

**COURSE CURRICULUM FOR FIRST PROFESSIONAL BSMS
(PRESCRIBED BY NCISM)**

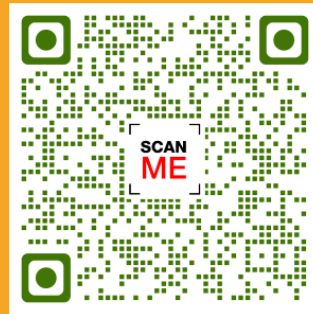
“தொட்டனைத் தூறும் மணற்கேணி மாந்தர்க்குக்
கற்றனைத் தூறும் அறிவு”
(AS DEEP YOU DIG THE SAND SPRING FLOWS; AS DEEP YOU LEARN THE KNOWLEDGE GROWS-
THIRUKKURAL 396)

**UDAL THATHUVAM
SUBJECT CODE: SIDUG-UT
HUMAN PHYSIOLOGY**

**(Applicable from 2021-2022 batch onwards for five years or until
further notification by NCISM, whichever is earlier)**



**BOARD OF UNANI, SIDDHA AND SOWA RIGPA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI- 110058**



SIDUG-UT

**I – PROFESSIONAL SIDDHA MARUTHUVA ARIGNAR
(BSMS)
SUBJECT CODE: SIDUG - UT
UDAL THATHUVAM (HUMAN PHYSIOLOGY)
SUMMARY**

KEY POINTS

Total number of Teaching hours: 450			
Lecture hours (LH) - Theory		150 Hours	150 Hours (LH)
Paper I	70 Hours		
Paper II	80 Hours		
Non-Lecture hours (NLH) – Theory		90 Hours	300 Hours (NLH)
Paper I	40 Hours		
Paper II	50 Hours		
Non-Lecture hours (NLH) - Practical		210 Hours	

Examination (Papers & Mark Distribution)					
Item	Theory Component Marks	Practical Component Marks			
		Practical	Viva	Elective	IA
Paper I	100	100	20	10	20
Paper II	100				
Sub-Total	200	150			
Total marks	350				

PREFACE

Udal Thathuvam (Siddha Physiology) is the Core branch of Siddha Science which deals with the Integrated functioning of human body. The subject field of Siddha physiology entails the study of the function, mechanisms and biological processes that underpin the living human body. The discipline of Siddha physiology forms an integral cornerstone of the health science, without which a sound understanding of pathology and disease management is not possible.

The underlying goal of Udal Thathuvam is to explain the fundamental mechanisms that operate in all the three bodies of human [Gross body (Sthula), Subtle body (Sookchuma), Casual body (Kaarana)]. This syllabus comprises of Pancha bootha thathuvam, 96 Fundamental principles, Karu urpathi, Udal thaathu, Uyir thaathu, Longevity of life and Varmam physiology. This is a cordial attempt to provide precise and updated content of the subject to Siddha Medical Students. As regards to furnish profound erudition for the students of Bachelor of Siddha Medicine and Surgery (B. S. M. S), the syllabus of Udal Thathuvam has been upgraded.

This syllabus enholds Pancha bootha thathuvam explaining, “Everything from a cell to the Universe is made up of Pancha boothams”. Siddhar’s concept of Karu urpathi explains the physiology of Embryogenesis. 96 Thathuvams deal with the basic components of human body that are recognized by Siddhars. Functional divisions of Uyir thathu and Udal thathu are the root cause and basis of life. Naadi serves as a mirror by reflecting the physiologic and pathologic happenings in the human body. Siddhar’s concept of endocrinology pertaining to Longevity of life is expounded. Siddhar's art of controlling the life force, "Pranayamam", is a psychosomatic spiritual discipline for achieving union & harmony between our mind, body and soul which is elaborated under Pranamaya kosam.

Varmam deals with the bio energetic sites and energy flow of subtle body aiding in body’s physiologic function. Varmam Science plays a crucial role in our Siddha Therapy. Thus Varmam physiology and its basic Thathuvams are comprised in this syllabus. It provokes indulging basic skills and knowledge in varmam medical therapy.

Udal thathuvam paper – II is designed according to learn the normal functioning of organ systems in body and their respective applied physiology.

This syllabus provides a thorough understanding of normal body functions, enabling more effective treatment of abnormal or diseased states. We are hopeful that this revised syllabus contributes to the development of required skills in students.

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SN	Course code	Name of Course
1.	SIDUG – UT	UDAL THATHUVAM (HUMAN PHYSIOLOGY)

Table 1 - Course outcome and Program outcomes

CO No.	A1 - Course Outcome At the end of the course the student should be able to-	B1 - Course outcome matched with Program Outcome
CO1.	Describe and explain the <i>ImPoothangal</i> (Five elements), <i>96 Thathuvangal</i> (96 Philosophical Principle) and <i>14 Vegangal</i> (14 Urges) and recognizes their importance in clinical conditions.	PO3, PO9
CO2.	Describe and correlates clinically the concepts of <i>Eazhu Udarkattukkal</i> (Seven physical constituents), <i>Muththathukkal</i> (three Humours), <i>Arusuvai</i> (Six tastes), <i>Udal Vanmai</i> (Body temperament), <i>Envagai thervu</i> (8 Diagnostic methods), <i>Karu Urpathi</i> (Embryology) in respect to physiological conditions.	PO3, PO4
CO3.	Comprehensive the methods of pulse reading and ability to differentiate the normal and deranged vital humours.	PO4
CO4.	Demonstrate the understanding of Pranayamam, Yogam and Varmam physiology.	PO6
CO5.	Compare and explain the basic Siddha physiological principles with the modern aspect.	PO1, PO2, PO9
CO6.	Describe and correlates clinically the physiological functions of each system of human body.	PO9
CO7.	Demonstrate the estimation of certain haematological factors. Demonstrate the vital parameters of Cardiovascular, Respiratory, Digestive, and Nervous system.	PO9
CO8.	Explain the understanding of pathophysiological aspects of diseased condition.	PO9

Table 2 - Contents of the Course**UDAL THATHUVAM (HUMAN PHYSIOLOGY) PAPER-I**

SN	A2 List of Topics (Theory)	B2 Term	C2 Marks 100	D2 Lecture hours	E2 Non- Lecture hours
1.	96 Thathuvam (Ninety six Fundamental Principles and Details) Five elements (Iymbootham) – five sense organs (pori) – five senses (pulan) – Motor organs (Kanmendryam) – Discriminative power of five senses (Gnanandriyam) – Four intellectual faculties (Karanam) – Wisdom of Self-realization (Arivu) – Ten Vital channels (Dhasa nadi) – Ten vital Air (Dhasavayu) – five visceral cavities (Asayam) – five sheaths (Kosam) – Six vital centres of the Soul (Aatharas) - Three regions (Mandalam) – Three impurities of soul (malam), Three humours (Thodam) - Three physical bindings (Edanai) – Three cosmic qualities (gunam) - Two acts (Vinai) – Eight passions (Ragam) – Five states of consciousness (Avathai) - in detail.	I	6	5	3
2.	PanchaboothaThathuvam (Five Elements and it's Medical aspect) Creation of five elements – properties – five fold combination (panchikaranam) – Manifestation of five elements in our body (panchabootha koorugal (or) Purakaruvikal) – Relation between five elements & six tastes – Five elements and three humours – five elements and seven physical constituents.	I	6	5	3
3.	Karu Urpathi Valarchi and Dhega Ilakanam (Body Temperament) Development of Embryo according to Siddhars' concepts. Role of five elements during fertilization, and intrauterine life – Different stages of foetal growth – sex determination & Determination of life span according to Siddhar's concept. Temperament of an individual Features of vatha temperament – pitha temperament – Kapha temperament and Compound Body Temperament.	I	6	5	3
4.	Mukkuutra Iyal (Three Humoral Theory) Predominant locations – properties – physiological role. Functional varieties of vatham – Pranan – Udhanan – Samanan – Abanan – Viyanan – Nagan – Koorman – Kirukaran – Devadhathan – Dhananjeyan. Pitham:- Predominant locations – properties – physiological role. Functional varieties of pitham -	I	11	5	3

	Pasakam – Ranjakam – Sathakam – Aalosakam – prasakam. Kapham:- Predominant location – properties – physiological role Functional varieties of pitham. – Avalampakam – Kilethakam – Pothakam – Tharpakam – Santhikam.				
5.	Ezhu Udarthathukkal (Seven Physical constituents) Nutrient juice (saram) – Blood (Chenneer) – Muscle (ooun) – fat & adipose tissue (kozhuppu) – Bone & Teeth (Enbu) – Bone marrow & nervous tissue (Moolai) – Semen or ovum (Sukilam/suronitham) – their nature and functions.	II	11	5	3
6.	Piniari Muraimai (Envagai Thervu) Naa- Niram – Mozhi – Vizhi – Malam – Moothiram- Naadi – Sparisam- Physiological Aspect.	II	7	5	3
7.	Pathinangu Vegangal (Fourteen Natural Urges) Vatham (Flatus air) – Thummal (Sneezing) – Neer (Micturition) – Malam (Defecation) – Kottavi (Yawning) – Pasi (Appetite) – Neervetkai (Thirst) – Kasam (Cough) – Illaippu (Exhaustion) – Nithirai (Sleep) – Vanthi (Vomiting) – Kanner (Tears) – Sukilam (Semen) – Suvasam (Breathing).	II	6	5	2
8.	Kosangal (Five Sheaths of Human Body) Physical sheath (Annamaya kosam) – Respiratory sheath (Piranamaya kosam) – Mental sheath (Manomaya kosam) – Intellectual sheath (Vignanamaya kosam) – Blissful sheath (Ananthamaya kosam)	II	2	2	1
9.	Annamayakosam/Paruvudal (Physical Sheath/Gross body) Composition of food materials – waste or excretory materials (Chakkai) – Nutrients – Tastes – Three vital units (Uyir thathu) – qualities (gunam) Taste:- Properties of six tastes – Synergetic taste (natpu suvai) Antagonistic taste (pakai suvai) Vatha food – pitha food – Kapha food – Sathuva food – Rajasa food - Thamasa food – food and seasons.	II	6	5	3
10.	Manomaya Kosam (Mental Sheath, Siddhars Concept of Naadi) Naadi – Definitions , Formation and – Characteristics of Naadi (Naadi Nadai) – Naadi ratio – Ten important sites of Naadi – Guru Naadi – Bootha Naadi – Karbha Naadi	II	12	5	3
11.	Varma Physiology Definition – synonyms - relationship between Vaasi and Varmam – Varmathalangal–pathway for Swasam - Varma Naadigal pathways in Varma Physiology -	II	6	5	3

	Varma Maathirai – classification - Irai – Avadhi – Adangal - Amirthanilai Thalagal and vishanilai thalagal - Mukkalai Thathuvam - Moovudal Thathuvam - Imbootha Thathuvam - Mummandila Thathuvam - relationship between Subtle body & 12 Varmam Naadi & 10 Vaayus - importance of Varmam - Varma Noi - Ilakkumurai - Varma Kaayam				
12.	Pranamaya Kosam (Respiratory Sheath) Functions of pranana – Regulation of breathing – Pranayama thathuvam.	III	11	5	3
13.	Ayutkaalathai Vellum Vazhimuraigal (Longevity of Life) According to Siddha principles – Concentration of six Psychophysical centres (Aatharas) – Stimulation of Adharas by meditation & Yoga.	III	6	4	3
14.	Vignanamaya Kosam (Intellectual Sheath) Four intellectual faculties (Anthakaranam) – Good & Bad Acts (Iruvinai) – Mukkunam (Satwa, Rajas & Thamas) – Aatharam (six station of soul) – Avathai (Six stages of consciousness) – Dhasa Nadi (Idakalai, Pinkalai, Suzhumunai, Sikuvai, Purudan, Kanthari, Atthi, Alampudai, Sankini & Gugu)	III	2	5	2
15.	Aananthamaya Kosam (Blissful Sheath) Self realization (Arivu) – Yoga Muppu - Laadam - achievement (Siddham) and its details.	III	2	4	2
TOTAL				70	40

