PLACEMENT:I SEMESTER

THEORY: 3Credits (60hours)

DESCRIPTION: The course is designed to assists student to acquire comprehensive knowledge of the normal functions of the organ systems of the human body to facilitate understanding of physiological basis of health, identify alteration in functions and provide the student with the necessary physiological knowledge to practice nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Developunderstandingofthenormalfunctioningofvariousorgansystemsofthebody.
2. Identifytherelativecontributionofeachorgansystemtowardsmaintenanceofhomeostasis.
3. Describe the effect of alterations in functions.
4. Apply knowledge of physiological basis to analyze clinical situations and the rapeuticapplications.

COURSEOUTLINE T–Theory

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/Learing Activities	Assessment Methods
I	4(T)	Describe thephysiology ofcell,tissues,membranes andglands	**General Physiology–Basic concepts** • Cell physiology including transportation across cell membrane • Body fluidcompartments,Distributionoftotalbodyfluid,intracellularandextracellularcompartments, major electrolytes andmaintenanceof homeostasis • Cellcycle • Tissue–formation,repair • Membranes and glands –functions • Applicationandimplicationinnursing	• Review – discussion • Lecture cumDiscussion • Videodemonstrations	• Quiz • MCQ • Shortanswer
II	6(T)	Describe thehysiology and mechanism ofrespiration Identify themuscles ofrespiration andexamine theircontribution to themechanism ofbreathing	**Respiratorysystem** • Functionsofrespiratoryorgans • Physiologyofrespiration • Pulmonarycirculation–functionalfeatures • Pulmonaryventilation,exchangeofgases • Carriage of oxygen and carbon-dioxide,Exchangeof gasesintissue • Regulationofrespiration • Hypoxia,cyanosis,dyspnea,periodicbreathing • Respiratorychangesduringexercise • Applicationandimplicationinnursing	• Lecture • Videoslides	• Essay • Shortanswer • MCQ

III	8(T)	Describe thefunctions ofdigestivesy stem	**Digestive system** • Functionsoftheorgansofdigestivetract • Saliva– composition,regulationofsecretionan dfunctionsof saliva • Composition and function of gastric juice,mechanismandregulationofgastri csecretion • Compositionofpancreaticjuice,func tion,regulationof pancreaticsecretion • Functionsofliver,gallbladderandpancre as • Compositionofbileandfunction • Secretionandfunctionofsmallandla rgeintestine • Movementsofalimentarytract • Digestioninmouth,stomach,smallintes tine,largeintestine,absorption offood • Applicationandimplicationsinnursing	• Lecture cum Discussion • Video slides	• Essay • Shortanswer • MCQ
IV	6(T)	Explain thefunctionsof the heart, andphysiolog y ofcirculation	Functionsofheart,conductionsystem, cardiac cycle, Stroke volume and cardiacoutput Bloodpressure andPulse Circulation– principles,factorsinfluencingbloodpressu re, pulse • Coronarycirculation,Pulmonar yandsystemiccirculation • Heartrate –regulationofheartrate • Normalvalueandvariations • Cardiovascularhomeostasisinexercis eandposture • Applicationandimplicationinnursing	• Lecture • Discussion • Video/Slides	• Shortanswer MCQ
V	5(T)	Describe thecomposit ion andfunction sofblood	**Blood** • Blood– Functions,Physicalcharacteristics • Formationofbloodcells	• Lecture • Discussion Videos	• Essay • Shortanswer MCQ

			• Erythropoiesis– FunctionsofRBC,RBClifecycle • WBC–types,functions • Platelets– Functionandproductionofplatele ts • Clottingmechanismofblood,clottingt ime,bleedingtime, PTT • Hemostasis– roleofvasoconstriction,plateletplug formation in hemostasis, coagulationfactors, intrinsic and extrinsic pathways ofcoagulation • Bloodgroupsand types • Functionsofreticuloendothelialsy stem,immunity Applicationinnursing		
VI	5(T)	Identify the majorendocr ine glandsand describe theirfunctio ns	**TheEndocrinesystem** • FunctionsandhormonesofPin ealGland,Pituitary gland, Thyroid, Parathyroid,Thymus,Pancreasand Adrenalglands. • Otherhormones • Alterationsindisease Applicationandimplicationinnursing	• Lecture Explain usingcharts	• Shortanswer MCQ
VII	4(T)	Describe thestructure ofvarious sensoryorga ns	**TheSensoryOrgans** • Functionsofskin • Vision,hearing,tasteandsmell • Errorsofrefraction, agingchanges Applicationandimplicationsinnursing	• Lecture Video	• Shortanswer MCQ
VIII	6(T)	Describe thefunctionsof bones, joints,various types ofmuscles, itsspecial propertiesand nervessupplyi ngthem	**Musculoskeletalsystem** • Bones – Functions, movements of bones ofaxialandappendicularskeleton,Bone healing • Jointsandjointmovements • Alterationofjointdisease • PropertiesandFunctionsofskeletalmusc	• Discussion • Video presentation	• Shortanswer • MCQ

