

## T6. Course Specification (CS)

Institution: Najran University	Date of Report: 37-38 H 1 <sup>st</sup> semester
College/Department: college of Medicine	

### A. Course Identification and General Information

1. Course title and code: Cardiovascular System (353 CVS-5) (5 قلب 353)			
2. Credit hours 5 (4+1)			
3. Program(s) in which the course is offered: Bachelor of Medicine and Bachelor of Surgery			
4. Name of faculty member responsible for the course. - Coordinator: Dr. Ahmed Elsir Mokhtar - Co-coordinator: Dr. Samy Ismail Ahmed			
5. Level/year at which this course is offered: 5 <sup>th</sup> level/3 <sup>rd</sup> year.			
6. Pre-requisites for this course (if any): According to by laws.			
7. Co-requisites for this course (if any): None.			
8. Location if not on main campus: Main campus, Najran University Hospital.			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="70%"/>
b. Blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. Other	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="30%"/>
Comments:			

## B Objectives

### 1. What is the main purpose for this course?

By the end of this course the student is expected to:

- 1) Acquire sound knowledge of Cardiovascular system structure and functions.
- 2) Describe the symptoms and signs of some common diseases, injuries and disturbances of this system and their prevention.
- 3) Develop a problem solving approach to the Cardiovascular system disorders.
- 4) Explain the pathogenesis of various Cardiovascular disease categories and their presentation.

### 2. Plans for developing and improving the course that are being implemented.

- 1) Continuous updating of the information, knowledge and skills included in the course through the continuous search for new knowledge and skills available in recent publications (books, journals and trusted medical web sites).
- 2) Continuous improvements in teaching methods to encourage the students to participate effectively in their various academic activities.
- 3) Continuous evaluation of the course content, student level and establish plans accordingly.

## C. Course Description of Cardiovascular System (353 CVS-5) (5 قلب 353):

*(Note: General description in the form to be used in the Bulletin or handbook should be attached)*

This is a five-week block course is delivered to level five, 3<sup>rd</sup> year medical students. The student acquires sound knowledge of cardiovascular system different structures (morphology of the heart, cardiac muscles,...etc.) as well as their functions and disorders. This course integrates basic knowledge of anatomy and physiology with the common problems and disorders of the cardiovascular system. Therefore, in this block, the student can develop a problem solving approach to the relevant cardiovascular disorders, their diagnosis, and non-pharmacological and pharmacological management. The intended objectives of the course are achieved through lectures, practicals, seminars, bedside teaching, self-directed learning and problem-based learning sessions.

### 1. Topics to be covered

List of Topics	No of Weeks	Contact Hours
Introduction to the Block	0.025	1(1+0)
External & internal features of the heart (Ana.)	0.025	1(1+0)
Cardiac skeleton & conducting system (Ana.)	0.05	1(1+0)
Pericardium (Ana) (SDL)	0.05	1(1+0)
The thoracic cage & mediastinum (Ana) (SDL)	0.05	1(1+0)
Surface anatomy of the heart & its valves (Ana.)	0.025	1(1+0)
Blood supply of the heart (Ana.)	0.025	1(1+0)
Structure and function of the heart (Phy)	0.025	1(1+0)
Properties of the cardiac muscle 1 (Phy)	0.025	1(1+0)
Thoracic cage, mediastinum (Ana.) (DR)	0.05	2 (0+2)
Properties of the cardiac muscle 2 (Phy)	0.025	1(1+0)
Pericardium & Myocardial pathology 1 (Path.)	0.025	1(1+0)
Pericardium & Myocardial pathology 2 (Path.)	0.025	1(1+0)