UDAL THATHUVAM (HUMAN PHYSIOLOGY) PAPER- II

SN	A2 List of Topics (Theory)	B2 Term	C2 Marks 100	D2 Lecture hours	E2 Non- Lecture Hours
1.	General physiology Cell and its Functions, Transport across cell membrane, Homeostasis – positive and negative feedback Mechanism. Applied physiology - Acidosis, Alkalosis	I	7	3	1

<p>2.</p>	<p>Blood and Body fluids</p> <p>Body fluids - ECF & ICF, Blood, Plasma proteins - composition, classification and functions Erythrocytes - Erythropoiesis - functions - destruction. Haemoglobin and 'Fe' Metabolism, Abnormal haemoglobin derivatives - variations in number,size,shape,structure of Red blood cells- Anaemia, ESR, Leucocytes - Classification, functions, formation, fate of WBC and Immunity,Platelets, Haemostasis, Blood Volume, Coagulation of Blood, Blood groups</p> <p>Applied physiology- Dehydration – Water intoxication - Types of Anemia - Jaundice - Polycythemia - Purpura - Von Willebrand disease - Hemophilia - Thrombocytopenia- Leukemia - Leucopenia, Erythroblastosis foetalis, Auto immune diseases.</p>	<p>I</p>	<p>12</p>	<p>10</p>	<p>15</p>
<p>3.</p>	<p>Muscle physiology</p> <p>Classification, Properties, Changes during Muscular contraction and relaxation of Smooth, Cardiac and Skeletal muscles, Proprioceptors.</p> <p>Neuromuscular junction, Neuromuscular transmission</p> <p>Applied physiology Myasthenia gravis - Muscular dystrophy.</p>	<p>I</p>	<p>7</p>	<p>4</p>	<p>1</p>
<p>4.</p>	<p>Gastrointestinal System</p> <p>Introduction of GIT, Mastication, Salivary glands, composition & function of saliva, control of salivation, Deglutition, Secretion, composition, functions of Stomach, Pancreas, Liver, Small intestine, Large Intestine, Gallbladder, Motility of GIT, Defecation</p> <p>Applied physiology - Gastritis, Gastric Atrophy - Zollinger Ellison syndrome - Peptic ulcer, Hypo Salivation, Hyper Salivation, Xerostomia. - Steatorrhea - Jaundice - Cirrhosis of liver - Gall stone - Celiac disease - Malabsorption syndrome - Constipation - Ulcerative colitis - Dysphagia - GERD - Vomiting – Diarrhoea. Pancreatitis, Hepatitis, Crohn's diseases, Appendicitis.</p>	<p>II</p>	<p>12</p>	<p>7</p>	<p>5</p>
<p>5.</p>	<p>Endocrine System</p> <p>Introduction to Endocrinology, Regulation of secretion and Functions of Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal cortex and Medullary Hormones</p>	<p>II</p>	<p>12</p>	<p>6</p>	<p>1</p>

	<p>Applied physiology Gigantism - Acromegaly - Dwarfism - Diabetes Insipidus - Hyperthyroidism - Hypothyroidism - Goitre-Osteoporosis -Osteomalacia - Rickets - Diabetes mellitus type I and II - Hyperinsulinism- Cushing syndrome - Addison's disease - Pheochromocytoma.</p>				
6.	<p>Reproductive System</p> <p>Sexual differentiation of foetus in uterus. Male sex organs, Semen, Role of Male sex hormones, Prostate gland, Spermatogenesis, Female sex organs, Role of Female sex hormones, Oogenesis, Menstrual cycle, Ovulation, Menopause, Fertilization, Pregnancy, Parturition, Lactation.</p> <p>Applied Physiology - Male andropause - Extripation of testes - gonadism - Aspermia - Azoospermia - Oligospermia - Hematospermia - Abnormal menstruation - Post menopausal syndrome – Infertility, Reproductive– Male & Female, Prostate enlargement</p>	III	7	4	1
7.	<p>Excretory System</p> <p>Kidney, Nephron, Renal circulation, Juxtaglomerular apparatus, GFR, Renin-Angiotensin mechanism - Renal Circulation, Urine formation - Role of kidney in Acid base balance, Micturition, Renal Function Tests, Cystogram and cystometry, Regulation on Body temperature, Functions of Skin</p> <p>Applied physiology Diabetes insipidus - Osmotic diuresis - Polyuria - Renal failure. Hyperthermia, Hypothermia.</p>	II	7	8	4
8.	<p>Respiratory System</p> <p>Respiratory Unit, Non - Respiratory Functions of Respiratory Tract, Pulmonary Circulation, Surfactant and Compliance, Mechanism of Respiration, Pulmonary Function Test, Lung volumes and capacities, Ventilation, Inspired Air, Alveolar Air and Expired Air, Exchange of Respiratory gases, Transport of O₂ and Co₂ Effects of respiration during exercise – Physiological effect of High altitude, - Regulation of Respiration.</p> <p>Applied physiology - Apnea – Asphyxia - Dyspnea- Cyanosis - Hypoxia - Hyperapnea, Hypoapnea - Periodic breathing - Pulmonary oedema - Pleural effusion - Emphysema - Bronchial asthma - ARDS (Acute Respiratory Distress Syndrome.), Disturbances of respiration</p>	II	7	10	4

9.	<p>Cardiovascular System</p> <p>Introduction of CVS, Properties of cardiac muscle, Regulation of cardiac function, Cardiac cycle, Events & Phases, Heart sounds – Murmur, ECG, Cardiac output and Venous return, Regional circulation conducting tissues of the heart, Arterial Blood pressure & its Regulation, Arterial pulse and venous pulse, Haemodynamics, Shock, Cardiovascular adjustment during exercise.</p> <p>Applied physiology - Reduplication of First and second heart sounds - Hypertension - Hypotension - Pulsus deficit - Pulsus alternans - Anacrotic pulse - Pulsus paradoxus - Water hammer pulse - Patent ductus arteriosus - Myocardial Ischemia - Myocardial infarction - Angina pectoris - Stroke - Varicose veins- Haemorrhage</p>	II	12	10	5
10.	<p>Central Nervous System</p> <p>Divisions of Nervous System, Neuron, Synapse, Neuroglia, Classification & Degeneration and Regeneration of Nerve fibres - Receptors - Neurotransmitters, Reflex activity – Spinal reflex, Muscle Tone, Physiology of motor unit, Physiology of Pain - Functions of Spinal Tracts, Thalamus, Hypothalamus, Basal Ganglia, Brainstem, Cerebellum, Cerebral Cortex and ANS - Higher intellectual functions, Physiology of sleep, CSF – formation, circulation and functions</p> <p>Applied Physiology - Syringomyelia - Tabes Dorsalis - Multiple Sclerosis - Disc prolapse - Hemiplegia - Parkinson disease - Wilson disease - Chorea - Motion sickness - Insomnia - Aphasia - Dysarthria – Dysphonia – Narcolepsy – Nocturnal Enuresis - Hydrocephalus</p>	III	11	13	10
11.	<p>Special senses</p> <p>Eye – Functional Anatomy of Eye - Visual Process, Field of vision, Pupillary reflex, Colour vision, Errors of Refraction – Visual Pathway</p> <p>Ear – Functional Anatomy of Ear Mechanism of Hearing, Auditory Defects - Auditory Pathway</p> <p>Sensation of Taste</p> <p>Sensation of Smell</p> <p>Applied Physiology - Cataract - Glaucoma - Color blindness - Errors of Refraction - Auditory defects - Ageusia – Anosmia - Horner’s Syndrome</p>	III	6	5	3
TOTAL				80	50

Table 3 - Learning Objectives (Theory) of course < SIDUG - UT >

UDAL THATHUVAM (HUMAN PHYSIOLOGY)									
PAPER I – THEORY									
A3 Course outcome	B3 Learning Objective (At the end of the session, the Students should be able to)	C3 Domain	D3 Must to know/ desire to know/ Nice to know	E3 Level shows/ Knows how/Know s	F3 T-L method	G3 Assessment	H3 Formative / summative	I3 Term	J3 Integration
Topic 1 – 96 Thathuvam (Ninety six Fundamental Principles and Details)					(Lecture:- 5 hours, Non Lecture- 3 hours)				
CO1	Define Thathuvam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain Moondru Sareerangal/ Three types of Body	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain the relationship between Thathuvas , Cell, Gross body	Cognitive/ Comprehensive	MK	Knows how	Lecture/Video clips	Written	F	I	
CO1	Describe the different types of 96 Thathuvas according to various Siddhar Principles	Cognitive/ Comprehensive	NK	Knows	Lecture	Written	F&S	I	
CO1	Explain the Pancha Shiva Thathuvas	Cognitive/ Comprehensive	NK	Knows	Lecture	Written	F&S	I	
CO1	Quote the 96 Thathuvas from Yugi Sinthamani	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Describe how 96 Thathuvas are	Cognitive/	MK	Knows	Lecture	Written	F&S	I	

	classified into Three Thathuvas according to Yugi Sinthamani	Comprehensive							
CO1	State the Mudhal/First thathuvam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	State the Irandam/ Second thathuvam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	State the Moondram/ Third thathuvam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Define Five Elements / Pancha Boothas	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain the Formation of Pancha Boothas	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	State the Properties, functions of Pancha Boothas	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Define Pori/ Five Sense Organs	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain the types, importance of Porigal and its relation to 5 Elements	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Define Pulan/ Five Senses	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	State the synonym for Pulan	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain the types,functions of Pulan	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain Kanmendiryam/ Motor organs	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	State the synonyms, functions of each Kanmendiryam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain Gnanandiryam/ Discriminative Power of five senses	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Describe the Four Intellectual Properties/ Anthakaranam/ Aga Karuvigal	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	

CO1	Explain Arivu/ Wisdom of Self Realization	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	State the ten Vital Channels/ Dhasa Naadigal	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain the Dhasa Naadigal	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	State the ten Vital Air / Dhasa Vayu	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain the Dhasa Vayu	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Describe the Asayam/ Five Visceral Cavities	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain the Kosam /Five sheaths	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Describe the six Aatharas/ Six Vital Centers of Soul	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Illustrate six Aatharas	Cognitive/ knowledge	MK	Knows	Lecture/ video clips	Written	F&S	I	
CO1	Explain the Situation, Formation of Three Mandalam/ Three Regions	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Describe Malam/ Three Impurities of Soul	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain Thodam/ Three Humours	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Describe Edanai/ Three Physical Binding	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain Gunam/ Three Cosmic Qualities	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Discuss Vinai/ Two Acts	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Explain Raagam/ Eight Passions	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO1	Describe Avathai/ Five state of Consiousness	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	

