



مركز الاعتماد  
وَضْمَانُ الجُودَة  
ACCREDITATION & QUALITY ASSURANCE CENTER



**The University of Jordan**

**Accreditation & Quality Assurance Center**

## **Course Syllabus**

**Course Name:**  
Cardiovascular  
system

1	Course title	Cardiovascular system	
2	Course number	0500331	
3	Credit hours (theory, practical)	5 (4+1)	
	Contact hours (theory, practical)	(60+30)	
4	Prerequisites/corequisites		
5	Program title	MD	
6	Program code		
7	Awarding institution	University of Jordan	
8	Faculty	Medicine	
9	Department		
10	Level of course	bachelor	
11	Year of study and semester (s)	Third year fall semester	
12	Final Qualification	MD degree	
13	Other department (s) involved in teaching the course	Anatomy, physiology, pathology, microbiology, biochemistry, pharmacology, internal medicine and general surgery	
14	Language of Instruction	English	
15	Date of production/revision	2015	

### 16. Course Coordinator:

Dr. Faisal Mohammed, Daily 10-11, 3-4, Ext. 23482  
 Email: [fmmed@ju.edu.jo](mailto:fmmed@ju.edu.jo); [fimohammed@gmail.com](mailto:fimohammed@gmail.com)

Office n

### 17. Other instructors:

Instructor	Topic	Office Hours	Office No.	Phone	Email
Faraj Bustami	Anatomy	2-4 Thursday	118	23429	fbustami@ju.edu.jo
Faisal Mohammed	Physiology	10-11, 3-4 Daily	111	23482	fmmed@ju.edu.jo
Ashraf Khasawneh	Microbiology	Adjunct		0799157366	ashrafkh@hu.edu.jo
Samir Naji	Microbiology	Adjunct		0799768949	sameer@hu.edu.jo
Asem Shihabi	Microbiology	12-1 Monday		23484	ashihabi@ju.edu.jo
Munir Gharaiba	Pharmacology	11-12 Tue	307	23456	mggharaib@ju.edu.jo
Malek Zihlif	Pharmacology	11-12 Tue	311	23464	m.zihlif@ju.edu.jo
Tareq Qsous	Clinical-Medicine	12-1 Tue	Hospital	0798504494	Tareq_goussou@yahoo.com

Hana Makhamreh	Clinical-Medicine	12-1 Sun,	Hospital	0799060623	h.makhamreh@ju.edu.jo
Mahmoud Abu-Abeeleh	Clinical-Surgery	12-1 Tue	Hospital	0799060832	abeelehm@yahoo.com

**18. Course Description:**

<i>As stated in the approved study plan.</i>	<i>As stated in the approved study plan.</i>
This course covers a fundamental clinically-oriented normal structure and function of the cardiovascular system, together with the pathological abnormalities that may afflict the system and drugs that are used in treatment.	

**19. Course aims and outcomes:**

A- Aims and B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course students will be able to ...

**A) Knowledge and Understanding**

By the end of the course the medical student should have knowledge and understanding of the following :

1. Gross, microscopic and surface anatomy of the heart with particular reference to the heart conductive system, valves, chambers, coronary arteries and autonomic nerve supply.
2. Embryological development of the heart and blood vessels. Congenital malformations.
3. Action potential and electrical activity of the conductive system and myocardium, including the ionic events that underlie their behaviour and the relation to electrical impulses generated on the electrocardiogram.
4. Biochemical characteristics of cardiac muscle and its energy utilization including the role of Calcium. Myoglobin, cardiac enzymes and troponin, their role in diagnosis of myocardial disease.
5. Electrocardiography and the tri-axial system. Normal ECG.
6. Relation of the electrical activity of the heart to its mechanical contractility, pressure changes and blood flow through the chambers and valves and the generation of heart sounds.
7. Auscultation for heart sounds. Production of murmurs. Degenerative and rheumatic valvular disease, infective endocarditis
8. Heart rate and its humoral and nervous control. Stroke volume and cardiac output. Normal heart rhythm. Cardiac arrhythmias. Drugs used in the treatment of arrhythmias viz. sodium channel blockers, beta adrenergic blockers, drugs prolonging the refractory period and calcium channel blockers.
9. Gross and microscopic anatomy of blood vessels of the body. Surface anatomy of relevant blood vessels in particular for pulse examination and other clinical procedures. Techniques of examination of peripheral pulses.
10. Systolic, diastolic and mean systemic arterial blood pressures. Nervous, biochemical and mechanical factors that control arterial blood pressure.
11. Measurement of blood pressure.
12. Hypertension : systemic and pulmonary, their aetiology, pathology and complications. Drugs used in the treatment of hypertension viz. vasodilators, sympatholytic agents, angiotensin inhibitors, diuretics and calcium channel blockers.
13. Central venous pressure. Factors that influence CVP. Clinical inspection of jugular venous pressure.
14. Hypotension, its pathogenesis and treatment.
15. Ischaemic heart disease aetiology, risk factors, pathology and clinical manifestations, with particular reference to angina, myocardial infarction and heart failure. Drugs used in treatment.
16. Haemodynamics and clinical manifestations of heart failure and oedema.
17. Diseases of the pericardium and myocardium.
18. Drugs used in the treatment of heart diseases viz. Cardiac glycosides, diuretics, catecholamines and phosphodiesterase inhibitors.
19. Atherosclerosis pathogenesis, pathology and complications. Drugs used in hyperlipidaemic states.
20. Thrombosis and embolisation. Haemorrhage.
21. Varicose veins.
22. Types of shock, pathogenesis, clinical manifestations and drugs used in treatment.
23. Vasculitis pathogenesis, pathology and complications.
24. Microorganisms that cause infectious lesions in the cardiovascular system viz. Spirochaetes, Rickettsiae and viruses. Bacteria causing endocarditis.
25. Principles of heart transplantation.
26. Relevant X-ray examination.