			les–mechanismof musclecontraction • Structureandpropertiesofcardiacmuscles andsmoothmuscles Applicationandimplicationinnursing		
IX	4(T)	Describe thephysiology ofrenalsystem	**Renalsystem** • Functionsofkidneyinmaintaininghomeostasis • GFR • Functionsofureters,bladderandurethra • Micturition • Regulationofrenalfunction Applicationandimplicationinnursing	• Lecture • Charts and models	• Shortanswer • MCQ
X	4(T)	Describe thestructure ofreproductivesystem	**TheReproductivesystem** • Femalereproductivesystem– Menstrualcycle, function and hormones of ovary,oogenesis, fertilization, implantation,Functionsof breast • Malereproductivesystem– Spermatogenesis,hormonesand itsfunctions, semen Applicationandimplicationinprovidingnursingcare	• Lecture • Explain using charts, models, specimens	• Short answer • MCQ
XI	8(T)	Describe thefunctions ofbrain, physiologyof nerve stimulus,reflexes, cranialandspinalnerves	• **Nervoussystem** • Overviewofnervoussystem • Reviewoftypes,structureandfunctionsofneurons • Nerveimpulse • ReviewfunctionsofBrain-Medulla,Pons,Cerebrum,Cerebellum • SensoryandMotorNervoussystem • PeripheralNervoussystem • AutonomicNervoussystem • LimbicsystemandhighermentalFunctions-Hippocampus,Thalamus,Hypothalamus	• Lecture cumDiscussion • Videoslides	• Brief structure dessays • Shortanswer • MCQ • Criticalreflection

			• Vestibularapparatus • Functionsofcranialnerves • Autonomicfunctions PhysiologyofPain-somatic,visceralandreferred • Reflexes • CSFformation,composition,circulationofCSF, blood brain barrier and blood CSFbarrier Applicationandimplicationinnursing		

Note: Few lab hours can be plannedforcreditvisits,observationandhandling(lessthan1 labhoursarenot specifiedseparately)

DISTRIBUTION OF TEACHING HOURS

STRATEGY		**Teaching hours**	
Didactic	Lectures	54	60
	Lab Hrs	06	
	Tutorials	03	
Total			60 Hrs.

TOPICS & OUTCOMES IN GENERAL HUMAN PHYSIOLOGY

Subjects	Number of Themes	Number of outcomes
General Human Physiology	11	60

DISTRIBUTION OF THEORY HOURS

S.N.	Theme	Topics	Teaching hrs
1	**GeneralPhysiology– Basicconcepts**	• Cellphysiologyincludingtransportationacrosscellmembrane,Bodyfluidcompartments,Distributionoftotalbodyfluid,intracellularandextracellularcompartments, major electrolytes andmaintenanceofhomeostasisCellcycleTissue–formation,repair Membranesand glands – functionsApplicationandimplicationinnursing	4 hours
2	**Respiratorysystem**	• Functionsofrespiratoryorgans,Physiologyofrespiration • Pulmonarycirculation– functionalfeatures,Pulmonaryventilation,exchangeofgasesCarriage of oxygen and carbon-dioxide,Exchangeofgasesintissue,Regulationofrespiration • Hypoxia,cyanosis,dyspnea,periodicbreathingRespiratorychangesduringexercise • Applicationandimplicationinnursing	6hours
3	**Digestivesystem**	• • Functionsoftheorgansofdigestivetract,Saliva– composition,regulationofsecretionandfunctions of saliva • Composition and function of gastric juice,mechanismandregulationofgastricsecretion,Compositionofpancreaticjuice,unction,regulationof pancreaticsecretion,Functionsofliver,gallbladderandpancreas,Compositionofbileandfunction, Secretionandfunctionofsmallandlargeintestine, Movementsofalimentarytract,Digestioninmouth,stomach,smallintestine,largeintestine,absorption offood	8hours

		Applicationandimplicationsinnursing	
4	**Circulatory and Lymphaticsyste m**	• Functionsofheart,conductionsystem, cardiac cycle, Stroke volume and cardiacoutput • Bloodpressure andPulse • Circulation– principles,factorsinfluencingbloodpressure, pulse • Coronarycirculation,Pulmonaryandsyst emiccirculation • Heartrate –regulationofheartrate • Normalvalueandvariations • Cardiovascularhomeostasisinexerciseandpos ture • Applicationandimplicationinnursing	6hours
5	**Blood**	• Blood–Functions,Physicalcharacteristics • Formationofbloodcells • Erythropoiesis– FunctionsofRBC,RBClifecycle • WBC–types,functions • Platelets– Functionandproductionofplatelets • Clottingmechanismofblood,clottingtime,blee dingtime, PTT • Hemostasis– roleofvasoconstriction,plateletplug formation in hemostasis, coagulationfactors, intrinsic and extrinsic pathways ofcoagulation • Bloodgroupsand types • Functionsofreticuloendothelialsystem,im munity • Applicationinnursing	5hours
6	**TheEndocrinesy stem**	• FunctionsandhormonesofPinealGland,Pitui tary gland, Thyroid, Parathyroid,Thymus,PancreasandAdrenal glands.	5hous