CO1	Discuss the significance of 96 Thathuvas	Cognitive/ Comprehensive	MK	Knows	Group discussion	Written	F&S	I	
CO1	Design 96 thathvas (e.g Charot,Linga sareeram etc..)	Psychomotor/ Articulation	DK	Knows how	Group discussion	Model	F	I	
CO1	Recall the quote from Yugi Sinthamani	Cognitive/ knowledge	MK	Knows how	Discussion	Viva voice	F&S	I	
Topic 2 - PanchaboothaThathuvam (Five Elements and it's Medical aspect)						(Lecture:- 5 hours, Non Lecture-3hours)			
CO1	Discuss "Prabanjam Panchaboothamayam"	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	I	
CO1	State the quotes of Sadhaga Nadi, Tholkaapiyam, Pathinen Siddhar Naadi nool on Prabanjam Panchaboothamayam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	I	
CO1	Describe the Creation of Five Elements from Bhramam (Nithyavasthu)	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	I	
CO1	State the Properties of Five Elements	Cognitive/ knowledge	MK	Knows	Lecture with reference images	Written/Viva voice	F & S	I	
CO1	Give some exercises on identifying the five elemental property with some examples	Cognitive/ Application	MK	Knows How	Lecture with property	Viva voice	F & S	I	
CO1	Describe the sequence of Panchabootha Pancheekaranam	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written/Viva voice	F & S	I	
CO1	Describe and Discuss "Thegam Panchaboothamayam" (PuraKaruvigal)	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	I	
CO1	Describe and Discuss Relationship between Five Elements & Tastes	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	I	
CO1	Demonstrate various forms of tastes to establish its predominant elemental composition	Psychomotor/ Imitation	MK	Knows How	Lecture with property	Viva voice	F	I	
CO1	Describe and Discuss Relations	Cognitive/	MK	Knows	Lecture	Written/Viva	F	I	

	between Five elements and Three humours	Comprehensive				voice			
CO1	Describe and Discuss Relations between Five Elements, Tastes and Three Humours	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	I	
CO1	Give some examples to discuss the relations between Five Elements, Tastes and Three Humours	Cognitive/ Application	NK	Knows How	Lecture with property	Viva voice	F	I	
CO1	Interpret the drug selection based on properties of Five elements	Cognitive/ Understand	MK	Knows	Lecture	Viva voice	F	I	
CO1	Describe and Discuss Relations between Five elements and Seven physical constituents	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	I	
Topic 3- Karu Urpathi Valarchi and Dhega Ilakanam (Body Temperament)						(Lecture:- 5 hours, Non Lecture –3hours)			
CO2	Describe the process of fertilization	Cognitive/ Comprehensive	MK	Knows	Video clips, Lecture	written	F&S	I	
CO2	Explain the role of panchaboothas in fertilization	Cognitive/ Comprehensive	MK	Knows	Lecture	written	F&S	I	Sool Maruthuvam
CO2	State the reasons for fertilization and infertility	Cognitive/ knowledge	MK	Knows	Lecture	written	F&S	I	
CO2	Define the role of Pranan in sex determination of the foetus	Cognitive/ knowledge	MK	Knows	Lecture	written	F&S	I	Sool Maruthuvam
CO2	Explain the role of three impurities(malanga) during fertilization	Cognitive/ Comprehensive	MK	Knows	Lecture	written	F&S	I	
CO2	Describe the functions of PanchaPranans(five vital air) in Intra Uterine life	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Comparison of reproductive organs with five elements based on Thirumoolar Thirumandhiram	Affective/ Valuing	MK	Knows	Group discussion	Written/Viva voice	F&S	I	
CO2	Explain the role of five elements in parturition	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	

CO2, CO5	Describe about different stages of foetal growth	Cognitive/ Comprehensive	MK	Knows	Lecture/ video clips/	Written	F&S	I	Sool maruthuvam
CO2	Determination of lifespan according to siddhar's concept	Cognitive/ Understand	MK	Knows	Lecture	Written	F&S	I	
CO2	Determination of lifespan based on movements of Pranan	Cognitive/ Understand	MK	Knows	Lecture	Written	F&S	I	
CO2	Discuss the phases of life controlled by Three Humours	Cognitive/ Comprehensive	MK	Knows	Group discussion	Written/Viva voice	F&S	I	
CO2	State the role of Three Humours in an Individuals Temperament	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the individual features of Vatha temperament	Cognitive/ Comprehensive	MK	Knows	Lecture, Simulation	Written/Viva voice	F&S	I	
CO2	List the foods that are ideal for Vatha temperament	Cognitive/ knowledge	DK	Knows how	Video clips/ spotters	Written/Viva voice	F&S	I	
CO2	Describe the individual features of Pitha temperament	Cognitive/ Comprehensive	MK	Knows	Lecture, Simulation	Written/Viva voice	F&S	I	
CO2	List the foods that are ideal for Pitha temperament	Cognitive/ knowledge	DK	Knows how	Video clips/ spotters	Written/Viva voice	F&S	I	Noi anuga vidhi ozhukam
CO2	Describe the individual features of Kapha temperament	Cognitive/ Comprehensive	MK	Knows	Lecture, Simulation	Written/Viva voice	F&S	I	
CO2	List the foods that are ideal for Kapha temperament	Affective/ Valuing	DK	Knows how	Video clips/ spotters	Written/Viva voice	F&S	I	Noi anuga vidhi ozhukam
CO2	Describe the individual features of Different Compound Body temperament (Thondha Dhegy)	Cognitive/ Comprehensive	MK	Knows	Lecture, Simulation	Written/Viva voice	F&S	I	
CO2	Analyze the given individual and find His/Her temperament	Cognitive/ Comprehensive	NK	Knows how	Simulation / bed side clinic	Practicals	F&S	I	
CO2	Analyze His/Her temperament in medical camp with the readymade questionnaire.	Cognitive/ Comprehensive	NK	Knows how	Fieldwork in medical camp and hospital	Practicals	F&S	I	
CO6	Observe foetus development during gestational period by using USG	Psychomotor/ Control	DK	Knows How	ECE	-	F	I	Clinical

Topic 4 - Mukkutra Iyal (Three Humoral Theory)

(Lecture: 5 hours, Non- Lecture- 3 hours)

CO2	Define humor/ Uyir Thathus.	Cognitive/ knowledge	MK	Knows	Lecture	Written/Viva voice	F&S	I	
CO2	Name the Types of Uyir Thathus.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain Formation of Uyir Thathus.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	State the Location of Uyir Thathus.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Find out the Difference between Uyir Thathus&Udal Thathus	Affective/ Valuing	MK	Knows	Lecture	Written/Viva voice	F&S	I	
CO2	Name the Udal Thathus that gets affected if all three humors are deranged.	Affective/ Valuing	MK	Knows	Lecture	Written	F&S	I	
CO2	List the Properties of Uyir Thathus.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the Relationship between 3 humors & 7 physical constituents.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain How the 3 humors are stored in our body.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe How the 3 humors are eliminated in our body	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain seasonal impact of 3 humors.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	State the Relationship between 5 elements & 3 humors.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Define vatham	Cognitive/ knowledge	MK	Knows how	Lecture	Written/Viva voice	F&S	I	
CO2	Explain different qualities of vatham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain the locations of vatham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain the types of vatham	Cognitive/ Comprehensive	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	State the position of vatham	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	

		knowledge							
CO2	Define Formation of vatham	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Name and explain functional varieties of vatham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe Increased features of vatham.	Cognitive/ Comprehensive	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	Explain Decreased features of vatham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Storage of vatham and properties of vatham in our body.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Discuss the Properties of vatham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain the physiological role of vatham.	Cognitive/ Comprehensive	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	Identify the vaayu affected-clinical feature.	Psychomotor/ imitation	MK	Knows	Self-learning	Written	F	I	
CO2	Select the taste to be given to restore the affected Vatham.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Name the UdalThathu that gets affected if vatham is deranged.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Pranan.	Cognitive/ knowledge	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	Name the Synonym of Pranan.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	state the location of Pranan.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	List the Functions of Pranan.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Abanan	Cognitive/ knowledge	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	State the Synonym of Abanan.	Cognitive/ knowledge	MK	Knows how	Lecture	Written	F&S	I	
CO2	State the location of Abanan.	Cognitive/ knowledge	MK	Knows how	Simulation	Written	F&S	I	

		knowledge							
CO2	Describe Properties of Pranan.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain the Properties of Udhanan.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain Functions of Udhanan.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define samanana	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the Synonym of samanana.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Describe the location of samanana.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of samanana	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of samanana.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Nagan	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	List the Synonym of Nagan	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the location of Nagan.	Cognitive/ knowledge	MK	Knows	Lecture,	Written/ Viva voice	F&S	I	
CO2	Describe the Properties of Nagan.	Cognitive/ Comprehensive	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	Describe the Functions of Nagan.	Cognitive/ Comprehensive	MK	Knows	Lecture,	Written/ Viva voice	F&S	I	
CO2	Define Koorman.	Cognitive/ knowledge	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	List the Synonym of Koorman.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	State the location of Koorman	Cognitive/ knowledge	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	Describe the Properties of Koorman	Cognitive/ Comprehensive	MK	Knows how	Lecture	practicals	F&S	I	

CO2	Describe the Functions of Koorman	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Kirukaran.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	List the Synonym of Kirukaran	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the location of Kirukaran	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of Kirukaran.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Describe the Functions of Kirukaran.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Devadhathan.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	List the Synonym of Devadhathan	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of Devadhathan.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Devadhathan.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Dhananjeyan.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	List the Synonym of Dhananjeyan.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	State the location of Dhananjeyan.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of Dhananjeyan	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Dhananjeyan	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Pasakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Ranjakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	List the Synonym of Ranjakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	

		knowledge							
CO2	State the location of Ranjakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Describe the Properties of Ranjakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	List the Functions of Ranjakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Define Sathakam	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F&S	I	
CO2	List the Synonym of Sathakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the location of Sathakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of Sathakam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Sathakam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Aalosakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	List the Synonym of Aalosakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the location of Aalosakam	Cognitive/ knowledge	MK	Knows how	Lecture / video clips	Written/ Viva voice	F&S	I	
CO2	Describe the Properties of Aalosakam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Aalosakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Pirasakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	List the Synonym of Pirasakam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the location of Pirasakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of Pirasakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/Viva voice	F&S	I	

CO2	Describe the Functions of Pirasakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain different qualities of pitham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Explain the locations of pitham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Explain the functions of pitham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Explain the types of pitham.	Cognitive/ Comprehensive	MK	Knows	Lecture/ Video clips/ Spotters	Written	F&S	I	
CO2	State the position of pitham	Cognitive/ knowledge	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	Describe the Formation of pitham.	Cognitive/ Comprehensive	MK	Knows how	Lecture	Written/ Viva voice	F&S	I	
CO2	Define kapham.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Pothakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Name the UdalThathu that gets affected if Kapham is deranged.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Name and explain functional varieties of kapham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Avalampakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Tharpakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	List the Synonym of Tharpakam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the location of Tharpakam	Cognitive/ knowledge	MK	Knows	Lecture	Written/Viva voice	F&S	I	
CO2	Describe the Properties of Tharpakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/Viva voice	F&S	I	
CO2	Describe the Functions of Tharpakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Santhikam	Cognitive/	MK	Knows	Lecture	Written	F&S	I	

		knowledge							
CO2	List the Synonym of Santhikam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the location of Santhikam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of Santhikam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Santhikam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Avalampakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	List the Synonym of Avalampakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	State the location of Avalampakam. Properties of Avalampakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Point out the Increased features of kapham.	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F&S	I	
CO2	Point out the Decreased features of kapham	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Explain Storage of kapham in our body	Cognitive/ Understand	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of kapham.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	State the physiological role of kapham.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Identify the variety of kapham affected based on the clinical feature.	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	Select the taste to be given to restore the affected Kapham	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Kilethakam. Synonym of Kilethakam.	Cognitive/ knowledge	MK	Knows how	Lecture / Video clips	Written/ Viva voice	F&S	I	
CO2	State the location of Kilethakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	

