum mucosa. 7. Compare histology of large intestine segments.	Comprehension; Evaluation; Knowledge	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated online history resources	Formative: quiz; participation; Summative: MCQ exam

11	Histology of accessory digestive glands	1. Describe exocrine and endocrine pancreatic structure. 2. Differentiate exocrine pancreas and parotid gland histology. 3. Describe liver anatomy and histology. 4. Name hepatic lobule types and cell populations. 5. Describe hepatocyte microscopy. 6. Explain hepatic blood supply. 7. Name parts of biliary tract. 8. Describe components of the portal triad. 9. Describe gallbladder histology.	Comprehension; Knowledge	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated online histology resources	Formative: quiz; participation; Summative: MCQ exam
12	Development of the digestive system	1. Describe origin and formation of the intra-embryonic coelom. 2. Explain formation of peritoneal, pleural and pericardial	Comprehension; Analysis; Synthesis	Lecture; explanatory Q&A; group discussion	120 minutes	Projector; PowerPoint; whiteboard; curated embryology resources	Formative: quiz; participation; Summative: MCQ exam

		cavities. 3. Illustrate development of dorsal and ventral mesenteries. 4. Explain embryologic basis of congenital diaphragmatic hernias. 5. Diagram formation of the primitive gut from the yolk sac. 6. List derivatives and development of foregut, midgut and hindgut. 7. Explain rotation of stomach and intestinal loops and formation of the lesser sac. 8. Diagram cloacal partitioning and cloacal membrane separation.					
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Practical sessions — Digestive System (0.5 unit)

Session	Topic	Learning outcomes (behavioral)	Learning domain	Teaching methods	Duration	Teaching aids	Evaluation methods
P1	Oral cavity & pharynx	1. Identify vestibule and true oral cavity	Application	Observation; demonstration;	120 minutes	Oral cavity & pharynx models; cadaver; dissection	Class activity; quiz; Q&A;

x (models & cadaver)	<p>on models/cadaver. 2. Identify hard and soft palate. 3. Demonstrate floor of mouth muscles superficial → deep on model/cadaver. 4. Delineate nasopharynx, oropharynx, laryngopharynx on model/cadaver. 5. Identify pharyngeal tonsils, palatine and lingual tonsils. 6. Identify relevant salpingopalatine and palatoglossal folds. 7. Identify piriform recess. 8. Identify pharyngeal orifice of Eustachian tube, torus tubarius and levator veli palatini region. 9. Identify tongue</p>		group Q&A; multimedia		assistant; posters; radiology images	attendance; assignment
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		body, root and terminal sulcus.					
P2	Anterior abdominal wall, inguinal canal (models & cadaver)	1. Demonstrate abdominal wall muscles superficial → deep. 2. Identify superficial and deep inguinal rings and canal walls on model/cadaver. 3. Demonstrate anterior-lateral aponeuroses. 4. Identify anterior-lateral wall vessels and nerves. 5. Demonstrate muscle actions on self/peer. 6. Identify spermatic cord/inguinal canal contents. 7. Identify layers of anterior abdominal wall from skin to deep fascia.	Application	Observation; demonstration; group Q&A; multimedia	120 minutes	Torso models; inguinal canal models (2D/3D); cadaver; instructional films; posters; radiology	Class activity; quiz; Q&A; attendance; assignment
P3	Peritoneum, stomach	1. Demonstrate stomach	Application	Observation; demonstration	120 minutes	Torso & visceral models; stomach/duodenum	Class activity; quiz;

	h, duodenum, jejunum, ileum, celiac trunk (models & cadaver)	parts and relations. 2. Demonstrate peritoneal layers, recesses and coverings on cadaver. 3. Identify duodenal parts and relations. 4. Identify jejunum/ileum relations. 5. Demonstrate mesentery and root of mesentery. 6. Identify celiac trunk branches on model/cadaver.		ation; group Q&A; multimedia		m/jejunal models; cadaver; posters; radiology	Q&A; attendance; assignment
P4	Large intestine, SMA/IMA, appendix, liver, gallbladder, pancreas	1. Identify large intestine segments on model/cadaver. 2. Demonstrate transverse & sigmoid mesocolon on cadaver. 3. Identify appendix. 4. Demonstrate relations of large intestine segments. 5. Identify SMA branches on model/cadaver.	Application	Observation; demonstration; group Q&A; multimedia	120 minutes	Visceral & mesenteric models; cadaver; posters; radiology	Class activity; quiz; Q&A; attendance; assignment

