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| --- | --- | --- |
| **Course Title:**  | Cardiovascular system |  |
| **Course Code:** | **381 CVS-5** |  |
| **Program:** | Bachelor of Medicine and Bachelor of Surgery (MBBS) |  |
| **Department:**  | N/A |  |
| **College:** | Medicine |  |
| **Institution:** | Najran University |  |

# A. Course Identification

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| --- | --- |
| **1. Credit hours: 5 (4+1)** |  |
| **2. Course type** |
| **a.** | University |  | College |  | Department |  | Others | **🗸** |  |
| **b.** | Required | **√** | Elective |  |  |
| **3. Level/year at which this course is offered:** | **8 th level / 3rd year** |
| **4. Pre-requisites for this course** (if any)**: phase I blocks** |
| **5. Co-requisites for this course** (if any)**: none** |
|  |

## 6. Mode of Instruction (mark all that apply)

| **No** | **Mode of Instruction** | **Contact Hours** | **Percentage**  |
| --- | --- | --- | --- |
| **1** | **Traditional classroom** | 72 | 67 % |
| **2** | **Blended**  |  |  |
| **3** | **E-learning** |  |  |
| **4** | **Distance learning**  |  |  |
| **5** | **Other**  | 35 | 33 % |

**7. Contact Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Contact Hours** |
| **1** | **Lecture** | 50 |
| **2** | **Laboratory/Studio** | 20 |
| **3** | **PBL**  | 16 |
| **4** | **TBL** | 6 |
| 5 | **BST**  | 6 |
| 6 | **Skills lab**  | 9 |
| 7 | **Total** | 107 |

# B. Course Objectives

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| 1. Course Description This course is delivered to the medical students at the level five /3rd year. It has been designed to achieve horizontal and vertical integration of cardiovascular system structure, functions, its common relevant disorders, and their diagnosis and management. The students are expected to develop a problem-solving approach to the relevant cardiovascular system disorders, their diagnoses, and non- pharmacological and pharmacological management |
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| 2. Course Main Objective |
| **By the end of this course, the students are expected to:**1) **Relate** the structure to functions of the cardiovascular system.2) **Interpret** the symptoms and signs of most common cardiovascular diseases anddisturbances.3) **Discuss** the pathogenesis of various cardiovascular system diseases presentation, investigations (laboratory, radiological, etc.), and management. 4) **Apply** a problem-solving approach to the cardiovascular system disorders. 5) **Examine** clinically patients with cardiovascular system disorders |