CO2	Describe the Properties of Kilethakam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Functions of Kilethakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	I	
CO2	Define Pothakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	State the locations of Pothakam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Describe the Properties of Pothakam.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	I	
CO2	List the Synonym of Pothakam.	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	I	
CO2	Identify the affected Humors based on the given clinical features.	Psychomotor/ imitation	MK	Knows how	Lecture/ Group discussion	Written	F	I	
CO2	Select the taste to be given to restore the affected humors.	Cognitive/psychomotor	MK	Knows how	Lecture/ Group discussion	Written	F	I	
CO2	Point out on two prominent clinical features to differentiate increased and decreased features of vali and correlate drug selection for this concerned condition on the basis of Neutralizing tastes and its Potency.	Psychomotor/ imitation	MK	Knows how	Lecture/ Clinical discussion	Written	F	I	
CO2	Point out on two prominent clinical features to differentiate increased and decreased features of Pitham and correlate drug selection for this concerned condition on the basis of Neutralizing tastes and its Potency.	Psychomotor/ imitation	MK	Knows how	Lecture/ Clinical discussion	Written	F	I	

CO2	Point out on two prominent clinical features to differentiate increased and decreased features of Iyyam and correlate drug selection for this concerned condition on the basis of Neutralizing tastes and its Potency.	Psychomotor/imitation	MK	Knows how	Lecture/ Clinical discussion	Written	F	I	
Topic 5- Ezhu Udarthathukkal (Seven Physical constituents)					(Lecture:- 5 hours, Non Lecture -3hours)				
CO2	Define udarkattukkal or physical constituents	Cognitive/knowledge	MK	Knows	Lecture	Written/Viva voice	F&S	II	
CO2	State the Seven physical constituents of the body	Cognitive/knowledge	MK	Knows	Lecture	Written	F&S	II	
CO2	Describe the relationship between seven constituents and five elements	Cognitive/Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO2	Discuss the influence of Six Taste (Arusuvaigal) in seven physical constituents	Cognitive/Comprehensive	MK	Knows	Lecture, group discussion	Written	F&S	II	
CO2	Difference between Udal thathu and Uyir thathu	Cognitive/understand	MK	Knows how	Lecture, group discussion	Written/Viva voice	F&S	II	
CO2	Elaborate the normal functions of seven physical constituents	Cognitive/knowledge	MK	Knows	Lecture	Written	F&S	II	
CO2	Enlist the Food/ Taste that strengthen the physical constituents	Cognitive/knowledge	DK	Knows	Seminar	Written	F	II	
CO2	Describe Characteristics of Saaram/ Body fluid	Cognitive/Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO2	Compare Saaram to various body fluids	Affective/Valuing	MK	Knows how	Group discussion	Written	F&S	II	Modern physiology
CO2	Explain the Increased and Decreased features in Saaram composition	Cognitive/Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO5	Give few examples (clinical conditions) due to variations in	Psychomotor/imitation	DK	Knows how	Lecture	Written	F	II	

	Saaram								
CO2	Describe Characteristics of Senneer/ Blood	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	Modern physiology
CO2	Tabulate the types of blood cells and its composition	Cognitive/ knowledge	DK	Knows how	Group discussion	Written	F&S	II	Modern Physiology
CO2	Summarize the importance of blood in body	Cognitive/understand	MK	Knows	Lecture	Written	F&S	II	
CO2	Explain the features due to increase and decrease in Senneer composition	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO5	Give few examples (clinical conditions) due to variations in Senneer	Cognitive/ Application	DK	Knows how	Group discussion	Written/ Viva voice	F	II	
CO2	Describe Characteristics of Oon/ Muscle	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO2	Classify the various types of muscles	Affective/organization	MK	Knows	Video clips	Written	F&S	II	Modern Physiology, Clinical
CO2	State the changes due to increase and decrease in Oon composition	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	II	
CO5	Give few examples (clinical conditions) due to variations in Oon thathu	Cognitive/ Application	DK	Knows how	Group discussion	Written/Viva voice	F	II	Modern Physiology clinical
CO2	Describe Characteristics of kozhupu (fat & adipose tissue)	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO2	Summarize the importance of Kozhupu thathu in gross and subtle body	Cognitive/understand	MK	Knows	Lecture	Written	F&S	II	
CO2	State the features due to increase and decrease in Kozhupu thathu composition	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	II	
CO5	Give few examples (clinical conditions) due to variations in Kozhupu thathu	Cognitive/ Application	DK	Knows how	Early clinical exposure	Written/Viva voice	F	II	Modern Physiology clinical
CO2	Describe Characteristics of Enbu/	Cognitive/	MK	Knows	Lecture	Written	F&S	II	

	bone & teeth	Comprehensive							
CO2	Difference between Enbu & Murunthu (cartilage)	Affective/valuing	MK	Knows	Lecture	Written	F&S	II	
CO2	State the features due to increase and decrease in Enbu thathu composition	Cognitive/knowledge	MK	Knows	Lecture/Seminar	Written	F&S	II	
CO5	Give few examples (clinical conditions) due to variations in Enbu thathu	Cognitive/Application	DK	Knows how	Lecture/Video clips	Written/Viva voice	F&S	II	
CO2	Describe Characteristics of Moolai	Cognitive/Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO2	Summarize the importance of Moolai thathu in gross and subtle body	Cognitive/understand	MK	Knows	Lecture	Written	F&S	II	
CO2	State the features due to increase and decrease in Moolai thathu composition	Cognitive/knowledge	MK	Knows	Lecture	Written	F&S	II	
CO5	Give few examples (clinical conditions) due to variations in Moolai thathu	Cognitive/Application	DK	Knows how	Lecture/ early clinical exposure	Written/Viva voice	F	II	Modern Physiology Clinical
CO2	Describe Characteristics of Sukkilam & Suronitham	Cognitive/Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO2	Discuss the formation of Vinthu thathu from Saaram	Cognitive/Comprehensive	MK	Knows	Group discussion	Written	F&S	II	
CO2	State the features due to increase and decrease in Sukkilam & Suronitham Semen/Ovum composition	Cognitive/knowledge	MK	Knows	Lecture	Written	F&S	II	
CO5	Give few examples (clinical conditions) due to variations in Sukkilam/ Suronitham thathu	Cognitive/Application	MK	Knows how	Lecture	Written/ Viva voice	F&S	II	Modern Physiology Clinical
CO2	Point out the vital Humor which is predominant in this specified Udal thathu.	Affective/Valuing	DK	Knows how	Demonstration	practicals	F	II	

CO2	Identify the status of physical constituent in the sample given.	Psychomotor/ Imitation	MK	Knows how	Simulation	practicals	F	II	
Topic 6- Piniari Muraimai (Envagai Thervu)					(Lecture:- 5 hours, Non Lecture- 3hours)				
CO2	Define Piniari Muraimai	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	II	
CO2	State the Rules and Regulations of Piniari Muraimai	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	II	
CO2	Compare Piniari muraimai with General Physical Examination	Affective/ Valuing	DK	Knows	Lecture	Viva voice	F	II	
CO2	List the components of Envagai thervu	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	II	
CO5	Describe the physiology of oral cavity	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F	II	
CO2	Explain the functions of Pothagam	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Discuss about location of taste buds, taste sensation and nervous supply of the tongue	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	Modern Physiology
CO5	Observe colour, shape, movements, taste sensations and continuity of the tongue	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Written/ Viva voice	F & S	II	Clinical
CO5	Observe colour, shape, continuity of the lip	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Written/ Viva voice	F & S	II	
CO5	Discuss about count and coatings of tooth	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F	II	
CO5	Observe the colour, shape, cavity, erosions of tooth	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	Clinical
CO5	Discuss about the significance of palate	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F	II	
CO5	Observe the colour, shape and other changes of palate	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Written/ Viva voice	F & S	II	Clinical
CO2 CO5	Explain the functions of Kirukaran	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Discuss about the Composition of	Cognitive/	NK	Knows	Lecture	Viva voice	F&S	II	

	Saliva	Comprehensive							
CO5	Observe the colour and consistency of Saliva	Psychomotor/imitation	DK	Knows How	Lecture/Practical 1	Written/Viva voice	F & S	II	Clinical
CO5	Observe the colour and consistency of Phlegm	Psychomotor/imitation	DK	Knows How	Lecture/Practical 1	Written/Viva voice	F & S	II	Clinical
CO2 CO5	Explain the Functions of Prasagam	Cognitive/Comprehensive	NK	Knows	Lecture	Viva voice	F&S	II	
CO2 CO5	Define and describe the role of Melanin pigment in skin and hair	Cognitive/Comprehensive	NK	Knows	Lecture	Viva voice	F&S	II	
CO2 CO5	Discuss the Skin colour based on Yakkai ilakanam	Cognitive/Comprehensive	MK	Knows	Lecture	Written/Viva voice	F&S	II	
CO5	Discuss the clinical conditions oriented with colour changes in skin	Cognitive/Comprehensive	DK	Knows	Lecture	Viva voice	F&S	II	Clinical
CO2 CO5	Discuss the hair colour based on Yakkai ilakanam	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Discuss the clinical conditions oriented with colour changes in hair	Cognitive/Comprehensive	DK	Knows	Lecture	Viva voice	F&S	II	Clinical
CO5	Observe the colour changes in nails	Psychomotor/imitation	DK	Knows How	Lecture/Practical 1	Written/Viva voice	F & S	II	Clinical
CO2 CO5	Explain the functions of Uthanan, Devathathan	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO2 CO5	Discuss the speech nature based on Yakkai ilakanam	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Describe the physiology of vocal cord	Cognitive/Comprehensive	NK	Knows	Lecture	Viva voice	F&S	II	
CO5	Discuss about Speech center and different patterns of Speech	Cognitive/Comprehensive	NK	Knows	Lecture	Viva voice	F&S	II	Modern Physiology, Clinical, Anatomy
CO2 CO5	Observe the Nature of Voice among a group	Psychomotor/imitation	DK	Knows How	Lecture/Practical 1	Written/Viva voice	F & S	II	Clinical
CO2 CO5	Explain the functions of Naagan, Koorman, Devathathan,	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	

	Aalosagam, Tharpagam								
CO2 CO5	Discuss the Eye nature based on Yakkai ilakanam	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Discuss the muscular attachments, Nervous Supply, Blood Supply and Movements of Orbits	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F	II	Anatomy Modern Physiology
CO5	Explain the role of Vitamin A in vision	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F	II	Biochemistry
CO5	Observe the colour, shape, position, vision and secretion of orbits	Psychomotor/ imitation	MK	Knows How	Lecture/Practica 1	Written/ Viva voice	F & S	II	
CO5	Demonstrate Corneal reflex	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Viva voice	F	II	
CO5	Discuss about visual field, visual acuity, visual accommodation	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F	II	
CO5	Demonstrate the usage of Snellen's and Ishihara chart	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Viva voice	F	II	
CO2 CO5	Discuss the Nature of eyelids based on Yakkai ilakanam	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Demonstrate Conjunctival Reflex	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Viva voice	F	II	Clinical, Modern Physiology
CO5	Observe the shape, movements and secretion of eye	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	
CO2	Explain the functions of Abaanan	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Describe the Characteristics of feces	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F&S	II	
CO5	Observe the colour, consistency and other findings of stool in clinical laboratory.	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	Clinical
CO5	Discuss the colour, consistency other findings of stools with clinical oriented	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F	II	Clinical

CO2	Explain the functions of Abanan	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Discuss the formation, composition and specific gravity of urine	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO2 CO5	Observe the colour, consistency, smell, deposits and other findings in Urine	Psychomotor/ imitation	DK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	
CO2 CO5	Discuss the clinical conditions present in Urine	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F&S	II	Clinical
CO2	Discuss the Nature of Skin based on Yakkai ilakanam	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Demonstrate the Pain, Touch and Temperature of Skin	Psychomotor/ imitation	MK	Knows How	Lecture/Practica 1	Viva voice	F	II	
CO5	Discuss and Demonstrate Superficial reflexes	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Observe the colour, texture, temperature, touch sensation, continuity and secretions of Skin	Psychomotor/ imitation	MK	Knows How	Lecture/Practica 1	Written/ Viva voice	F & S	II	Clinical
CO3	Describe the Naadi ratio (Maathirai Alavu)	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO3	Practice of Sensing Naadi on their own	Psychomotor/ Control	NK	Knows How	Lecture/Practica 1	Viva voice	F	II	Clinical
CO3 CO5	Discuss about Changes of Naadi in diseased state	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	Clinical
CO2 CO5	Discuss the Nature of Hair based on Yakkai ilakanam	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Observe the colour, texture, growth of hair	Psychomotor/ imitation	MK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	
CO5	Explain the physiology of ear	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F&S	II	
CO5	Demonstrate bone and air conduction by using tuning fork	Psychomotor/ imitation	MK	Knows How	Lecture/Practica 1	Viva voice	F	II	
CO5	Observe hearing capacity using various frequency tuning fork	Psychomotor/ imitation	MK	Knows How	Lecture/Practica 1	Viva voice	F	II	Clinical