**B) Cognitive/intellectual skills**

The student should be able to observe, interpret and correlate information to attain the right conclusions regarding normal and abnormal conditions.

**C) Subject specific skills**

Palpation of pulses, auscultation of heart sounds, observation of CVP, measurement of blood pressure, normal ECG interpretation, normal X-ray interpretation, recognition of gross and microscopic abnormal conditions.

**D) Transferable skills**

Demonstrate good command of clinical skills and knowledge of the course with the ability to impart these to colleagues and juniors

**20. Topic Outline and Schedule:**

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Anatomy	1-3	Faraj Bustami	Anatomy	Written & practical exam	See references
Physiology	2-4	Faisal Mohammed	Physiology	Written & practical exam	See references
Pathology	2-4	Nisreen Abu Shaheen	Pathology	Written & practical exam	See references
Microbiology	2-4	Asem Shihabi Ashraf Gharaiba Samir Naji	Microbiology	Written & practical exam	See references
Pharmacology	3-5	Munir Gharaiba Malek Zihlif	Pharmacology	Written & practical exam	See references
Clinical	4-5	Tareq Qsous Hana Makhamreh Mahmoud Abu-Abeeleh	Medicine and surgery	Written & practical exam	See references

**21. Teaching Methods and Assignments:**

Development of ILOs is promoted through the following teaching and learning methods:  <b>1- Didactic lectures presented in power point slides will be provided for students.</b> <b>2- Assigned chapters from the text book are expected to be read by students.</b> <b>3- Lab sessions throughout the course demonstrate the practical and clinical aspect of the theoretical part.</b>	Develop
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**22. Evaluation Methods and Course Requirements:**

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:  <b>- MCQ exams designed to achieve ILO's of the course.</b> <b>- Midterm 30%, Practical (Lab) 20%, In course evaluation 10% and Final exam 40%</b>	Opportu and req
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**23. Course Policies:**

<p>A- Attendance policies: According to rules and regulation of the University, please refer to University of Jordan Students Handbook (page 13 and 14) <a href="http://registration.ju.edu.jo/Documents/daleel.pdf">http://registration.ju.edu.jo/Documents/daleel.pdf</a> and the regulation of the school of medicine</p> <p>B- Absences from exams and handing in assignments on time: According to rules and regulation of the University, please refer to University of Jordan Students Handbook (page 16 and 17) <a href="http://registration.ju.edu.jo/Documents/daleel.pdf">http://registration.ju.edu.jo/Documents/daleel.pdf</a></p> <p>C- Health and safety procedures: lab work related health and safety measures are given to students by the instructors in every lab session.</p> <p>D- Honesty policy regarding cheating, plagiarism, misbehavior: According to rules and regulation of the University, please refer to University of Jordan Students Handbook (page 62-70) <a href="http://registration.ju.edu.jo/RegRegulations/الطلبه20%تأديب20%نظام.pdf">http://registration.ju.edu.jo/RegRegulations/الطلبه20%تأديب20%نظام.pdf</a></p> <p>E- Grading policy: Rules are preset by the Faculty and Department Councils.</p> <p>F- Available university services that support achievement in the course: Main University Library, School of Medicine library, Medical Skills lab for illustration and simulation, School of Medicine Lab of Physiology.</p>	<p>A- Atten</p> <p>B- Absen</p> <p>C- Healt</p> <p>D- Hone</p> <p>E- Gradi</p> <p>F- Avail</p>
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**24. Required equipment:**

Lab coat for laboratory sessions	
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**25. References:**

<p>A- Required book (s), assigned reading and audio-visuals:</p> <ol style="list-style-type: none"> <li>1. Snell, R.: Clinical Anatomy, last edition-Lippincott, Williams &amp; Wilkins.</li> <li>2. Guyton &amp; Hall: Textbook of Medical physiology, 13<sup>th</sup> edition, Elsevier, 2016.</li> <li>3. Robbins &amp; Cotran Pathologic Basis of Disease, 9th edition,</li> <li>4. Craig, CR. &amp; Stitzel, RE: Modern Pharmacology with clinical applications last edition</li> <li>5. Devlin K: Textbook of Biochemistry with clinical applications last edition Willey</li> <li>6. JAWETZ, Melnick &amp; Adelberg: Medical Microbiology. last edition, LANGE</li> </ol> <p>B- Recommended books, materials, and media:</p> <ol style="list-style-type: none"> <li>1. Color Textbook of Histology, 3rd edition, Gartner and Hiatt.</li> <li>2. Ganong's review of medical physiology, 25th edition. Barrett, Barman, Boitano, Brooks.</li> <li>3. Biochemistry (Lippincott illustrated reviews series) 6th edition, Farrier.</li> <li>4. Basic clinical parasitology. F. A. Neva &amp; H.W. Brown. Prentice Hall International Editions.</li> <li>5. Sherries Medical Microbiology, 6th edition, Ryan, Ray, Ahmad, Drew.</li> <li>6. Basic and Clinical Pharmacology, 13th edition, Katzung, Trevor</li> </ol>	<p>C- Req</p> <p>D- Rec</p>
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**26. Additional information:**

Nothing
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Name of Course Coordinator: -----Signature: ----- Date: -----

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:

- Head of Department
- Assistant Dean for Quality Assurance
- Course File