		• Otherhormones • Alterationsindisease • Applicationandimplicationinnursing	
7	**TheSensoryOrgans**	• Functionsofskin • Vision,hearing,tasteandsmell • Errorsofrefraction, agingchanges • Applicationandimplicationsinnursing	4hours
8	**Musculoskeletal system**	• Bones – Functions, movements of bones ofaxialandappendicularskeleton,Bonehealing • Jointsandjointmovements • Alterationofjointdisease • PropertiesandFunctionsofskeletalmuscles– mechanismof musclecontraction • Structureandpropertiesofcardiacmusclesand smoothmuscles • Applicationandimplicationinnursing	6hours
9	**Renalsystem**	• Functionsofkidneyinmaintaininghom eostasis • GFR • Functionsofureters,bladderandurethra • Micturition • Regulationofrenalfunction • Applicationandimplicationinnursing	4hours
10	**TheReproductivesystem**	• Femalereproductivesystem– Menstrualcycle, function and hormones of ovary,oogenesis, fertilization, implantation,Functionsof breast • Malereproductivesystem– Spermatogenesis,hormonesand itsfunctions, semen • Applicationandimplicationinprovidingnursingcare	4hours
11	**Nervoussystem**	• Overviewofnervoussystem • Reviewoftypes,structureandfunctionsofneurons	8hours

		• Nerveimpulse • ReviewfunctionsofBrain-Medulla,Pons,Cerebrum,Cerebellum • SensoryandMotorNervoussystem • PeripheralNervoussystem • AutonomicNervoussystem • LimbicsystemandhighermentalFunctions-Hippocampus,Thalamus,Hypothalamus • Vestibularapparatus • Functionsofcranialnerves • Autonomicfunctions PhysiologyofPain-somatic,visceralandreferred	
Total hours			**60 hours**

GENERAL HUMAN PHYSIOLOGY

Theme and total hours allotted 60 hrs.	**Objectives**	Topic	**Code No**	**Competencies**	**Core Competencies**		**Non-Core Competencies**	Hrs.
					Must know	**Desirable to know**	**Nice to know**	
I 4(T)	At the end of unit students are able to **Knowledge:** Know the functions of sell, tissue, membranes, glands, tissue formation, and repair. **Skill :** Differentiate the alterations in the body functions	Cell physiology	PHYS110:I SEM1.1	Describe the Physiology of cell tissue-formation, repair	Physiology of cell Tissue-formation, repair			1hour
			PHYS110:I SEM 1.2	Explain the functions of membrane	Membranes			1 hour
			PHYS110:I SEM 1.3	Describe the functions of glands		Glands		1 hour
			PHYS110:I SEM 1.4	Explain alterations in disease. applications and implications in nursing		Alterations in disease. Applications and implications in nursing		1 hour

Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11

PHYS110:ISEM1.1 Describe the Physiology of celltissue-formation, repair		3	3	3	2	2	2	2	2	2	2	3
PHYS110:ISEM 1.2 Explain the functions of membrane		3	3	2	2	3	2	3	2	3	2	3
PHYS110:ISEM 1.3 Describe the functions of glands		2	3	3	2	3	3	2	3	2	3	2
PHYS110:ISEM 1.4 Explain alterations in disease. applications and implications in nursing		2	3	3	3	3	3	2	2	2	2	3
II 6(T)	At the end of unit students are able to **Knowledge:** Acquire knowledge regarding functions of respiratory organs. Describe pulmonary ventilation, mechanism of respiration. **Skill:** Provide care for the patients with ventilator support. **Attitude:** Incorporate this knowledge in nursing practice	**Respiratorysystem**	PHYS110:ISEM 2.1	Explain the Functions of respiratory organs ,		Functions ofrespiratory organs				1hour		
			PHYS110:ISEM 2.2	Physiology of respiration		Physiologyof respiration				1hour		
			PHYS110:ISEM 2.3	Pulmonarycirculation– functionalfeatures Pulmonaryventilation, exchangeofgases		Pulmonarycirculation– functionalfeatures Pulmonaryventilation,exchangeofgases				1hour		