CO5	Observe sebum and any other secretions from ear	Psychomotor/ imitation	MK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	Clinical
CO5	Explain the physiology of Nose	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO1	Explain the functions of Kirukaran	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Demonstrate the Smell sensation using Mild to Pungent odour	Psychomotor/ imitation	MK	Knows How	Lecture/Practica 1	Viva voice	F	II	Clinical
CO5	Observe any growth, nasal congestion, septal deviation and nasal secretions	Psychomotor/ imitation	NK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	
CO1 CO5	Discuss the Nature of forehead based on Yakkai ilakanam	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO5	Observe the colour, sensory Innervation and wrinkling of forehead	Psychomotor/ imitation	NK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	
CO5	Observe the shape, colour, texture of nails	Psychomotor/ imitation	NK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	
CO1 CO5	Discuss the clinical conditions oriented with changes in nails	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F	II	Clinical
CO1 CO5	Describe the sequence of Sukkilam formation	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	II	
CO1 CO5	Explain the composition and characteristics of Semen	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Discuss about Ejaculation physiology	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F	II	
CO5	Observe the colour and consistency of Semen in clinical laboratory	Psychomotor/ imitation	NK	Knows How	Lecture/Practica 1	Written/ Viva voice	F	II	Clinical
CO5	Discuss the clinical conditions oriented with changes in Semen	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F&S	II	
CO1 CO5	Discuss about Role of hormones in ovulation	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F&S	II	
CO5	Describe the pattern of writing menstrual history	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F&S	II	

CO5	Discuss on pattern of taking gynecological and obstetrical history	Cognitive/Comprehensive	DK	Knows	Lecture	Viva voice	F & S	II	Clinical
Topic No 7: Pathinangu Vegangal (Fourteen Natural Urges)					(Lecture:- 5 hours, Non Lecture 2hours)				
CO1	Explain the 14 Natural urges	Cognitive/Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	II	
CO1	Describe the effects of suppressing Vaatham	Cognitive/Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	II	
CO1	Discuss the clinical conditions oriented with Suppression of Vaatham	Cognitive/Comprehensive	MK	Knows	Lecture	Written/Viva voice	F	II	
CO1	Define Thummal	Cognitive/knowledge	MK	Knows	Lecture	Written	F & S	II	
CO5	Describe Sneezing reflex	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO1	Explain the effects of Suppressing sneezing	Cognitive/Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	II	
CO5	Discuss the clinical conditions oriented with Sneeze Suppression	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F	II	Clinical
CO1	Define and describe Micturition Reflex	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO5	Explain the effects of suppressing micturition	Cognitive/Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	II	
CO5	Discuss the clinical conditions oriented with Urine Suppression	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F	II	Clinical
CO5	Describe Defecation reflex	Cognitive/Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO1	Explain the effects of suppressing Defecation	Cognitive/Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	II	
CO5	Discuss the clinical conditions oriented with Feces Suppression	Cognitive/Comprehensive	MK	Knows	Lecture	Written/Viva voice	F	II	Clinical
CO1	Define Yawning	Cognitive/knowledge	MK	Knows	Lecture	Written/Viva voice	F	II	
CO5	Describe Yawning reflex	Cognitive/	MK	Knows	Lecture	Viva voice	F	II	

		Comprehensive							
CO5	Enlist the causes of Yawning	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F	II	Modern Physiology
CO1	Explain the effects of suppressing Yawning	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO5	Discuss the clinical conditions oriented with Yawn Suppression	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	Clinical
CO1	Define Pasi (Appetite)	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F & S	II	
CO1	Explain the effects of suppressing Pasi	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO1	Discuss about Hunger contractions	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO5	Discuss the clinical conditions oriented with Appetite Suppression	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	Clinical
CO1	Define Thirst	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F	II	
CO5	Describe the mechanism of Thirst	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO1	Explain the effects of suppressing Thirst	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO5	Discuss the conditions causing increased or decreased Thirst	Cognitive/ Comprehensive	NK	Knows	Lecture	Written/Viva voice	F	II	Clinical
CO1	Define Kaasam	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO5	Describe the mechanism of Cough reflex	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO1	Explain the effects of suppressing Kaasam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO1	Discuss Urakka Avaththai	Cognitive/ Comprehensive	DK	Knows	Lecture	Written	F & S	II	
CO1	Define Sleep	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F	II	
CO5	Describe the mechanism of Sleep	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F	II	

		Comprehensive							
CO1	Distinguish between the types of sleep	Cognitive/ Understand	NK	Knows	Lecture	Viva voice	F	II	
CO5	Discuss about Sleep paralysis, Hypnotic jerk, Night mare, Night terror.	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F	II	
CO1	Discuss Sleep requirements	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F	II	Hygiene
CO1	Explain the effects of suppressing Thookam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO5	Discuss the clinical conditions oriented with Sleep Suppression	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO1	Define Vomit	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F	II	
CO5	Describe Vomiting reflex	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO1	Explain the effects of suppressing Vandhi	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO5	Describe the mechanism of Lacrimation reflex	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO1	Explain the effects of suppressing Vizhineer	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO5	Discuss about crocodile tears	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F	II	Clinical
CO1	Explain the effects of suppressing Sukkilam/Suronidham	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
Topic 8 – Kosangal (Five Sheaths of Human Body)					(Lecture:- 2hours, Non Lecture-1hours)				
CO1	Define Kosam and Describe the types of Kosam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	II	
CO1	Describe the formation and location of Kosangal	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO1	Explain the importance of Kosangal	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	

CO1	List the systems involved in Annamaya kosam, Pranamaya kosam, Manomaya kosam, Vingnanamaya kosam and Aanandhamaya kosam	Affective/ Valuing	MK	Knows	Lecture	Viva voice	F&S	II	
CO1	State the Physiological role of Kosangal	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F&S	II	
CO5	Compare Kosangal with Modern Physiology And anatomy	Cognitive/ Understand	MK	Knows how	Lecture	Viva voice	F	II	
CO5	Compare Kosangal with transending 5 sheath to the self in yoga	Cognitive/ Understand	DK	Knows how	Lecture	Viva voice	F	II	
CO1	Discuss Three Bodies and 5 Sheath In Yogic bodies	Cognitive/ Comprehensive	DK	Knows how	Lecture	Viva voice	F	II	
Topic No : 9 Annamayakosam/Paruvudal (Physical Sheath/Gross body)						(Lecture:- 5 hours, Non Lecture- 3 hours)			
CO1	Define Annamaya kosam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO1	Describe the formation of Annamayakosam (Physical Sheath)	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO1	Describe the Composition of Food	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO1 CO2	Describe the relationship between three humors in food and action exhibited by three humors body	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO1	List the different aspects of Food	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO1	Define Saththu	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO1	Define Sakkai	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO1	Discuss the differences between	Cognitive/ knowledge	NK	Knows	Lecture	Written/ Viva voice	F & S	II	

	Saththu And Sakkai	Comprehensive				Viva voice			
CO2	Define and Describe the Properties of Arusuvai	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO2	Discuss the Advantages and Disadvantages of Arusuvai	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO2	Discuss the tastes that aggravates and equalizes Three Humors	Cognitive/ Comprehensive	MK	Knows	Lecture	Viva voice	F	II	
CO2	Explain the Potency of Tastes and Post absorptive taste of Arusuvai	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO2	Interpret the drug selection based on Tastes which equalizes Three Humors	Psychomotor/ Imitation	NK	Knows How	Lecture	Viva voice	F	II	
CO2	List the Synergetic (Natpu) and antagonistic (Pagai) tastes of Arusuvai	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO2	Describe the three Humor basis of Food	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO1	Describe the Characters of Food (Sathuvam, Raso and Thamo Gunam)	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO1	Describe and list the Sathuvaguna Porutkal	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO1	Describe and list the Rasoguna Porutkal	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO1	Describe and list the Thamoguna Porutkal	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO2	Describe the relations between Seasons, Arusuvai and Three humors	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO2	Discuss the Arusuvai that nourishes six physical constituents	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO2	Discuss Relations between Five Elements, Tastes and Three Humors	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written/ Viva voice	F & S	II	

CO2	Define Calorie (Kanali)	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO2	Explain Daily Requirements of calorie based on age, gender and work	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
Topic No : 10 Manomaya Kosam (Mental Sheath, Siddhars Concept of Naadi)					(Lecture:- 5 hours, Non Lecture-3hours)				
CO3	Define Manomaya kossam (Mental Sheath)	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO3	Define Naadi	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	List the Synonyms of Naadi	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO3	Describe the Principles of Formation of Vaatha,Pitha,Kabha Naadi from Jeeva Sakthi	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO3	Describe the Process of Vali, Azhal, Iyam attaining Vaayu, Theyu, Appu components	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO3	State the characteristics of Naadi (Naadi Nadai)	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO3	Enlist the Principles of Naadi	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO3	Enlist the Ten important sites for Naadi palpation	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	Compare the ten Naadi assessing sites with concerned artery	Affective/ Valuing	DK	Knows	Lecture	Viva voice	F	II	
CO3	Discuss the other sites for Naadi Palpation	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	Compare the Speciality of Palpating Naadi in Hand with Radial pulse	Affective/ Valuing	MK	Knows	Lecture	Viva voice	F & S	II	
CO3	Describe the Naadi ratio (Maathirai Alavu)	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	Define Maathirai	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	

CO3	Discuss the reasons for variations in Naadi Maathirai	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	Discuss the quotes of Theran Maruthuva Bharatham in Naadi	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO3	Illustrate the method of reading Naadi (Pulse)	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	Demonstrate the methods of assessing Naadi(Vatha, Pitha, Kabha) using three digits	Psychomotor/ Control	MK	Knows How	CME	Viva voice	F & S	II	Clinical
CO3	Practice of Sensing Naadi on their own	Psychomotor/ Control	NK	Knows How	Hands on Training	Viva voice	F & S	II	Clinical
CO3	Explain the Reasons for Assessing Naadi in left hand for females and right hand for males	Cognitive/ Understand	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	Compare the Parable of Vatha, Pitha, Kabha Naadi's amplitude with gait of fauna	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO3	Describe the state of Naadi according to Time	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	Observe the beats of Vaatha, Pitha, Kabha Naadi in accordance with time in a day	Psychomotor/ Control	MK	Knows How	Hands on Training	Viva voice	F & S	II	Clinical
CO3	Discuss the Importance of Naadi	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO3	Define Guru Naadi	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO3	Enlist the importance of Guru Naadi	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO3	State the position of Guru Naadi	Cognitive	MK	Knows	Lecture	Written	F & S	II	
CO3	Define and Describe Bootha Naadi	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	II	
CO3	Describe Panchabootha Naadi/Pancha Naadi	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO3	Discuss the cardinal role of Naadi	Cognitive/	MK	Knows	Lecture	Written/	F & S	II	