# C. Course Content

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| NO | List of Topics | Contact Hours |
| 1 | Introduction to the Block L | 1 |
| 2 | External and internal features of the heart, surface anatomy of the heart and conducting system L (Ana.) | 1 |
| 3 | Blood supply of the heart L (Ana.) | 1 |
| 4 | Histology of the cardiac muscle, cardiac skeleton and blood vessels L (Ana.)  | 1 |
| 5 | Thoracic cage, mediastinum (Ana.) (DR)  | 2 |
| 6 | Structure and function of the heart L (Phy) | 1 |
| 7 | Development of the heart (cardiac tube) L (Ana.) | 1  |
| 8 | The Pericardium, Blood supply, external & internal features of the heart (Ana.) (DR)  | 2  |
| 9 | Properties of the cardiac muscle L 1 (Phy) | 1 |
| 10 | Properties of the cardiac muscle L 2 (Phy) | 1 |
| 11 | Metabolism of the cardiac muscle L (Bio.) | 1 |
| 12 | Development of the arteries & veins L (Ana.) | 1  |
| 13 | Histology of the heart and blood vessels Practical: (Ana.) (LAB) | 2  |
| 14 | Congenital anomalies of the heart & blood vessels L 1 (Ana) | 1  |
| 15 | Congenital anomalies of the heart & blood vessels L 2 (Ana) | 1  |
| 16 | PBL week (1) | 4 |
| 17 | Endocardial pathology L (Path.) | 1 |
| 18 | Cardiac cycle, heart sounds & murmurs (Phys.) lab. | 2 |
| 19 | Cardiac cycle, heart sounds & murmurs (Phys.) TBL | 2 |
| 20 | Pericardium & Myocardial pathology L 1 (Path.) | 1 |
| 21 | Pericardium & Myocardial pathology L 2 (Path.) | 1 |
| 22 | ECG L (Phy) | 1  |
| 23 | Cardiac output L (Phys.) | 1  |
| 24 | Physiology lab, ECG (Phys. LAB) | 2 |
| 25 | Hypertension pathology L (Path.) | 1 |
| 26 | Atherosclorosis L (Path.) | 1 |
| 27 | Regulation of arterial blood pressure L (Phys). | 1 |
| 28 | Properties of the vascular system & vascular resistance L (Phy) | 1 |
| 29 | Organisms causing endocarditis L 1, 2 (Mic.) | 2 |
| 30 | Coronary circulation L (Phys.) | 1 |
| 31 | Organisms causing endocarditis, myocarditis & pericarditis – (LAB) | 2 |
| 32 | Systemic HTN L (Med.) | 1 |
| 33 | Drug treatment of hypertension L 1 (Phar.) | 1 |
| 34 | PBL week (2) | 4 |
| 35 | Drug treatment of hypertension L 2 (Phar.) | 1 |
| 36 | Practical Physiology, Blood Pressure measurement (Phys.) (LAB) | 2 |
| 37 | Rheumatic heart diseases TBL | 2  |
| 38 | Drug treatment of heart failure L 1 (Phar.) | 1 |
| 39 | Drug treatment of heart failure L 2 (Phar.) | 1 |
| 40 | Aneurysm L (Path) | 1 |
| 41 | CVS responses to exercise L (Phys.) | 1 |
| 42 | Pathology of the Heart (Path.) (LAB) | 2 |
| 43 | Ischemic heart diseases L (Med.) | 1 |
| 44 | Drug treatment of Ischemic heart diseases L (Phar.) | 1 |
| 45 | Bed side teaching (BST) History and Examination (Med.) | 3 |
| 46 | Vasculitis pathology L (Path) | 1 |
| 47 | Capillary fluid Exchange and edema L (Phys) | 1 |
| 48 | Antihyperlipideamic drugs L (Pharma.) | 1 |
| 49 | Drug effect on isolated heart management of hypertensive crisis (Lab.) (Phar.)  | 2 |
| 50 | Shock L (Phys.)  | 1 |
| 51 | Deep Venous Thrombosis L (MED) | 1 |
| 52 | PBL week (3) | 4 |
| 53 | Normal & Abnormal heart sounds, Normal & Abnormal Pulse rate Skill lab (Phys.) | 3 |
| 54 | Heart failure (TBL) (Med.) | 2  |
| 55 | Valvular heart diseases L (Med) | 1 |
| 56 | Heart & blood vessel tumors L (Path.) | 1 |
| 57 | Congenital heart diseases L -1 (Paedia) | 1 |
| 58 | Congenital heart diseases L -2 (Paedia) | 1 |
| 59 | CPR Skills Lab (Med.) | 3 |
| 60 | Arrhythmias L -1 (med.) | 1 |
| 61 | Arrhythmias L -2 (med.) | 1 |
| 62 | Cardiac Examination Skill Lab. (Med.) | 3 |
| 63 | Peripheral Vascular diseases L (Surg.) | 1 |
| 64 | Introduction to cardiac surgery L (Surg.) | 1 |
| 65 | Clinical Assessment of the CVS (X ray) L (Rad.)  | 1 |
| 66 | Vessels Pathology Practical (Path.) (LAB)  | 2 |
| 67 | Pulmonary hypertension L (Med.) | 1 |
| 68 | PBL week (4) | 4 |
| 69 | Approach to CHD bed side teaching (BST) (Pedia) | 3 |
| 70 | Drugs treatment of arrhythemias L 1 (Pharma) | 1 |
| 71 | Drugs treatment of arrhythemias L 2 (Pharma) | 1 |
| Total  | 107 |

# D. Assessment Tasks for Students

| **#** | **Assessment task\***  | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | Mid-block exam  | Beginning of 3rd Week  | 20 % |
| **2** | TBL assessment | Weeks 2-4 | 10% |
| **3** | PBL assessment | Weeks 1-4 | 10 % |
| **4** | End of course exams:- Written: MCQs (40%) - Practical: OSPE (20%  | 5th Week  | 60% |