			PHYS110:ISEM 2.4	Carriage of oxygen and carbon-dioxide, Exchangeof gasesintissue Regulationofrespiration		Carriage of oxygen and carbon-dioxide, Exchangeof gasesintissue Regulationof respiration			1hour			
			PHYS110:ISEM 2.5	Describe the hypoxia,cyanosisdysnea periodic breathing			Hypoxia,cyanois, dysnea,periodicbreathing RespiratoryChangesduring exercise			1hour		
			PHYS110:ISEM 2.6	Explain Applicationandimplicationinnursing					Applicationandimplicationinnursing		1hour	
Competence /Course outcome		Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner
		PO1	PO2	PO3`	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PHYS110:ISEM 2.1 Explain the Functions of respiratory organs ,		2	3	2	2	3	2	2	2	3	2	2
PHYS110:ISEM 2.2 Physiology of respiration		2	2	3	3	2	2	2	2	3	3	3

PHYS110:ISEM 2.3		2	2	2	2	3	2	3	2	2	2	2
PHYS110:ISEM 2.4		2	2	2	2	2	2	2	2	2	2	2
PHYS110:ISEM 2.5		2	2	2	2	3	2	2	2	2	2	2
PHYS110:ISEM 2.6		2	2	3	2	2	2	2	3	2	3	2
III 8 (T)	At the end of unit students are able to **Knowledge:** Acquire knowledge regarding functions of organs of digestive system. **Attitude:** Incorporate this knowledge in nursing practice	**Digestive system**	PHYS110:ISEM 3.1	Describe the Functionsoftheorgansofdigestivetract Saliva–composition,regulationofsecretionandfunctionsof saliva		Functionsoftheorgansofdigestivetract, Saliva–composition, regulationofsecretionandfunctionsof saliva					1hour	
			PHYS110:ISEM 3.2	Explain the Composition and function of gastric juice,mechanism and regulation of gastric secretion,		Composition and function of gastric juice,mechanismandregulationofgastricsecretion					1hour	
			PHYS110:ISEM 3.3	Explain the Functionsofliver,gallbladderandpancreas		Functionsofliver,gallbladderandpancreas					1hour	

			PHYS110:ISEM 3.4	Explain the Compositionofbileandfunction		Composition ofbileandfunction			1hour			
			PHYS110:ISEM 3.5	Describe the Secretionandfunctionofsmallandlargeintestine		Describe the Secretionandfunctionofsmallandlargeintestine			1hour			
			PHYS110:ISEM 3.6	Explain the Movementsofalimentarytract			Movementsofalimentarytract			1hour		
			PHYS110:ISEM 3.7	Describe the Digestioninmouth, stomach,smallintestine,largeintestine,absorption offood			Digestioninmouth,stomach,smallintestine,largeintestine,absorption offood			1hour		
			PHYS110:ISEM 3.8	Explain the Applicationandimplicationsinnursing					Applicationand implication innursing	1hour		
Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner	

PHYS110:ISEM 3.1 Describe the Functionsoftheorgansofdigestivetract Saliva–composition,regulationofsecretionandfunctionsof saliva	2	**3**	2	3	2	2	3	2	2	2	2
PHYS110:ISEM 3.2 Explain the Functionsofliver,gallbladderandpancreas	2	**3**	3	2	2	2	2	2	2	3	3
PHYS110:ISEM 3.3 Explain the Functionsofliver,gallbladderandpancreas	2	**2**	3	2	2	2	2	2	2	3	3
PHYS110:ISEM 3.4 Explain the Compositionofbileandfunction	2	**2**	3	2	2	2	3	2	2	2	2
PHYS110:ISEM 3.5 Describe the Secretionandfunctionofsmallandlargeintestine	2	**3**	2	2	2	2	2	3	3	3	3

PHYS110:ISEM 3.6 Explain the Movementsofalimentarytract	2	**2**	2	3	3	3	2	2	2	2	2
PHYS110:ISEM 3.7 Describe the Digestioninmouth,stomach,smallintestine,largeintestine,absorption offood	2	**2**	3	3	3	2	2	2	2	2	2
PHYS110:ISEM 3.8 Explain the Applicationandimplicationsinnursing	2	**2**	2	2	2	2	2	2	2	2	2
IV 6 (T)	At the end of unit students are able to **Knowledge:** Understand blood formation, composition, blood groups and	**CirculatoryandLymphaticsystem**	PHYS110:ISEM 4.1	Explain the Functionsofheart,conductionsystem,cardiac cycle, Stroke volume and cardiacoutput		Functionsofheart,conductionsystem,cardiac cycle, Stroke volume and cardiacoutput			1 hour		
			PHYS110:ISEM 4.2	Describe the BloodpressureandPulse.Circulation–principles,factorsinfluencingbloodpressure, pulse		Bloodpressureand Pulse.Circulation–principles,factorsinfluencingbloodpress			1 hour		