	Assessment in Envagai thervu	Comprehensive				Viva voice			
CO3	Define Yaathirai Naadi	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO3	Discuss Karba Naadi	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F	II	
CO3	Practice to sense the changes happening in Naadi during gestational period	Psychomotor/ Control	DK	Knows How	ECE	Viva voice	F	II	Clinical
CO3	Enlist the various factors influencing Naadi	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
Topic 11: VARMA PHYSIOLOGY					(Lecture:- 5 hours, Non Lecture- 3 hours)				
CO4	Define Varmam	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	II	Varmam Maruthuvam pothu
CO4	State the synonyms for Varmam	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	II	Varmam Maruthuvam pothu
CO4	Explain the relationship between Vaasi and Varmam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO4	Define Varmathalangal/ Varma sites	Cognitive/ knowledge	MK	Knows	Lecture/ Video clips	Written	F&S	II	
CO4	Describe Saram	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO4	Give the synonyms for Saram	Cognitive/ Application	MK	Knows	Lecture	Written/ Viva voice	F&S	II	
CO4	Describe the pathway for Swasam/ Breath	Cognitive/ Comprehensive	MK	Knows	Lecture/ Video clips	Written	F&S	II	Varmam Maruthuvam adipadaikal
CO4	Discuss the 12 Varma Naadi pathways and its importance	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO4	Explain the Varma Naadigal/ Dhasavaayu Thalangal	Cognitive/ Comprehensive	MK	Knows	Lecture/ Video clips	Written	F&S	II	
CO4	Define Kaalam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	II	

CO4	Explain Varma Maathirai	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO4	Describe the classification of Varmam	Cognitive/ Comprehensive	DK	Knows	Lecture	Written	F & S	II	
CO4	Define Irai	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	II	Varmam 108
CO4	Explain Avadhi	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	II	
CO4	Define Adangal	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	II	
CO4	Explain the importance of Adangal	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	II	
CO4	Explain Adangal in injuries	Cognitive/ Comprehensive	DK	Knows	Lecture	Written	F & S	II	
CO4	Discuss about Amirthanilai Thalangal and vishanilai thalangal	Cognitive/ Comprehensive	DK	Knows	Lecture/ Video clips	Written	F & S	II	
CO4	Describe the Mukkalai Thathuvam in Varmam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	Varmam Maruthuvam pothu
CO4	Explain the Moovudal Thathuvam in Varmam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO4	Describe the Imbootha Thathuvam or Five Element Theory in Varmam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
CO4	Discuss the Mummandila Thathuvam in Varma	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	Varmam 108
CO4	Discuss the relationship between 96 principles, Three bodies and Three Mandalams	Cognitive/ Comprehensive	DK	Knows how	Group Discussion	Written/Viva voice	F&S	II	
CO4	Explain the relationship between Subtle body and 12 Varmam Naadi	Cognitive/ Comprehensive	NK	Knows	Lecture	Written	F	II	Varmam 108
CO4	Describe the relationship between 12 Varmam Naadi and 10 Vaayus	Cognitive/ Comprehensive	NK	Knows	Lecture	Written	F	II	Varmam 108
CO4	Explain the relationship between	Cognitive/	NK	Knows	Lecture, group	Written	F	II	

	12 Naadis, Internal organs and External orifices	Comprehensive			discussion				
CO4	Describe Panchabootha Vaasi and its formation	Cognitive/ Comprehensive	DK	Knows	Lecture	Written	F	II	
CO4	Discuss the importance of Varmam	Cognitive/ Comprehensive	MK	Knows how	Group Discussion	Written/Viva voice	F&S	II	
CO4	Explain how Varmam influences Siddha system of medicine	Cognitive/ Comprehensive	MK	Knows how	Lecture, Group Discussion	Written/Viva voice	F&S	II	
CO5	Discuss and Compare Amirthanilai Thalangal and vishanilai thalangal with Surgical sites and leech therapy in human body	Cognitive/ Comprehensive	DK	Knows how	Group Discussion	Viva voice	F	II	
CO6	Demonstrate the Varmam basic classes with Varmam experts	Psychomotor/ Control	NK	Knows how	DOAP classes	Viva voice	F	II	
CO4	Define Varma noi (Varma diseases)	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	II	
CO4	Define Ilakkumurai (Manipulation Technique)	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	II	Varmam Maruthuvam pothu
CO4	Explain Varma Kaayam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	II	
Topic No : 12 Pranamaya Kosam (Respiratory Sheath)					(Lecture:- 5hours, Non Lecture - 3 hours)				
CO4	Define Pranamaya kosam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	III	
CO4	Define Pranana and list the Location, Colour, Deity and functions of Pranana	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO4	Quote the animal personified as Pranana according to Thirumanthiram	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	III	
CO4	State the rate of respiration according to Siddha and its distribution to Aatharams	Cognitive/ knowledge	MK	Knows How	Lecture	Written/ Viva voice	F & S	III	

CO4	Define Saram and its Synonyms	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO4	State the flow of Saram according to Time and Day	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO5	Define Biological Rhythms	Cognitive/ knowledge	NK	Knows	Lecture	Written/ Viva voice	F	III	
CO5	Explain the different types of Biological Rhythms	Cognitive/ Comprehensive	NK	Knows	Lecture/videocli ps	Written/ Viva voice	F	III	
CO5	Compare the flow of saram with Biological rhythms	Cognitive/ knowledge	NK	Knows	Lecture/videocli ps	Written/ Viva voice	F	III	Circadian rhythm and Chronobiology
CO4	Explain the distribution of Saram through Five elements and describe the life expectancy	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	III	
CO4	Define Pranaayamam and Synonyms of Pranayamam	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO4	Describe the suitable aasanas and method of Practicing Pranayamam	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written/ Viva voice	F & S	III	
CO4	State the important rules of practising Pranayamam	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	III	Sirappu maruthuvam
CO4	Define three stages of respiration in Pranayamam and states its ratio	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO4	Discuss the rate of respiration per day, breath utilizes per day and breath lost per day	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO4	List the benefits of Pranaayamam (Sarapazhakkam)	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO4	Practice and Observe the Changes during Pranayamam	Psychomotor/ Imitation	NK	Knows How	Practical	Viva voice	F	III	
CO4	Quotes the sayings of Thirumoolar to attain enlightenment through Pranaayamam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F	III	
CO4	Quotes the sayings of Agathiyar	Cognitive/ knowledge	MK	Knows	Lecture	Written	F	III	

	Uyir Gnanam on Pranayamam	knowledge							
CO4	Discuss the role of Three Humors in Pranamaya Kosam	Cognitive/ Comprehensive	NK	Knows	Lecture	Viva voice	F	III	
CO4	Describe and Demonstrate the practice of Pranayamam for sleep, calm mind and reduce Palpitation based on sayings of Thirumoolar	Psychomotor/ control	DK	Knows How	Practical	Viva voice	F	III	
Topic 13. Ayutkaalathai Vellum Vazhimuraigal (Longevity of Life)					(Lecture:- 4 hours , Non Lecture- 3 hours)				
CO1	Explain the Longevity produced by concentration of six psychophysical centers according to siddhar's principle	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Compare and Analyze the similarities of psychophysical centers Knows (aadharam) to endocrine glands	Cognitive/ knowledge	MK	Knows	Lecture, video clips	Written	F&S	III	
CO1	Describe the stimulation of aadharas by meditation	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Describe the stimulation of aadharas by yogam	Cognitive/ Comprehensive	MK	Knows	Group discussion	Written	F&S	III	
CO1	Define Aging	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	III	
CO1	Describe the components of aging	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Explain why longevity of life is important	Cognitive/ Comprehensive	DK	Knows	Group discussion	Written/ Viva voice	F&S	III	
CO1	Define kayakarpanam	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	III	
CO1	Explain the role of kayakarpanam in longevity	Cognitive/ Comprehensive	MK	Knows	Lecture	Written /Viva voice	F&S	III	
CO1	Elaborate on kalpa aviltham	Cognitive/ knowledge	DK	Knows	Lecture/video clips/ spotters	Written	F	III	
CO1	Explain the role of Pranayama in longevity	Cognitive/ Comprehensive	MK	Knows how	Lecture	written	F&S	III	

CO1	Perform meditation and observe the changes at physical and mental state	Psychomotor/ precision	DK	Knows how	Hands on training	Practicals	S	III	
Topic 14.- Vignanamaya Kosam (Intellectual Sheath)					(Lecture:- 5 hours, Non Lecture 2 hours)				
CO1	Define vignanamayakosam and explain its correlation with modern science	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	III	Modern Physiology
CO1	State the four types of body according to Tirumandiram	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	III	
CO1	Describe the role of self-realization upon soul (arivu) in vignanamayakosam	Cognitive/ Comprehensive	MK	Knows	Lecture, Group discussion	Written	F&S	III	
CO1	Explain the role of anthakaranam in vignanamayakosam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Define vinai	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	III	
CO1	Describe the functions of kundalini shakthi in three mandalams	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Explain the relationship between three gunas and five avathais	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Explain avathai based on tirumandiram	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Describe kundalini shakthi	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Explain how vatha humor acts in five kosam	Cognitive/ Comprehensive	MK	Knows	seminar	Written	F&S	III	
CO1	Compare the functioning of ten nadigal to nerve plexus	Affective/ Valuing	MK	Knows	Group discussion	Written/ Viva voice	F&S	III	
CO1	Compare the functioning of ten vaayukkal to nerve plexus	Affective/ Valuing	MK	Knows	Lecture	Written /Viva voice	F&S	III	Modern Physiology
CO1	Describe pagutharivu (discriminating knowledge)	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
Topic 15- Aananthamaya Kosam (Blissful Sheath)					(Lecture:- 4 hours, Non Lecture 2 hours)				

CO1	Define Ananthamayakosam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	III	
CO1	Explain the formation of Ananthamaya kosam	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Summarize the final outcome of spiritual attainment	Cognitive / understand	MK	Knows	Lecture	Written	F&S	III	
CO1	Elaborate the ways to attain salvation (Self-realization, attanga yoga, muppu, kayakarpam)	Cognitive/ knowledge	MK	Knows	Lecture	Written	F&S	III	
CO1	Describe spiritual attainment	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	Define Self-realization(Arivu)	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	III	
CO1	Explain the benefits of Self realization	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F&S	III	
CO1	Define Muppu	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	III	
CO1	State the Synonyms of Muppu	Cognitive/ knowledge	MK	Knows	Lecture	Viva voice	F&S	III	
CO1	Summarize the uses of Yoga Muppu	Cognitive /understand	MK	Knows	Group discussion	Written	F&S	III	
sCO1	Describe Laadam (supra chiasmatic nucleus)	Cognitive/ Comprehensive	MK	Knows	Lecture	written	F	III	
CO1	Justify how removal of Edanai leads to attain salvation	Affective/ Valuing	MK	Knows	Group discussion	Written	F	III	
CO1	Explain Siddhars longevity hormone-Ambrosia	Cognitive/ Comprehensive	DK	Knows	Lecture	Written	F	III	
CO1	Elaborate the role of Attangayoga in Ananthamaya kosam	Cognitive/ knowledge	MK	Knows	Lecture	Written	F	III	
CO1	Define Kayakarpam	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F&S	III	Sirappu maruthuvam
CO1	Explain the effects of kayakarpam in body for longevity	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F&S	III	
CO1	State the benefits of yoga in longevity	Cognitive/ knowledge	MK	Knows how	Lecture / video clips	Written/Viva voice	F&S	III	
CO1	Explain Death and the ways to prevent it.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	III	

UDAL THATHUVAM (HUMAN PHYSIOLOGY)

