بسمه تعالی

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	Cardiac Physiology
Instructor	Dr. Siamak Shahidi
Course Coordinator	Dr. Siamak Shahidi

Head of Department	Dr. Siamak Shahidi
Credit Hours	Theory: 0.47 units; Practical: 0.05 units
Program & Level	Doctor of Medicine (General) – Professional Doctorate
Teaching Location	Classroom 5, School of Medicine

Session-by-Session Syllabus

Session	Topic(s)	Expected Learning Outcomes (Behavioral)	Learning Domain	Teaching Method(s)	Duration	Teaching Aids	Assessment Method(s)
1	Introduction to General Cardiac Physiology and Properties of Contractile Cardiac Cells	1. Describe the general structure of the heart. 2. List the functions of the pericardium. 3. Identify types of cardiac fibers and their roles. 4. Explain physiological features of contractile cardiac cells. 5. Relate the electrical and mechanical activities of the heart.	Cognitive	Lecture, Q&A	2 hrs	Video projector, computer, whiteboard, PowerPoint slides, video clips	Oral questions
2	Cardiac Conduction System and Its Function	1. Describe components of the cardiac conduction system and their characteristics. 2. Explain the process of impulse generation and distribution. 3. Explain	Cognitive	Lecture, Q&A	2 hrs	Video projector, computer, whiteboard, PowerPoint slides, video clips	Oral questions

		control mechanisms of the conduction system.					
3	Electrocardiography and Normal Electrocardiogram	1. State the types of cardiac information from an ECG. 2. Explain the basis of ECG wave formation. 3. Describe waveforms, intervals, and segments in a normal ECG. 4. Calculate heart rate from an ECG. 5. Identify ECG leads and their circuit characteristics. 6. Draw axes for each ECG lead.	Cognitive	Lecture, Q&A	2 hrs	Video projector, computer, whiteboard, PowerPoint slides, video clips	Oral questions
4	Electrical Axis of the Heart, Its Modifying Factors, ECG, and Cardiac Arrhythmias	1. Explain wave vectors of each ECG wave. 2. Draw the heart's electrical axis using an ECG. 3. Describe factors altering the electrical axis. 4. Identify factors changing amplitude/shape of QRS complexes. 5. Explain ECG changes	Cognitive	Lecture, Q&A	2 hrs	Video projector, computer, whiteboard, PowerPoint slides, video clips	Oral questions

		due to major arrhythmias.					
5	Electrocardiography – Practical	Perform ECG recording with proper technique and provide interpretation/report based on the recorded ECG.	Psychomotor	Lecture and hands-on ECG recording	2 hrs	Computer, PowerPoint, video projector, whiteboard, ECG machine	Written quiz, lab report

Grading Scheme

Assessment Type	Assessment Tool	Points (%)
Quiz	Written questions	5%
Class Participation	Oral Q&A	5%
Final Exam	Multiple-choice & descriptive questions	90%
Total	—	**100%**

References

Main:

- Guyton & Hall, *Textbook of Medical Physiology*, 2021 Edition (Latest Print) + Class Notes
- Ganong's *Review of Medical Physiology*, latest edition (2021)
- Berne & Levy, *Physiology*, latest edition (2021)