	blood coagulation, Understand the functions of antigens, antibodies, and cytokines and Describe the circulation of lymph. **Attitude:** improving quality of care of patients				ure, pulse						
			PHYS110:ISEM 4.3	Explain the Coronary circuation,Pulmonaryandsystemiccirculation	Coronary circulation Pulmonaryandsystemiccirculation					1 hour	
			PHYS110:ISEM 4.4	Describe the Heartrate – regulationofheartrate .Normalvalueandvariations	Heartrate – regulationofheartrate .Normalvalueandvariations					1hour	
			PHYS110:ISEM 4.5	Explain the Cardiovascularhomeostasisinexerciseandposture		Cardiovascularhomeostasisinexerciseandposture				1 hour	
			PHYS110:ISEM 4.6	Describe the Applicationandimplicationinnursing				Applicationandimplicationinnursing		1 hour	
Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner
PHYS110:ISEM 4.1 Explain the Functionsofheart, conductionsystem ,cardiac cycle, Stroke volume	2	2	2	3	3	3	2	3	2	3	2

and cardiacoutput											
PHYS110:ISEM 4.2 Describe the Bloodpressureand Pulse.Circulation–principles,factorsinfluencingbloodpressure, pulse	2	3	2	3	2	2	2	2	2	2	2
PHYS110:ISEM 4.3 Explain the Coronary circuation,Pulmonaryandsystemiccirculation	3	3	3	3	2	2	2	2	2	2	3
PHYS110:ISEM 4.4 Describe the Heartrate – regulationofheartrate .Normalvalueand variations	2	3	2	2	2	2	2	3	3	2	2
PHYS110:ISEM 4.5 Explain the Cardiovascularhomeostasisinexerciseandposture	2	3	3	2	3	2	2	2	2	2	3
PHYS110:ISEM 4.6 Describe the Applicationandimplicationinnursing	2	2	2	3	3	2	2	2	2	2	2

V 5(T)	At the end of unit students are able to **Knowledge:** Understand blood formation, composition, blood groups and blood coagulation. **Skill:** Perform blood grouping, hemoglobin percentage,	Blood	PHYS110:ISEM 5.1	Describe the Blood–Functions,Physicalcharacteristics Formationofbloodcells Erythropoiesis–FunctionsofRBC, RBClifecycle	Blood–Functions,Physicalcharacteristics Formation of blood cells Erythropoiesis–Functionsof RBC,RBClifecycle					1 hour	
			PHYS110:ISEM 5.2	Describe the WBC–types,functions Platelets–Functionandproductionofplatelets	WBC–types,functions Platelets–Function and production of platelets					1 hour	
			PHYS110:ISEM 5.3	Illustrate Clottingmechanismofblood,clottingtime,bleedingtime, PTT Hemostasis–roleofvasoconstriction,Functionsofreticulo	Clottingmechanismof blood,clottingtime,bleedingtime, PTT Hemostasis–roleofva					1 hours	

				endothelialsystem,immunity	soconstriction,Functions ofreticuloendothelialsystem,immunity						
			PHYS110:ISEM 5.4	Describe Applicationinnursing plateletplug formation in hemostasis, coagulationfactors,		Applicationinnursing plateletplug formation in hemostasis, coagulationfactors, Intrinsic and extrinsic pathways ofcoagulation Bloodgroupsand types			1hour		
			PHYS110:ISEM 5.5	Describe Functionsofreticuloendothelialsystem,immunity Applicationinnursing				Functionsofreticuloendothelialsystem,immunity Applicationinnursing		1 hour	
Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Team work and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner
PHYS110:ISEM 5.1 Describe the	2	2	2	3	2	3	2	3	2	3	3

Blood– Functions,Physicalcharacteristics Formationofblood cells Erythropoiesis– FunctionsofRBC, RBClifecycle											
PHYS110:ISEM 5.2 Describe the WBC– types,functions Platelets– Functionandproductionofplatelets	2	3	2	2	3	2	2	3	2	2	2
PHYS110:ISEM 5.3 Illustrate Clottingmechanismofblood,clottingtime,bleedingtime, PTT Hemostasis– roleofvasoconstriction,Functionsofreticuloendothelialsystem,immunity	2	2	2	2	2	3	2	2	3	2	3
PHYS110:ISEM 5.4 Describe	2	3	2	2	2	2	2	2	2	2	2

Applicationinnursing plateletplug formation in hemostasis, coagulationfactors,											
PHYS110:ISEM 5.5 Describe Functionsofreticuloendothelialsystem, immunity Applicationinnursing	2	2	2	3	2	2	3	2	3	2	3
VI 5 (T)	At the end of unit students are able to **Knowledge:** Understand the functions of skin, eye, ear, nose and tongue. **Attitude:**	**TheEndocrinesystem**	PHYS110:ISEM 6.1	Explain the FunctionsandhormonesofPinealGland,Pituitary gland,	FunctionsandhormonesofPinealGland,Pituitary gland,					1 hour	
			PHYS110:ISEM 6.2	Describe the Thyroid, Parathyroid, Thymus,	Thyroid, Parathyroid, Thymus,					1 hour	
			PHYS110:ISEM 6.3	Explain PancreasandAdrenalglands	PancreasandAdrenalglands					1 hour	
			PHYS110:ISEM 6.4	Explain the Otherhormones		.Other hormones				1 hour	