PAPER II – THEORY

A3 Course outcom e	B3 Learning Objective (At the end of the session, the Students should be able to)	C3 Domain	D3 Must to know/ desire to know/ Nice to know	E3 Level shows/ Know s how/ Know s	F3 T-L method	G3 Assessment	H3 Formative / summative	I3 Term	J3 Integration
Topic 1- GENERAL PHYSIOLOGY					(Lecture:- 3 hours; Non Lecture –1 hours)				
CO6	Describe the importance of body Homeostasis. Control system of the body	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	I	Udal Thathuvam (H)
CO6	Explain the positive and negative feedback mechanism of the body	Cognitive/ Comprehensive	NK	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6	State the function of Cell and its organelles	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6, CO8	Define Transport across cell membrane-Trans membrane potential	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	I	Pharmacolog y & Clinical (V)
CO6, CO8	Discuss alkalosis and acidosis	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	I	
TOPIC 2 – BLOOD AND BODY FLUIDS					(Lecture:- 10 hours; Non Lecture – 15 hours)				
CO6	Describe the normal composition of Blood and plasma	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	I	

CO6	Comprehend Body fluids, ECF & ICF	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6	Explain Difference between plasma and serum	Cognitive/ Comprehensive	DK	Knows How	Lecture	Written/ Viva voice	F & S	I	
CO6, CO7, CO8	Discuss Edema, Electrolyte Imbalance, Dehydration, Water intoxication	Cognitive/ Comprehensive	NK	Knows How	Lecture SGD/ ECE	Written/ Viva voice	F	I	
CO6, CO8	Define Plasma Proteins	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	I	Bio-Chemistry (H)
CO6	Erythrocytes – Erythropoiesis	Affective/ Valuing	MK	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6	Describe the factors regulating/ affecting erythropoiesis	Cognitive/ Comprehensive	MK	Knows	Lecture PPT	Written/ Viva voice	F & S	I	
CO6	Describe Life span & destruction of RBC	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6	List the functions of RBC	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6, CO7	Describe Haemoglobin and 'Fe' Metabolism, Abnormal haemoglobin derivatives	Cognitive/ knowledge	MK	Knows	Lecture / CBL	Written/ Viva voice	F & S	I	Bio-Chemistry (H)
CO6, CO8	Discuss the variations in number, size, shape, structure of Red blood cells.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	I	Bio-hemistry (H)
CO6, CO8	Applied physiology- Anemia, Jaundice Polycythemia	Cognitive/ knowledge	DK	Knows How	Lecture/ SDG /ECE	Written/ Viva voice	F & S	I	
CO6	Define Erythrocyte Sedimentation	Cognitive/ knowledge	MK	Knows How	Lecture	Written/ Viva voice	F & S	I	

	Rate (ESR)								
CO6	State the normal Total & Differential count of WBC Leucocytes - Classification, functions, formation, fate of WBC	Cognitive/ knowledge	MK	Knows	Lecture / SGD	Written/ Viva voice	F & S	I	
CO6	Classification of WBCs- Granulocytes Agranulocytes	Cognitive/ knowledge	MK	Knows	Lecture	Written	F & S	I	
CO6	Describe the morphology and functions of neutrophils, eosinophils, basophils, lymphocytes, monocytes	Cognitive/ Comprehensive	MK	Knows	Lecture / Demonstration	Written	F & S	I	
CO6	Recall the Role of neutrophil & macrophage in inflammation	Cognitive/ knowledge	DK	Knows	Lecture / SGD/ECE	Written	F & S	I	
CO6, CO7, CO8	Describe the differential leucocytes count	Cognitive/ Comprehensive	MK	Knows How	Lecture and Video clips	Written/ Viva voice	F & S	I	
CO6, CO7, CO8	List Conditions in which total leucocytes counts each type of WBC is increased or decreased	Cognitive/ knowledge	MK	Knows	Lecture Group Discussion	Written/ Viva voice	F & S	I	
CO6, CO8	Applied physiology: Leukemia and Leucopenia	Cognitive/ knowledge	DK	Knows How	Lecture	Written/ Viva voice	F & S	I	Clinical (V)
CO6	Define Immunity, Classify immunity and state the differences between innate and acquired immunity	Cognitive/ knowledge	MK	Knows	Lecture	Written / Viva voice	F & S	I	
CO6	State the cells and mechanisms involved in cell	Cognitive/ knowledge	MK	Knows	Lecture	Written / Viva voice	F & S	I	

	mediated immunity								
CO6	State the cells and mechanisms involved in humoral immunity	Cognitive/ knowledge	MK	Knows	Lecture	Written / Viva voice	F & S	I	
CO6	Define Complement system; Monocyte -Macrophage System (Reticulo endothelial system)	Cognitive/ knowledge	MK	Knows	Lecture	Written / Viva voice	F & S	I	
CO6	Applied physiology: Allergy, Auto immune diseases	Cognitive/ knowledge	DK	Knows	Lecture SGD, ECE	Written/ Viva voice	F	I	Clinical (V)
CO6	Describe the formation, composition and functions of lymph	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	I	
CO6	Discuss the pathophysiology of lymphedema	Cognitive/ Comprehensive	DK	Knows	Lecture	Written/ Viva voice	F	I	
CO6	Describe Platelets formation, Functions of Platelets	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6	Describe the Events in Haemostasis and its Mechanism	Cognitive/ knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6	List the clotting factors and explain pathways of blood coagulation	Cognitive/ Comprehensive	MK	Knows	Lecture SGD	Written/ Viva voice	F & S	I	
CO6, CO7, CO8	Applied physiology: Thrombocytopenia, Hemophilia, Purpura, Von Willebrand disease	Cognitive/ knowledge	DK	Knows	Lecture SGD, ECE	Written/ Viva voice	F & S	I	

CO6	Describe bleeding time by Duke's method and clotting time by capillary method of Wright	Cognitive/ Comprehensive	MK	Knows	Lecture SGD	Viva voice	F & S	I	
CO6	Define Prothrombin Time-Thrombin Time	Cognitive/ knowledge	NK	Knows	SGD/ECE	Viva voice	F & S	I	
CO6	List the anti-coagulants used	Cognitive/ knowledge	DK	Knows	Lecture SGD	Viva voice	F	I	Clinical
CO6	List the importance of blood groups	Cognitive	MK	Knows	Lecture	Written/ Viva voice	F & S	I	Clinical (V)
CO6	Describe the ABO system of blood grouping	Cognitive/ Comprehensive	Mk	Knows	Lecture	Written/ Viva voice	F & S	I	Practical
CO6	Explain the mechanism and consequence of ABO & Rh incompatibility-Cross matching	Cognitive/ Comprehensive	Mk	Knows	Lecture SGD/ ECE	Written/ Viva voice	F & S	I	Blood Bank Visit
CO6	Describe the blood grouping/typing using finger prick method or on a provided blood sample	Cognitive/ Comprehensive	Mk	Knows	Lecture	Written/ Viva voice	F & S	I	
CO6	Describe Erythroblastosis Fetalis and discuss the preventive & treatment aspects	Cognitive/ Comprehensive	DK	Knows	Lecture/SGD/ ECE	Written/ Viva voice	F & S	I	Clinical (V)
Topic 3 – MUSCLE PHYSIOLOGY (Lecture:- 4 hours; Non Lecture-1hours)									
CO6	Classification of Muscles. Properties of Skeletal muscles & Smooth muscle.	Cognitive/ Understand	MK	Knows	Lecture	Written	F & S	I	Anatomy (H)
CO6	Comparison between smooth, skeletal and	Cognitive/ Understand	DK	Knows	Lecture	Written	F & S	I	

	cardiac muscle								
CO6	Explain the Changes during contraction and relaxation of Skeletal muscles - Excitation Contraction and Coupling	Cognitive/ Understand	MK	Knows	Lecture	Written	F & S	I	
CO6	Describe the Factors affecting the force of contraction	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	I	
CO6	Explain the Genesis of resting membrane potential & Action potential	Cognitive/ Understand	MK	Knows	Lecture	Written	F & S	I	
CO6	List the Properties of nerve-fibers	Cognitive/ Knowledge	MK	Knows	Lecture	Written/ Viva voice	S & F	I	
CO6	Explain the Functional anatomy of neuromuscular junction	Cognitive/ Understand	MK	Knows	Lecture	Written	F	I	Anatomy (H)
CO6	Define Neuromuscular transmission	Cognitive/ Knowledge	MK	Knows	Lecture	Written/ Viva voice	S&F	I	
CO6, CO8	Applied physiology – Myasthenia gravis – Muscular dystrophy	Cognitive/ Knowledge	DK	Knows	Lecture/ ECE	Written	S & F	I	
TOPIC 4 –GASTRO INTESTINAL SYSTEM					(Lecture:- 7 hours, Non Lecture 5 hours)				
CO6	Define GIT	Cognitive/ Knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	Udal Thathuvam (H)
CO6	Describe the Motility of GIT: Enteric Nervous system	Cognitive/ Knowledge	MK	Knows how	Lecture	Written/ Viva voice	F & S	II	
CO6	Describe the process of mastication	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	

CO6	Explain the process of Deglutition.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Define Achalasia Cardia	Cognitive/ Knowledge	DK	Knows how	Lecture / ECE/ PBL/	Written/ Viva voice	F & S	II	
CO6	Define Gastro-esophageal reflux disease (GERD)	Cognitive/ Knowledge	NK	Knows how	Lecture / ECE/ PBL	Written/ Vivo-voice	F & S	II	
CO6	Describe types of Salivary glands & their function of Saliva	Cognitive/ Comprehensive	MK	Knows how	Lecture	Written/ Viva voice	F & S	II	Anatomy (V)
CO6	List the Composition & function of Saliva	Cognitive/ Knowledge	DK	Knows how	Lecture	Written/ Viva voice	F & S	II	
CO6	Explain Hypo Salivation, Hyper Salivation, Xerostomia, Dysphagia	Cognitive/ Comprehensive	NK	Knows how	Lecture	Written/Viva voice	F & S	II	Clinical (V)
CO6	Describe the composition and functions of gastric secretion	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Explain the mechanism of gastric acid secretion	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Discuss regulation of gastric secretion	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Define the Gastritis, Vomiting, Vomiting reflex- Gastric Atrophy - Zollinger Ellison syndrome - Peptic ulcer	Cognitive/ knowledge	DK	Knows how	Lecture Small Group Discussion	Written/ Viva voice	F & S	II	Clinical (V)
CO6	Describe Secretion,	Cognitive/	MK	Knows	Lecture	Written/	F & S	II	

	composition and functions of Liver	Comprehensive				Viva voice			
CO6	Explain the portal system	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Define Jaundice, Cirrhosis of Liver, Steatorrhea	Cognitive/ knowledge	DK	Knows how	Lecture Small Group Discussion	Written/ Viva voice	F & S	II	Clinical (V)
CO6	State the function and factors regulating Gall Bladder secretion	Cognitive/ Knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Explain how secretion of Bile is regulated- Enterohepatic circulation	Cognitive/ Comprehensive	DK	Knows how	Lecture / SG D	Written/ Viva voice	F & S	II	
CO6	State the composition of gall stones and factors involved in the formation of gall stones	Cognitive/ Knowledge	NK	Knows how	Lecture	Written/ Viva voice	F & S	II	
CO6	Describe Secretion, composition and functions of Pancreas	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Describe Secretion, composition and functions of Small intestine	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Describe Secretion, composition and functions of Large Intestine	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	

CO6	Describe the Movement of Gastrointestinal tract, Defecation reflex	Cognitive/ Knowledge	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Explain Diarrhoea, Celiac disease -Mal absorption syndrome - Constipation - Ulcerative colitis, Crohn's diseases, Appendicitis, Gallstone, Hepatitis, Pancreatitis	Affective/ Valuing	DK	Knows how	Lecture	Written/ Viva voice	F & S	II	Clinical
CO6	Describe the Digestion and Absorption of Carbohydrates, Proteins and fat	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	GI Hormones	Affective/ Valuing	DK	Knows how	Lecture /SGD	Written/ Viva voice	F & S	II	
Topic 5- ENDOCRINOLOGY (Lecture: - 6 hours; Non Lecture 1 hours)									
CO6	Describe & differentiate the mechanism of action of steroid, protein and amine hormones	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo-voice	F & S	II	
CO6	Describe the synthesis, secretion, transport, physiological actions regulation and effect of altered (hypo and hyper) secretion of hypothalamus pituitary gland, thyroid gland, parathyroid gland, adrenal gland and pancreas	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo-voice	F & S	II	
CO6	Describe the physiology of	Cognitive/	MK	Knows	Lecture	Written/	F & S	II	