The Thoracic cage, mediastinum, (Ana.)	0.025	1(1+0)
Metabolism of the cardiac muscle (Bio.)	0.025	1(1+0)
The Pericardium, Blood supply, external & internal features of the heart (Ana.) (DR)	0.05	2 (0+2)
Endocardial pathology (Path.)	0.025	1(1+0)
Development of the heart (cardiac tube) (Ana.)	0.025	1 (1+0)
Histology of the cardiac muscle& blood vessels (Ana.)	0.025	1(1+0)
Development of the arteries & veins (Ana.)	0.025	1 (1+0)
Histology of the heart and blood vessels Practical: (Ana.) (LAB)	0.05	2 (0+2)
Congenital anomalies of the heart & blood vessels 1 (Ana)	0.025	1 (1+0)
Congenital anomalies of the heart & blood vessels 2 (Ana)	0.025	1 (1+0)
Organisms causing myocarditis (Mic.)	0.025	1 (1+0)
Organisms causing pericarditis (Mic.)	0.025	1 (1+0)
Rheumatic Heart Disease (Seminar)	0.05	2 (0+2)
Cardiac cycle, heart sounds & murmurs 1 (Phys.)	0.025	1 (1+0)
Cardiac cycle, heart sounds & murmurs 2 (Phys.)	0.025	1 (1+0)
ECG -1 (Phy)	0.025	1 (1+0)
ECG -2 (Phy)	0.025	1 (1+0)
Cardiac output-1 (Phys.)	0.025	1 (1+0)
Cardiac output-2 (Phys.)	0.025	1 (1+0)
Physiology lab, ECG (Phys.) (LAB)	0.05	2(0+2)
Properties of the vascular system & VR (Phy)	0.025	1(1+0)
Regulation of peripheral vascular resistance (Phys.)	0.025	1(1+0)
Organisms causing endocarditis (mic.)	0.025	1(1+0)
Regulation of arterial blood pressure-1 (Phys).	0.025	1(1+0)
Regulation of arterial blood pressure-2 (Phys).	0.025	1(1+0)
Aneurysms/ Vasculitis/(Path)	0.025	1(1+0)
Hypertension pathology (Path.)	0.025	1(1+0)
Special circulations 1 (Phys.)	0.025	1(1+0)
Special circulations 2 (Phys.)	0.025	1(1+0)
Organisms causing endocarditis, myocarditis & pericarditis – (LAB)	0.05	2(0+2)
Drug treatment of hypertension-1 (Phar.)	0.025	1(1+0)
Drug treatment of hypertension-2 (Phar.)	0.025	1(1+0)
Practical Physiology, Blood Pressure measurement (Phys.) (LAB)	0.05	2(0+2)
Pulmonary HTN (Seminar)	0.05	2 (0+2)
Effect of drugs on rapid rising blood pressure (Phar.) (LAB)	0.05	2(0+2)
CVS responses to exercise (Phys.)	0.025	1(1+0)
Systemic HTN (Med.)	0.025	1(1+0)
Drug treatment of Ischemic heart diseases (Phar.)	0.025	1(1+0)
Bed side teaching (Med.) (BST)	0.07	3 (0+3)

Atherosclerosis (Path.)	0.025	1(1+0)
Drug treatment of heart failure 1 (Phar.)	0.025	1(1+0)
Drug treatment of heart failure 2 (Phar.)	0.025	1(1+0)
Heart & Blood vessels Tumors (Path)	0.025	1(1+0)
Drug effect on isolated heart (Phar.) (LAB)	0.05	2(0+2)
Ischemic heart diseases 1 (Med.)	0.025	1(1+0)
Ischemic heart diseases 2 (Med.)	0.025	1(1+0)
Oedema SDL	0.025	1(1+0)
Deep Venous Thrombosis (Surg.)	0.025	1(1+0)
Skills Lab, CPR (Med.) (SKILLS LAB)	0.07	3 (0+3)
Shock (Phys.)	0.025	1(1+0)
Capillary fluid Exchange and edema (Phys)	0.025	1(1+0)
Heart & blood vessel tumour (Path.)	0.025	1(1+0)
Antihyperlipideamic drugs (Pharma.)	0.025	1 (1+0)
Drug treatment of Anti-coagulants (Pharm.)	0.025	1 (1+0)
Cardiomyopathies (Seminar)	0.05	2 (0+2)
Hypertension (Med.)	0.025	1 (1+0)
Valvular heart diseases (1) (med.)	0.025	1 (1+0)
Valvular heart diseases (2) (med.)	0.025	1 (1+0)
Infective endocarditis (Med.)	0.025	1 (0+1)
Clinical Assessment of the CVS /X ray (1) (Rad.)	0.025	1 (0+1)
Clinical Assessment of the CVS /X ray (2) (Rad.)	0.025	1 (0+1)
Cardiac Examination, Skill LAB (Med.)	0.07	3 (0+3)
Peripheral Vascular Disease (1) (Surg.)	0.025	1 (1+0)
Peripheral Vascular Disease (2) (Surg.)	0.025	1 (1+0)
Arrhythmias 1 (Med.)	0.025	1 (1+0)
Normal & Abnormal heart sounds, Normal & Abnormal Pulse rate Skill lab (Phys.)	0.07	3 (0+3)
Arrhythmias 2 (Med.)	0.025	1 (1+0)
Prevention of CVS diseases 1(Med.)	0.025	1 (1+0)
Heart failure (Med.)	0.025	1 (1+0)
Congenital heart diseases 1 (Pedia.)	0.025	1 (1+0)
Congenital heart diseases 2 (Pedia.)	0.025	1 (1+0)
Practical pathology	0.025	2 (0+2)
Drug treatment of arrhythmias 1 (Phar.)	0.025	1 (1+0)
Drug treatment of arrhythmias 2 (Phar.)	0.025	1 (1+0)
BST (Pedia.)	0.07	3 (0+3)