	Incorporate this knowledge in nursing practice		PHYS110:ISEM 6.5	Explain the Alterationsindisease Applicationandimplicationinnursing		Alterationsindisease Applicationandimplicationinnursing 1hours				1hour	
Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner
PHYS110:ISEM 6.1 Explain the FunctionsandhormonesofPinealGland,Pituitary gland,	2	**3**	3	3	2	2	2	2	3	2	2
PHYS110:ISEM 6.2 Describe the Thyroid, Parathyroid, Thymus	3	**2**	2	2	2	3	2	3	2	2	2
PHYS110:ISEM 6.3 Explain PancreasandAdrenalglands	2	**2**	3	2	2	2	2	2	2	2	2
PHYS110:ISEM 6.4 Explain the Otherhormones	2	**3**	2	3	2	3	2	2	2	3	2

PHYS110:ISEM 6.5 Explain the Alterationsindisease Applicationandimplicationinnursing	2	**3**	2	3	2	3	3	2	2	2	2
VII 4 (T)	At the end of unit students are able to **Knowledge:** Understand the functions of skin, eye, ear, nose and tongue. **Attitude:** Incorporate this knowledge in nursing practice	**TheSensory Organs**	PHYS110:ISEM 7.1	Explain the Functionsofskin Describe the Vision,hearing,	• Functionsofskin Describe the Vision,hearing,					1 hour	
			PHYS110:ISEM 7.2	Describe tasteandsmell	• Tasteandsmell					1 hour	
			PHYS110:ISEM 7.3	Describe the Errorsofrefraction, aging changes		• Errorsofrefraction, agingchanges				1 hour	
			PHYS110:ISEM 7.4	Explain the Applicationandimplicationsinnursing		Applicationandimplicationsin nursing				1hour	
Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety		Quality improvement	Evidence based practice	Lifelong learner
PHYS110:ISEM	2	**3**	2	3	2	3	2	2		3	2	3

7.1 Explain the Functionsofskin Describe the Vision,hearing											
PHYS110:ISEM 7.2 Describe tasteandsmell	2	**3**	2	3	2	2	2	2	2	2	2
PHYS110:ISEM 7.3 Describe the Errorsofrefraction , aging changes	2	**3**	2	2	2	2	2	2	3	2	3
PHYS110:ISEM 7.4 Explain the Applicationandimplicationsinnursing	2	**3**	2	3	3	2	3	2	3	2	2
VIII 6 (T)	At the end of unit students are able to **Knowledge:** Understand the types and functions of muscles and its importan	**Musculoskeletalsystem**	PHYS110:ISEM 8.1	Explain the Bones – Functions, movements of bones ofaxialandappendicularskeleton,Bonehealing	• Bones – Functions, movements of bones ofaxialand appendicularskeleton,				1 hour		
			PHYS110:ISEM 8.2	Explain the Jointsandjointmovements Explain the Alterationofjointdisease	• Bonehealing • Jointsandjointmovements				1 hour		

	ce in maintaining body. **Skill:** Identify the alterations in the functioning of muscles. **Attitude:** Contribute in improving the quality of nursing practice.		PHYS110:ISEM 8.3	Describe the PropertiesandFunctionsofskeletal muscles–mechanismof musclecontraction	• Alterationofjointdisease • PropertiesandFunctionsofskeletal muscles			1hour		
			PHYS110:ISEM 8.4		• Mechanismof musclecontraction			1 hour		
			PHYS110:ISEM 8.5	Explain the Structureandpropertiesofcardiacmusclesandsmooth muscles		Structureandpropertiesofcardiac musclesandsmoothmuscles		1hour		
			PHYS110:ISEM 8.6	Describe the Applicationandimplicationinnursing				Applicationandimplicationinnursing	1hour	
Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner

PHYS110:ISEM 8.1 Explain the Bones – Functions, movements of bones ofaxialandappendicularskeleton,Bonehealing	2	**2**	2	3	2	2	2	3	2	2	3
PHYS110:ISEM 8.2 Explain the Jointsandjointmovements Explain the Alterationofjointdisease	2	**3**	2	2	2	3	2	3	2	3	2
PHYS110:ISEM 8.3 Describe the PropertiesandFunctionsofskeletalmuscles– mechanismof	2	**2**	2	3	2	3	2	3	2	2	3
PHYS110:ISEM 8.4 Mechanismof musclecontraction	2	**3**	2	3	2	3	2	2	2	2	2
PHYS110:ISEM 8.5 Explain the Structureandpr	2	**3**	2	2	2	2	2	2	2	2	2