		<p>ver. 6. Identify IMA branches on model/cadaver. 7. Locate marginal artery. 8. Identify tenia coli and haustra. 9. Identify liver lobes and visceral surface relations. 10. Identify porta hepatis structures. 11. Demonstrate coronary and triangular ligaments on model. 12. Identify pancreatic parts. 13. Demonstrate pancreatic relations.</p>					
P5	<p>Posterior abdominal wall, aorta, IVC, lumbar plexus, lymphatics</p>	<p>1. Identify posterior abdominal wall muscles. 2. Demonstrate muscle actions on self/peer. 3. Identify lumbar plexus branches on model/cadaver. 4.</p>	<p>Application</p>	<p>Observation; demonstration; group Q&A; multimedia</p>	<p>120 minutes</p>	<p>Torso models; posterior wall models; cadaver; posters; radiology</p>	<p>Class activity; quiz; Q&A; attendance; assignment</p>

		Identify abdominal aorta and relations. 5. Identify branches of the aorta on cadaver/model. 6. Identify IVC and tributaries.					
P6	Oral cavity histology (practical)	1. Identify histology of mature tooth. 2. Identify bell stage tooth germ histology. 3. Identify palatal mucosa histology. 4. Identify tongue histology. 5. Identify lip histology. 6. Identify cap stage tooth germ histology.	Application	Microscopy; live projection; demonstration; group Q&A	120 minutes	Histology slides (various tooth stages, tongue, lip, palate); microscopes; monitor; multihead microscope	Class activity; quiz; Q&A; attendance; assignment; drawings/labels
P7	GI tract histology (practical)	1. Identify stomach histology. 2. Identify duodenum histology. 3. Identify jejunum histology. 4. Identify ileum histology. 5. Identify colon histology. 6. Identify	Application	Microscopy; live projection; demonstration; group Q&A	120 minutes	GI histology slides (stomach, duodenum, jejunum/ileum, colon, rectum); microscopes; monitor; multihead microscope	Class activity; quiz; Q&A; attendance; assignment; drawings/labels

		rectum histology.					
P8	Histology of accessory glands (practical)	1. Identify liver histology. 2. Identify gallbladder histology. 3. Identify pancreatic histology. 4. Identify parotid gland histology. 5. Identify sublingual gland histology. 6. Identify submandibular gland histology.	Application	Microscopy; live projection; demonstration; group Q&A	120 minutes	Slides (liver, gallbladder, pancreas, salivary glands); microscopes; monitor; multihead microscope	Class activity; quiz; Q&A; attendance; assignment; drawings/labels

Assessment — Theory (Anatomy, Histology, Embryology)

Assessment type	Timing	Assessment tool	Weight
Quizzes	Sessions 3 & 6	Written MCQ and short-answer	5%
Project presentation	Sessions 5 & 6	Presentation quality; topic mastery; responses to questions	10%
Midterm exam	Session 8	Written MCQ	40%
Final exam	According to academic calendar	Written MCQ, short-answer, and descriptive questions	40%
Other (class activity, answering instructor, engagement)	Continuous	Participation and engagement	5%
Total	—	—	100%

Assessment — Practical (Anatomy & Histology)

Assessment type	Timing	Assessment tool	Points (out of 20)
Weekly quiz	Weekly	Short-answer questions	1.5
Project presentation	End of term	1. Practical drawing/lamina project (5/0 point) 2. Review	Project: 0.5;

		sessions — 1.5 points (0.5 per half-hour session)	Review: 1.5
Weekly assignment	Weekly	Short clinical question responses	0.5
Final practical exam	According to academic calendar	Practical exam (station/OSPE)	15
Other (active participation, attendance, weekly tasks)	Continuous	Participation & attendance	1
Total	—	—	20

Listed references

Gray's Anatomy — Volume 2: Trunk (2024)
Snell's Clinical Anatomy — Volume 1: Trunk (10th ed.)
Junqueira's Histology — 16th ed. (2024)
Soleimani Rad — Histology
DiFiore Atlas of Histology