## 2. Course components (total contact and credit hours per semester):

	Lectures	PBL sessions	Seminar	Laboratory	SDL	Skill Lab	BST	Total
Contact Hours	68	8	3	18	3	9	6	115
Credit	3.78	0.22	0.17	0.50	0.06	0.0556	0.0370	5

3. Additional private study/learning hours expected for students per week: 25-35

## 4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

**First**, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge: By the end of this course, the student should be able to:		
1.1	Recognize normal structure, function, development and metabolic activity of the cardiovascular system and its relevant disorders.	1. Lectures. 2. Seminars. 3. PBL sessions. 4. Self directed learning. 5. Practical classes	1. Continuous assessment. (Quizzes, Seminars & BPL assessment sheets) 2. End of course exam. (MCQs, OSPE/OSCE)
1.2	Describe the pharmacological role in the management of the cardiovascular system disorders.		
2.0	Cognitive Skills: By the end of this course, the student should be able to:		
2.1	Interpret the patient history, examination, radiological and lab results in an organized and informative manner.	1. Interactive lectures. 2. Seminars. 3. PBL sessions 4. Self directed learning. 5. Practical classes that include brain storming problem solving questions. 6. Bedside teaching	1. Continuous assessment. (Quizzes, Seminars & BPL assessment sheets) 2. End of course exam. (MCQs, OSPE/ OSCE)
2.2	Discuss the management of common disease of cardiovascular and disorders		
3.0	Interpersonal Skills & Responsibility: By the end of the course the student should be able to:		
3.1	Show a positive interaction between each other during seminars & PBL sessions.	1. Seminars. 2. PBL sessions	Continuous assessment. (seminars , PBL & assessment sheets)
4.0	Communication, Information Technology, Numerical: By the end of the course the student should be able to:		
4.1	Demonstrate efficiently the capacity to use	1. Group seminars. 2. PBL sessions.	Continuous assessment. (seminars , PBL &



	the different available knowledge resources.		assessment sheets)
<b>5.0</b>	<b>Psychomotor: By the end of the course the student should be able to:</b>		
5.1	Demonstrate the practical parts of the basic medical sciences related to the cardiovascular system	1. Bedside teaching. 2. Practical classes. 3. Skills lab.	End of course exam (OSPE/ OSCE).
5.2	Perform basic clinical assessment of the cardiovascular system.		

<u>Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching</u>					
NQF Learning Domains		Suggested Verbs			
Knowledge		list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write			
Cognitive Skills		estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise			
Interpersonal Skills & Responsibility		demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write			
Communication, Information Technology, Numerical		demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize			
Psychomotor		demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct			
Suggested <u>verbs not to use</u> when writing measurable and assessable learning outcomes are as follows:					
Consider	Maximize	Continue	Review	Ensure	Enlarge
Understand					
Maintain	Reflect	Examine	Strengthen	Explore	Encourage
Deepen					
Some of these verbs can be used if tied to specific actions or quantification.					
Suggested assessment methods and teaching strategies are:					
According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation.					

**Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.**

**Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.**

### 5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task	Week due	Proportion of Final Assessment
1	First quiz	2 <sup>nd</sup>	20 %
2	Second quiz	3 <sup>rd</sup>	
3	Third quiz	4 <sup>th</sup>	
4	Seminar evaluation	Weeks 2-4	5 %
5	PBL sessions evaluation	Weeks 1-4	5 %
6	End of course theory exam: - MCQs = 50% - OSPE/ OSCE =20%	5th	70%

### D. Student Academic Counseling and Support:

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)
  - a. Allocation of office hours by the departments (announced on the website or labelled on staff offices)
  - b. Academic supervision ( each staff member has small group students for academic supervision)



## E. Learning Resources

### 1. List Required Textbooks

#### A. Anatomy, Embryology And Histology:

1. Grant's Atlas of anatomy. Anne M.R Angur , Arthur F dalley, 13<sup>th</sup> edition 2016
2. Langman's Medical embryology. T.W. Sadler 12<sup>th</sup> edition, 2012.
3. Janguiera's Basic Histology: text and atlas .Anthony L. Mescher, 13<sup>th</sup> edition, 2013.