opertiesofcardiacmusclesandsmoothmuscles											
PHYS110:ISEM 8.6 Describe the Applicationandimplicationinnursing	3	**2**	2	2	3	2	2	3	2	3	3
IX 4(T)	At the end of unit students are able to **Knowledge: Understand** the functions of kidneys, ureters, urinary bladder and urethra. Describe the mechanism of formation of urine. **Skill:** Perform effective nursing care in dialysis	**Renalsystem**	PHYS110:ISEM 9.1	Explain the Functions ofkidneyinmaintainingho meostasis,GFR	Functionsofkidneyinmaintainingho meostasis GFR				1hour		
			PHYS110:ISEM 9.2	Explain the Functionsofureters, bladderandurethra.	Functionsofureters,bladderandurethra				1hour		
			PHYS110:ISEM 9.3	Micturition,Regulationofrenalfunction		Micturition,Regulationofrenalfunction			1hour		
			PHYS110:ISEM 9.4	Explain the Applicationandimplicationinnursing		Applicationandimplicationinnursing			1hour		

	unit.										
Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner
PHYS110:ISEM 9.1 Explain the Functionsofkidneyinmaintainingho meostasis,GFR	**3**	**2**	2	2	3	2	3	2	2	2	3
PHYS110:ISEM 9.2 Explain the Functionsofureters,bladderandurethra.	**2**	**2**	2	3	2	3	2	2	2	2	3
PHYS110:ISEM 9.3 Micturition,Regulationofrenalfunction	**2**	**3**	2	3	2	2	2	2	3	2	3
PHYS110:ISEM 9.4 Explain the Applicationandimplicationinnursing	**2**	**3**	2	3	2	3	3	3	3	2	2

X 4 (T)	**Knowledge:** Acquire knowledge regarding functions of male and female reproductive organs andDescribe reproduction of cells-DNA, Mitosis, Meiosis, Spermatogenesis and Oogenesis. **Attitude:** Contribute in improving quality of care of patients.	**TheReproductivesystem**	PHYS110:ISEM 10.1	Describe the Femalereproductive system– Menstrualcycle, function and hormones of ovary,	Femalereproductivesystem– Menstrualcycle, function and hormones of ovary,					1hour		
			PHYS110:ISEM 10.2	Describe the oogenesis, fertilization, implantation,Functionsof breast	oogenesis, fertilization, implantation,Functionsof breast					1 hour		
			PHYS110:ISEM 10.3	Explain the Malereproductivesystem– Spermatogenesis,hormonesand itsfunctions,			Malereproductivesystem– Spermatogenesis,hormonesand itsfunctions, semen			1 hour		
			PHYS110:ISEM 10.4	Describe the Applicationandimplicationinprovidingnursingcare			Applicationandimplicationinprovidingnursingcare			1hour		
Competence /Course outcome	Patient centered	Professi	Teachin	System-based	Heal	Com	Teamw	Safety	Quality improvement	Evidence	Lifelong	

	care	onalism	g & Leadership	practice	th informatics and Technology	munication	ork and Collaboration			based practice	learner
PHYS110:ISEM 10.1 Describe the Femalereproductivesystem– Menstrualcycle, function and hormones of ovary,	2	**3**	2	3	3	2	3	3	3	2	2
PHYS110:ISEM 10.2 Describe the oogenesis, fertilization, implantation,Functionsof breast	2	**3**	2	2	3	2	2	2	2	3	2
PHYS110:ISE Explain the Malereproductive system– Spermatogenesis, hormonesand itsfunctions, M 10.3	2	**2**	3	2	2	2	3	2	2	2	2
PHYS110:ISEM 10.4 Describe the Applicationandimplicationinprovidingnursingcare	2	**2**	3	2	2	2	2	3	2	2	3

XI 8(T)	At the end of unit students are able to **Knowledge:** Understands the functions of neuralgia and neurons, brain, spines code, cranial and spinal nerves. **Attitude:** Identify the actions of reflexes.	**Nervous system**	PHYS110:ISEM 11.1	Describe the Overviewofnervous system Reviewoftypes,structureandfunctionsofneurons Nerveimpulse	Overviewofnervoussystem Reviewoftypes,structureandfunctionsofneurons,Nerveimpulse			1 hour
			PHYS110:ISEM 11.2	Explain the Reviewfunctionsof Brain-Medulla,Pons,Cerebrum,Cerebellum,Sensoryand	Reviewfunctionsof Brain-Medulla, Pons,Cerebrum,Cerebellum Sensoryand			1 hour
			PHYS110:ISEM 11.3	Explain the MotorNervoussystem	MotorNervoussystem			1hour
			PHYS110:ISEM 11.4	Explain the PeripheralNervoussystem,AutonomicNervoussystem	PeripheralNervoussystem AutonomicNervoussystem	’		1 hour
			PHYS110:ISEM 11.5	Describe the PeripheralNervoussystem,AutonomicNervoussystem	PeripheralNervoussystem, AutonomicNervoussystem			1hour
			PHYS110:ISEM 11.6	Explain the LimbicsystemandhighermentalFunctions,Hippocampus,T		Limbicsystemandhighermental Functions,Hippocampus,Thalamus		1hour

