



**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 (Completion of all items in this section is mandatory)

- **Course Title:** Histopathology of Parasitic Infections
- **Instructor's Full Name:** Dr. Fa'ezeh Foroughparvar
- **Course Coordinator's Full Name:** Dr. Mohammad Fallah
- **Head of Department's Full Name:** Dr. Seyed Amir Ghiyathian
- **Type and Credit Distribution:** Theoretical – 1 Credit | Practical – ... Credit(s)
- **Student Program and Level:** PhD in Parasitology
- **Teaching Location:** Classroom, School of Medicine

Hamedan University of Medical Sciences – Deputy of Education – Center for Educational Development

Session	Topic (Title)	Behavioral Objectives	Learning Domain	Teaching Method	Duration	Teaching Aids	Evaluation Method
1	General Concepts in Histopathology	By the end of this session, the student should be able to: 1. Define histopathology . 2. Explain the importance of histopathology in infectious diseases. 3. Identify the components of the cell structure. 4. Describe the genome, types of DNA, and their functions. 5. Explain cell communications. 6. Identify elements of the cytoskeleton. 7. Explain cell metabolism.	Cognitive	Lecture , Memory Retention, Q&A	120 min	Internet-connected computer, Data projector, Screen, Flash drive, Microsoft Office (PowerPoint, Word), Whiteboard, Markers	In-class oral questioning, Descriptive exam
2	Definitions and Terminology in Histopathology	By the end of this session, the student should be able to: 1. List types of cellular injury. 2. Define hyperplasia and hypertrophy. 3. Explain physiological and	Cognitive	Lecture , Memory Retention, Q&A	120 min	Same as above	Same as above

		pathological hypertrophy. 4. List the factors that cause cellular injury.					
3	Mechanisms of Tissue Injury	By the end of this session, the student should be able to: 1. Name types of cellular damage. 2. Identify factors leading to tissue injury. 3. Describe the mechanism of cell death. 4. Explain morphological changes in cell death. 5. Compare the mechanisms of tissue damage from different origins.	Cognitive	Lecture, Memory Retention, Q&A	120 min	Same as above	Same as above
4	Inflammation and General Infections	By the end of this session, the student should be able to: 1. List general characteristics of inflammation. 2. Explain types of acute and chronic inflammation. 3. Describe tissue injury in acute and chronic infections. 4. State the	Cognitive	Lecture, Memory Retention, Q&A	120 min	Same as above	Same as above

		causes of inflammation. 5. Explain the course of inflammation upon encountering infectious agents. 6. Describe inflammations related to parasitic infections.					
5	Pathological Reactions in Different Organs (Brain, Muscle, Viscera)	By the end of this session, the student should be able to: 1. Name mediators associated with tissue injury in various tissues. 2. Describe environmental factors affecting tissues. 3. Explain pathological effects of environmental factors on tissue.	Cognitive	Lecture, Memory Retention, Q&A	120 min	Same as above	Same as above
6	Histopathology and Microanatomy of Fasciola and Dicrocoelium	By the end of this session, the student should be able to: 1. Explain the life cycle of Fasciola and Dicrocoelium in the liver. 2. Describe pathological effects of hepatic	Cognitive	Lecture, Memory Retention, Q&A	120 min	Same as above	Same as above

		trematodes on bile ducts and liver. 3. Describe microanatomical features of Fasciola and Dicrocoelium in tissue.					
7	Histopathology and Microanatomy of Schistosomes and Other Trematodes	By the end of this session, the student should be able to: 1. Explain the life cycle of schistosomes in tissue. 2. Name tissues targeted by schistosomes. 3. Describe pathological effects of blood schistosomes, particularly in chronic form. 4. Define Splendore-Hoeppli phenomenon. 5. Explain granulomatous reaction around schistosome eggs.	Cognitive	Lecture, Memory Retention, Q&A	120 min	Same as above	Same as above
8	Histopathology and Microanatomy of Cestodes	By the end of this session, the student should be able to: 1. Explain tissue stage of larval cestodes. 2. Name invasion sites of cysticercosis.	Cognitive	Lecture, Memory Retention, Q&A	120 min	Same as above	Same as above

		3. Identify components in cross-section of a cestode proglottid. 4. Describe pathological features of neurocysticercosis. 5. Define clustered cysticercosis. 6. Describe pathology of hydatid cyst in liver and lung. 7. Describe pathology of alveolar cyst in liver.					
9	Histopathology and Microanatomy of Ascaris, Trichuris, Enterobius, and Hookworms	By the end of this session, the student should be able to: 1. Describe microanatomy of Ascaris. 2. Identify internal structures in cross-section of Ascaris. 3. Differentiate male and female Ascaris in cross-section. 4. Explain pathology of ectopic ascariasis. 5. Describe microanatomy of Enterobius and identify male/female cross-sections. 6. Describe microanatomy of Trichuris	Cognitive	Lecture, Memory Retention, Q&A	60 min	Same as above	Same as above

		and identify internal parts in cross-section (male/female). 7. Describe microanatomy of hookworms and identify male/female cross-sections.					
--	--	---	--	--	--	--	--

Grading Scheme

Evaluation Type	Tool(s) Used	Points out of 20
Quiz	-	-
Project Presentation	-	-
Midterm	-	-
Final Exam	Descriptive exam, Short-answer exam	18
Class activity	Oral responses, Participation, Active involvement	2
Total	-	20

References

1. Mobedi, A., Mowlavi, G., Jafar, M. (2008). *Atlas of Parasitology – Identification of sections of helminths in tissue (illustrated, diagnostic)*. Tehran University of Medical Sciences Press.
2. Gutierrez, Y. *Diagnostic Pathology of Parasitic Infections with Clinical Correlations*. Lea & Febiger, Latest Edition.
3. Luna, L. H. T. (1960). *Manual of Histologic Staining Methods*. Armed Forces Institute of Pathology, 3rd Ed., McGraw Hill, N.Y.
4. Meyers, W. M. (2000). *Pathology of Infectious Disease, Vol. 1 – Helminthiases*.