#### B. Physiology:

1. Guyton Textbook of Medical Physiology, John E. Hall, 13<sup>th</sup> edition, 2016.

#### C. Biochemistry:

1. Harpers Illustrated Biochemistry. Robert K. Murray et al, 29<sup>th</sup> edition, 2012.

#### D. Pharmacology:

1. Goodman and Gillman. The Pharmacological basis of Therapeutics. New York: McGraw-Hill, 12<sup>th</sup> edition. 2011.

#### E. Pathology:

1. Robbins and Cotran Pathologic Basis of disease. Kumar etl al. 9<sup>th</sup> edition, 2015

#### F. Microbiology:

1. Jawetz, Melnick & Adelberg's Medical Microbiology, Karen C. Carroll et al, 27<sup>th</sup> edition. 2016.

#### H. Medicine:

1. Davidson's essentials of medicine , J. Alastair Innes. 2<sup>nd</sup> edition. 2016

#### J. Surgery:

1. Bailey & love's: Short Practice of Surgery. Norman S Williams et al. 26<sup>th</sup> edition. 2013

### 2. List Essential References Materials (Journals, Reports, etc.)

- <http://www.scimagojr.com/>

### 3. List of Recommended Textbooks and Reference Material (Journals, Reports, etc)

- Gray's Anatomy, Susan Standring et al, 41<sup>st</sup> edition, 2015.
- Ganong's Review of Medical Physiology, Kim E. Barrett et al, 25<sup>th</sup> edition, 2016.
- Katzung, Anthony J. Trevor. 13<sup>th</sup> edition, 2015.
- Rubin's Pathology. Clinicopathologic foundation of medicine, Rubin et al, 6<sup>th</sup> edition, 2012.
- Kumar & Clark's Clinical Medicine, Kumar, Clark, 8<sup>th</sup> edition, 2012.
- Merckell and Voge's Medical Parasitology, David T. John et al, 9<sup>th</sup> edition. 2006.
- Bailey & love's: Short Practice of Surgery. Norman S Williams et al. 26<sup>th</sup> edition. 2013
- Apley and Solomon Concise Systems of Orthopaedics and Ttrauma, Louis Solomon et al, 4<sup>th</sup> edition, 2014.

### 4. Electronic Materials, Websites etc:

- <http://www.uptodate.com/home/index.html>
- <http://www.jpeds.com>
- <http://pediatrics.aappublications.org>
- Saudi Digital Library.

## F. Facilities Required

### 1. Accommodation:

1. Lecture room suitable for accommodation of the registered number students.
2. Dissection room (DR), Laboratories: physiology, biochemistry, microbiology, pathology, pharmacology and skill lab, all suitable for the registered number of students.
3. Teaching hospital for bedside teaching.

### 2. Computing resources:

Computers, multimedia in lecture room, PBL rooms and laboratories

### 3. Other resources:

Library supplied with reference, textbooks, and electronic resources.

## G Course Evaluation and Improvement Processes

### 1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

1. Continuously throughout the block by direct interviewing of the students.
2. End of block feedback questionnaire

### 2. Other Strategies for Evaluation of Teaching :

1. Feedback from colleagues.
2. Class observation by supervisors.

### 3. Processes for Improvement of Teaching:

1. Continuous updating of course contents.
2. Regular meetings where problems are discussed and recommendations made.
3. Workshops on teaching methods.
4. Review of recommended teaching strategies.

### 4. Processes for Verifying Standards of Student Achievement:

1. Arrange with another institution to have common test items included in an exam and compare marks given.
2. Invitation of an external examiner on regular basis.

### 5. Action planning for improvement:

There will be an evaluation at the end of the block to assess the course execution, outcome and feedback from different sources to arrive at an appropriate modifications needed if any.

**Name of instructor:** Dr. Ahmed Elsir Mokhtar – Course coordinator

**Signature:** \_\_\_\_\_ **Date Report completed:** \_\_\_\_\_

**Name of field experience teaching staff:**

**Program coordinator:**

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_