				halamus,						
			PHYS110:ISEM 11.7	Explain the Functionsofcranialnerves		Functionsofcranial nerves			1hour	
			PHYS110:ISEM 11.8	Describe the Autonomicfunctions PhysiologyofPain-somatic,visceraland referred				Autonomicfunctions PhysiologyofPain-somatic,visceralandreferred	1hour	
Competence /Course outcome	Patient centered care	Professionalism	Teaching & Leadership	System-based practice	Health informatics and Technology	Communication	Teamwork and Collaboration	Safety	Quality improvement	Evidence based practice	Lifelong learner
PHYS110:ISEM 11.1 Describe the Overviewofnervoussystem Reviewoftypes, structureandfunctionsofneuro	3	2	2	2	3	2	2	2	2	2	2

ns Nerveimpulse											
PHYS110:ISEM 11.2Explain the Reviewfunctionsof Brain-Medulla,Pons,Cerebrum,Cerebellum,Sensory	2	3	2	3	2	3	2	2	2	2	2
PHYS110:ISEM 11.3 Explain the MotorNervoussystem	2	3	2	2	2	2	2	2	3	3	3
PHYS110:ISEM 11.4 Explain the PeripheralNervoussystem,AutonomicNervoussystem	3	3	2	2	3	3	2	3	3	2	3
PHYS110:ISEM 11.5 Describe the PeripheralNervoussystem,AutonomicNervoussystem	3	2	2	3	3	2	3	3	2	3	3
PHYS110:ISEM 11.6 Explain the Limbicsystemand highermentalFunctions,Hippocampus,Thalamus,	2	3	2	3	3	2	3	3	2	3	3
PHYS110:ISEM 11.7 Explain the Functionsofcranialnerves	2	3	2	3	2	2	3	2	3	2	3
PHYS110:ISEM 11.8 Describe the Autonomicfunctions PhysiologyofPain - somatic,visceralan	2	3	2	2	3	2	2	3	2	2	2

dreferred											

TEACHING STRATEGY:

Total Hours: 60 Theory Hours: 60

Theory

Continuous Assessment: 10Mark

Sr. No	Assignments	Percentage of Attendance	Allotted marks	Total Marks for attendance
1	Attendance	95-100%	2	2 marks
		90-94%	1.5	
		85-89%	1	
		80-84%	0.5	
		<80%	0	
		Number assignments	Marks	Total Marks
2	Written Assignments	2	2X5	10
3	Seminar/Microteaching/Individual presentation	2	2X6	12
4	Group work/Work/Report	1	1X6	6
			Total	30/3=10Marks

Note: If there is mandatory module in that semester, marks obtained by student out of 10 can be added to 30 totaling 40 marks

Total=40/4=10marks

Modified Tutorials (3 Hours)

Sr. No	**Comp. no**	**TOPIC**	Domain	T-L Method	Teaching Hrs
1.	PHYS110:ISEM 1.1	Describe the Physiology of celltissue-formation, repair	K,S	Tutorials	1 Hour
2.	PHYS110:ISEM 4.1	Explain the Functionsofheart,conductionsystem,cardiac cycle, Stroke volume and cardiacoutput	K,S	Tutorials	1 Hour
3.	PHYS110:ISEM 5.1	Describe the Blood– Functions,Physicalcharacteristics Formationofbloodcells Erythropoiesis– FunctionsofRBC,RBClifecycle	**K,S**	Tutorials	1 Hour

Formative Assessment

1. Sessional Examinations: Theory: I

Sr. No.	**Question paper – Theory**	**Total**
Maximum marks	30	30

2. Sessional Examinations: Theory: II

Sr. No.		**Total**
Maximum marks	30	30

Note: Sessional II exam will be replication of university exam and it will converted into 30 marks

Type of questions	Number of questions	Marks allotted
MCQ	4×1=4	4 Marks
Essay/situation type	1×10=10	10 Marks
Short	2×5=10	10 Marks
Very short	3×2=6	06Marks
	Total	30 marks

c. Calculation of Internal Assessment (IA): Theory

- Total marks of two sessional examinations along with continuous assessment 30marksx2=60/4=15
- 10+15 = 25 Marks
- Minimum required - 50 %

2. Summative Assessment Section B (38 marks)

a. Theory:

Type of questions	Number of questions	Marks allotted
MCQ	7X1	07Marks
Essay/situation type	1x10	10Marks
Short	3x5	15Marks
Very short	3x2	06Marks
	Total	38marks

LIST OF RECOMMENDED BOOKS:

- Chakravorthy N Chakravorthy D. Fundamentals Of Human Anatomy
- Chaurasia B.D, Human anatomy.
- Jackson seiles, Anatomy and physiology for nurses.
- April E N, Anatomy pre-test
- Tortora, J Gerard and Anagnostakos P Nicholas Principles of anatomy and physiology.