**\*Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

# F. Learning Resources and Facilities

## 1.Learning Resources

|  |  |
| --- | --- |
| **Required Textbooks** | * 1. ANATOMY
1. Snell Clinical Neuroanatomy. Richard S. Snell. 7th Ed
2. Gray’s Anatomy for Students. Richard L. Drake, Wayne Vogal and Adam W. Mitchell. 3rd Ed
	1. EMPERYOLOGY
3. Langman’s Medical Embryology. T. W. Sadler. 13th Ed
4. The Developing Human: Clinically Oriented Embryology. Keith L. Moore, T. V. N Persaud and Mark G. Torchia. 9th Ed
	1. HISTOLOGY:
5. WHEATER’S Functional Histology: A Text and Colour Atlas. Barbara Young, Phillip Woodford and Geraldine O’Dowd. 6th Ed.
6. JUNQUEIRA’S Basic Histology: text and atlas. Antony L. Mescher. 14th Ed.
	1. PHYSIOLOGY:
7. Ganong’s Review of Medical Physiology.Kim Barret et al. 25th Ed. 2016
8. Guyton ad Hall text book of medical physiology. John E. Hall. 13th Ed. 2016
	1. BIOCHEMISTRY:
9. Medical biochmistry. John W Baynes and Mark H Dominiczak. 3rd Ed.
10. Harpers illustrated biochemistry.28th Ed.
	1. PHARMACOOGY:
11. Goodman and Gillman’s The Pharmacological Basis of THERAPEUTICS. Laurance L. Brunton, John S. Lazo and Keith L. Parker. 11th Ed
12. Basic & Clinical Pharmacology by B.G. Katzung.11th Ed.
	1. PATHOLOGY:
13. Robbins Basic Pathology. Kumar, Abbas and Aster. 9th Ed.
14. Mur’s Text Book of Pathology, David A Levison et al.14th Ed.
	1. MICROBIOLOGY:
15. Aneja, K R. ; Textbook of Basic and Applied Microbiology. c2015.
16. Bailey & Scott's diagnostic microbiology; Tille, Patricia M.13th ED.
17. Greenwood, David, 1935; Medical microbiology : a guide to microbial infections : pathogenesis, immunity, laboratory diagnosis, and control. 18th ED
18. Markell and Voge’s Medical parasitology. 9th Ed.
19. Paniker’s Textbook of Medical Parasitology, 7th edition 2013
	1. MEDICINE:
20. Davidson's essentials of medicine , J. Alastair Innes.2 nd edition.2016
21. Current Medical Diagnosis &treatment.Maxine A. Papadakis and Stephen J. McPhee. 55th Ed. 2016
22. Harrison’s principles of internal medicine.Kasper et al.19th Ed.
	1. Pediatrics:
23. Nelson Essentials of Pediatrics, W. B Saunders
24. Illustrated Textbook of Paediatrics, ‎5th edition.
25. Manual of Clinical Pediatrics Mansour N. Al Hawasi
26. Examination paediatrics, Wayne Harris , Australia; 5th edition.
 |
| **Essential References Materials** | 1. Ganong’s Review of Medical Physiology, Kim E. Barrett et al, 25th edition, 2016.
2. Grant’s Atlas of Anatomy, Anne M.R.Agur, Arthur F. Dalley, 13th edition 2013
3. Merkell and Voge’s Medical Parasitology, David T. John et al, 9th edition.2006.
4. Wheater’s basic histopathology
5. Di Fiore’s atlas of histology
 |
| **Electronic Materials** | 1. Saudi Digital Library <https://sdl.edu.sa>
2. <http://www.adameducation.com/interactive-physiology>
3. http://www.webpath.med.utah.edu
 |
| **Other Learning Materials** |  |

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**(Classrooms, laboratories, demonstration rooms/labs, etc.) | 1. Lecture room suitable for students.
2. Laboratory (dissection room-DR, physiology, biochemistry, microbiology, pathology, pharmacology and clinical skills) suitable for students.
3. Teaching hospital for bedside teaching
 |
| **Technology Resources** (AV, data show, Smart Board, software, etc.) | 1. Computers, multimedia in lecture room, PBL room and laboratories.
2. There is a need for 25 computers with networking and internet access for student learning. As well as a number of computers and multimedia projectors in the other rooms.
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| **Other Resources** (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | Library supplied with reference, textbooks, and electronic resources |

# F. Specification Approval Data

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| --- | --- |
| **Council / Committee** |  |
| **Reference No.** |  |
| **Date** |  |