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DEPARTMENT OF PHYSIOLOGY
COLLEGE OF MEDICINE
KING SAUD UNIVERSITY

PHYSIOLOGY COURSE CURRICULUM
PCOL 282

RECOMMENDED TEXTBOOK:

Human mechanism of diseases(gyton)

REFERENCE BOOKS:

- **Review of Medical Physiology by Ganong, 21st edition**

ADVICE TO STUDENTS

This booklet contains the whole semester program including the course schedule, lecture contents and details of all examinations for the academic year 1428-1429 (2007-2008). You are advised to keep this booklet always with you for reference.

Try to practice the following methodical approach:

1- Read textbooks as shown in the ”Reference” column of course schedule for each lecture before coming to class.

2- Soon after the class, check for yourself whether you have been able to get the information you need the least.

3- Regularly attend all classes and practicals and regularly assess yourself whether you are running along with the program or lagging behind.

4- You must actively participate in all the activities in the laboratory.

5- You must feel free to contact any of the teaching staff or course organizer, if you have questions or difficulties in the course, or you would like additional information.

6- You are advised not to depend on handouts.

(A) LECTURES (2 Hours Every Week)

Days	Time	Lecture Theatre
Monday	**10:00 am -12:00**	

(B) PRACTICALS

Days	Time	Venue
Monday	**12--3:00 pm**	**Physiology Practical Laboratory**

(C) STUDENT'S ACTIVITY (CD, Seminar, Tutorial, Data Analysis)

Day	Date	Time	Venue
Monday		**10 am -12 am**	

(D) EXAMINATIONS (5 Exams per Semester)

Name of Exam	Marks Total 100	Day	Date	Week
First Continuous Assessment	**20**	Monday	**16-3-29**	**6**
Second Continuous Assessment	**25**	Monday	**22-4-29**	**11**
Students Activity Assessment	**5**	Monday	**21-5-29**	**15**
Practical Examination	**10**	Monday	**28-5-29**	**16**
Final Written Examination	**40**	Monday	**5-6-29**	**17**

(E) Course Contents (6 Units)

S. No.	Unit		Lectures
1	**Introduction and Cell Physiology**		**2**
2	Blood		**6**
3	**Autonomic**		**2**
	Nerve and Muscle		**4**
4	**Respiratory System**		**4**
5	**Heart and Circulation**		**6**

UNIT –(I)INTRODUCTION AND CELL PHYSIOLOGY

DATE	TOPIC	
WK(1) 11-2-29	**Orientation of Physiology Department &Introduction:** • **Physiology Course** • **Evaluation**	
	Cell physiology **Organells & Cell membrane composition& functions**	
	Body Fluids • **Composition** • **Compartments** * **Dehydration signs** **-Transport across the cell membrane** -transport princibles & mechanisms • **Diffusion & Osmosis &Carrier-Mediated Transport**	

UNIT – II BLOOD PHYSIOLOGY

DATE	TOPIC	
WK(2) 18-2- 29	**Composition of the Blood** • **General functions** • **Red blood cells** • **Erythropoiesis** • **Factors affecting it.** • **Anemia and its Types**	
WK(3) 25-2-29	• **WBCs** • **Types&counts** • **Functions** • **Blood groups** **ABO System** • **Blood Transfusion Reactions** **. Rh Factor**	
Practical(1)	**RBC / WBC / Hb% & Hct** **Clinical Application**	

WK(4) **2-3-29**	**Hemostasis:** **Steps** **Mechanisms** **Abnormalities**	
Practical(2)	**Blood Groups, Bleeding Time, Clotting Time, ESR**	

UNIT.III.Autonomic Nervous System

DATE	TOPIC	REFERENCE
WK(5) **9-3-29**	**Organization of Autonomic Nervous System** • **Autonomic Neurons** • **Visceral Effector Organs** **Somatic and Autonomic Reflexes**	
	Divisions of the Autonomic Nervous System • **Sympathetic Division** • **Parasympathetic Division**	
	Functions of the Autonomic Nervous System • **Sympathetic Effects** • **Parasympathetic Effects**	
	. Adrenergic and Cholinergic Synaptic Transmission **. Responses to Adrenergic Stimulation** **. Responses to Cholinergic Stimulation** **. Effect of chemicals on autonomic receptors**	
WK(6) **16-3-29**	First Continuous Assessment Examination	

UNIT – IV…NERVE AND MUSCLE PHYSIOLOGY-

WK(7) **23-3-29**	**Neurons** • **Structure&function** The Membrane Potential • **Resting Membrane Potential& its ionic basis** • **Action Potentials** • **Difinition& ionic bases** •	
WK(8) **1-4-29**	**Skeletal Muscle** • **Structure& Anatomy** • **Molecular bases of Contraction .Excitation-Contraction Coupling** •	
Practical (3)	**Nerve action potential**	

UNIT – V Respiration.

WK (9) **8-4-29**	**Structure & function of the Respiratory System.** **Physical Aspects of Ventilation.** **Pulmonary volumes& capacities** **Factors affecting gas exchange** .	
WK (10) **15-4-29**	• **Transport of gases** • **Regulation of Breathing**	
WK (11) **22-4-29**	• **Second Continuous Assessment Examination**	

UNIT – VI/ HEART & CIRCULATION :

DAY	TOPIC	
WK(12) 29-4-29	• **Histology & anatomy of the heart and circulatory system** • **-Cardiac properties** • **contractility,rhythmicity,conductivity,excitability**	

WK(13) 7-5-29	**CARDIAC CYCLE:-** **-phases & pressure changes of cardiac cycle** **-events** **-cardiac output (definition& factors affecting)**	
Practical (5)	**ECG**	
WK(14) 14-5-29	**Blood Pressure & heart sounds** **-Definition** **-Regulation** **-Hypertension**	
Practical (5)	**heart sound & Blood Pressure**	
WK(15) 21-5-29	**Student activity**	
WK(16) 28-5-29	**Practical Exam**	
WK(17) 5-6-29	**Final Written Exam**	

PRACTICALS SCHEDULE

S. No.	Date	Title	Facilitator
1	WK(3) 25-2-29	**RBCs, WBCs count, Hb%, Haematocrit** **Clinical Application**	**Facilitators**

2	**WK(4)** 2-3-29	**Blood groups, Bleeding time, Clotting time, ESR**	**Facilitators**
3	WK(8) **1-4-29**	**Action potentials & simple muscle twitch, Effect of Chemicals on Heart**	**Facilitators**
4	**WK(13)** **7-5-29**	**E.C.G.**	**Facilitators**
5	**WK(14)** **14-5-29**	**Blood pressure & heart sounds**	**Facilitators**
	WK(16) **28-5-29**	**Practical Exam**	

PROPOSED TOPICS FOR PRESENTATION

1-Physiologic Anatomy of Autonomic nervous System
2-Autonomic Receptors
3-Effects of Sympathetic Nervous System
4-Effects of Parasympathetic Nervous System
5-Neuromuscular Junction
6-Properties of Cardiac Muscle
7-Regulation of breathing
8-Transport of gases