	Thymus & Pineal Gland	Comprehensive				Vivo-voice			
CO6, CO7, CO8	Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas, Growth hormone	Cognitive/ Comprehensive	MK	Knows	Lecture/E CE/ PBL/ CBC	Written/ Vivo-voice	F & S	II	Clinical (V)
CO6	Gigantism - Acromegaly - Dwarfism - Diabetes Insipidus - Hyperthyroidism - Hypothyroidism - Goitre- Osteoporosis -Osteomalacia- Rickets - Diabetes mellitus type I and II - Hyperinsulinism- Cushing syndrome - Addison's disease - Pheochromocytoma.	Affective/ Valuing	DK	Knows how	Lecture	Written/ Viva voice	F & S	II	Clinical
Topic 6 - REPRODUCTIVE SYSTEM (Lecture:- 4 hours; Non-Lecture 1 hours)									
CO6, CO8	Describe and discuss puberty: onset, progression, stages; early and delayed puberty and outline adolescent clinical and psychological association.	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo-voice	F & S	III	
CO6, CO8	Describe male reproductive system: functions of testis and control of spermatogenesis & factors modifying it	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo-voice	F & S	III	
CO6	Describe female reproductive system:(a)	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo-voice	F & S	III	

	functions of ovary & its control,(b) oogenesis (c) menstrual cycle - hormonal, uterine and ovarian changes								
CO6	Describe the Functions and Physiological effects of hormones like estrogen, progesterone, prolactin, oxytocin	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo-voice	F & S	III	
CO6, CO7, CO8	Describe the contraceptive methods for male and female. Discuss their advantages & disadvantages	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo-voice	F & S	III	
CO6	Describe and discuss the fertilization, physiology of pregnancy, parturition & lactation	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo-voice	F & S	III	
CO6, CO7, CO8	Discuss the normal semen analysis report including (a) sperm count, (b) sperm morphology c) sperm motility, as per WHO guidelines and discuss the results	Cognitive/ Comprehensive	MK	Knows	Lecture/ ECE/ PBL/ CBC	Written/ Vivo-voice	F & S	III	
CO6	Describe Male andropause - Extirpation of testes - gonadism - Aspermia - Azoospermia - Oligospermia - Hematospermia - Abnormal menstruation - Post menopausal syndrome –	Affective/ Valuing	DK	Knows how	Lecture	Written/ Viva voice	F & S	III	Clinical

	Infertility, Reproductive ageing – Male & Female, Prostate enlargement								
Topic 7- EXCRETORY SYSTEM					(Lecture:- 8 hours; Non Lecture- 4 hours)				
CO6	Describe the structure and functions of kidney	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo voice	F & S	II	
CO6	Describe the structure, types and functions of nephron, juxta glomerular apparatus and role of renin-angiotensin system	Cognitive/ Comprehensive	MK	Knows	Lecture/S GD/ Chart	Written/ Vivo voice	F & S	II	
CO6	Describe the mechanism of urine formation involving processes of filtration, tubular reabsorption & secretion; concentration and diluting mechanism	Cognitive/ Comprehensive	MK	Knows	Lecture/ SGD	Written/ Vivo voice	F & S	II	
CO6	Discuss the auto regulation of renal circulation	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo voice	F & S	II	
CO6	Explain the Mechanism of Reabsorption of glucose, water, sodium, bicarbonate in renal tubules	Cognitive/ Understand	MK	Knows	Lecture/ SGD	Written/ Vivo voice	F & S	II	
CO6	Explain the actions of hormones on renal tubules	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo voice	F & S	II	Pharmacology (V)
CO6	Describe the Role of kidneys in acid base balance	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo voice	F & S	II	

CO6, CO8	Describe the innervations of urinary bladder, physiology of micturition and its abnormalities	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo voice	F & S	II	
CO6, CO8	Describe & discuss the significance & implication of Renal clearance	Cognitive/ Comprehensive	MK	Knows	Lecture/ ECE/ CBL	Written/ Vivo voice	F & S	II	
CO6, CO8	Describe and discuss Renal Function test	Cognitive/ Comprehensive	MK	Knows	Lecture/E CE/ SGD	Written/ Vivo voice	F & S	II	
CO6, CO8	Describe cystometry and discuss the normal cystometrogram	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo voice	F & S	II	
CO6, CO8	Skin and its functions, Body Temperature and Thermoregulation	Cognitive	MK	Knows	Lecture	Written/ Vivo voice	F & S	II	
CO6	Diabetes insipidus - Osmotic diuresis - Polyuria - Renal failure. Hyperthermia, Hypothermia.	Affective/ Valuing	DK	Knows how	Lecture	Written/ Viva voice	F & S	II	Clinical
Topic 8 - RESPIRATORY SYSTEM					(Lecture:- 10 hours, Non Lecture- 4 hours)				
CO6, CO7	Describe the functional anatomy of respiratory tract, Respiratory unit, Non - Respiratory Functions of Respiratory Tract	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Vivo voice	F & S	II	
CO6	Describe the mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities,	Cognitive/ Comprehensive	MK	Knows	Lecture/ Small Group Discussion	Written/ Vivo voice	F & S	II	

	alveolar surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs								
CO6, CO7	Describe and discuss Spirometry and lung function tests & their clinical significance	Cognitive/ Comprehensive	MK	Knows	Lecture/ Skill Assessment	Written/ Vivo voice	F & S	II	Clinical (V)
CO6	Describe and discuss the transport of respiratory gases: Oxygen and Carbon dioxide	Cognitive/ Comprehensive	MK	Knows	Lecture/S GD	Written/ Vivo voice	F & S	II	
CO6	Explain Regulation of Respiration	Cognitive/ Understand	MK	Knows How	Hands on Training	Written / Viva voice	F & S	II	
CO6	Demonstrate the clinical examination of the respiratory system in a normal volunteer	Cognitive/ Knowledge	MK	Knows	Lecture/Skill Assessment	Written/ Vivo voice	F & S	II	
CO6	Describe and discuss the pathophysiology of Apnea – Asphyxia - Dyspnea - Cyanosis-Hypoxia - Hyperapnea, Hypoapnea - Periodic breathing - Pulmonary oedema - Pleural effusion - Emphysema - Bronchial asthma - ARDS (Acute Respiratory Distress	Cognitive/ Comprehensive	MK	Knows	Lecture	Written / Vivo voice	F & S	II	

	Syndrome.),Disturbances of respiration								
CO6	Describe Respiratory changes with altitude and during exercise	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	Sports physiology (V)
Topic 9 - CARDIOVASCULAR SYSTEM					(Lecture: 10 Hours; Non Lecture:- 5 Hours)				
CO6	Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system	Cognitive/ Comprehensive	MK	Knows	Lecture Video clipping	Written/ Viva voice	F & S	II	
CO6	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Discuss the events occurring during the cardiac cycle	Cognitive/ Comprehensive	MK	Knows	Lecture Chart	Written/ Viva voice	F & S	II	
CO6	Describe the different heart sounds	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6	Demonstrate Auscultation Areas and discuss the Applied Physiology related with Heart Sounds	Cognitive/ Comprehensive	MK	Knows How	Hands on Training	Written/ Viva voice	F	II	
CO6	Describe generation, conduction of cardiac impulse	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO6	Describe the physiology of electrocardiogram (ECG), its applications	Cognitive/ Comprehensive	MK	Knows	Lecture and Reference	Written/ Viva voice	F & S	II	

					Images				
CO6	Describe abnormal ECG, arrhythmias, heart block and myocardial Infarction	Cognitive/ Comprehensive	MK	Knows	Lecture and Reference Images	Written/ Viva voice	F & S	II	
CO6	Describe and discuss haemodynamics of circulatory system	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO6	Describe the arterial blood pressure	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO6	Describe and discuss local and systemic cardiovascular regulatory mechanisms	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	II	
CO6	Define and describe Cardiac Output, Stroke Volume, Minute Volume, Cardiac Index, Ejection fraction, Cardiac Reverse	Cognitive/ knowledge	MK	Knows	Lecture	Written/ ECE	F & S	II	Clinical Echo cardiogram
CO6, CO7	Discuss the physiological and pathological variations in cardiac output	Affective/ Valuing	MK	Knows	Lecture	Written	F & S	II	
CO6, CO7	Describe the factors affecting heart rate, regulation of cardiac output & blood pressure	Cognitive/ Comprehensive	DK	Knows	Lecture	Viva voice	F & S	II	
CO6, CO7	Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	II	

	splanchnic circulation								
CO6, CO7	Describe and Discuss about the cardiovascular adjustments during exercise, yoga and meditation	Cognitive/ Comprehensive	DK	Knows	Lecture	Written/ Viva voice	F & S	II	
CO6, CO7	Describe the patho-physiology of shock, syncope and heart failure	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	II	
CO6, CO7	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	Psychomotor/ control	MK	Knows How	Hands on Training	Written/ Viva voice	F & S	II	
CO6	Record and interpret normal ECG in a volunteer or simulated environment	Psychomotor/ control	DK	Knows How	Hands on Training	Viva-voice	F & S	II	Practical
CO6	Observe cardiovascular autonomic function tests in a volunteer or simulated environment	Psychomotor/ Imitation	NK	Knows How	Hands on Training	Viva voice	F & S	II	
CO6	Demonstrate the clinical examination of the cardiovascular system in a normal volunteer or simulated environment	Psychomotor/ Imitation	MK	Knows How	Hands on Training	Viva voice	F & S	II	
CO6	Describe Reduplication of	Cognitive/	MK	Knows	Lecture	Written / Vivo	F & S	II	

	First and second heart sounds - Hypertension - Hypotension - Pulsus deficit - Pulsus alternans - Anacrotic pulse - Pulsus paradoxus - Water hammer pulse - Patent ductus arteriosus - Myocardial Ischemia - Myocardial infarction - Angina pectoris - Stroke - Varicose veins- Haemorrhage	Knowledge				voice			
Topic 10- CENTRAL NERVOUS SYSTEM (Lecture :- 13 Hours, Non Lecture:- 10 Hours)									
CO6	Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines	Cognitive/ Comprehensive	MK	Knows	Lecture with reference images	Written/ Viva voice	F & S	III	
CO6	Describe the types, functions & properties of nerve fibers	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO6	Describe the degeneration and regeneration in peripheral nerves	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO6	Describe the structure of neuro-muscular junction and transmission of impulses	Cognitive/ Comprehensive	MK	Knows	Lecture with reference images	Written/ Viva voce	F & S	III	
CO6	Discuss the action of neuro-muscular blocking agents	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written/ Viva voce	F & S	III	Pharmacology(V)
CO6	Describe the pathophysiology of	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written/ Viva voce	F & S	III	Clinical (V)

	Myasthenia gravis								
CO6	Describe and discuss the organization of nervous system	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO6	Describe and discuss the functions of synapse, reflex, receptors, Spinal reflex	Cognitive/ Comprehensive	MK	Knows	Lecture with reference images	Written/ Viva voice	F & S	III	
CO6	Describe and discuss Spinal cord, & its functions	Cognitive/ Comprehensive	MK	Knows	Lecture with reference images	Written/ Viva voice	F & S	III	
CO6	Describe CSF – formation, circulation and functions	Cognitive/ Knowledge	MK	Knows	Lecture with reference images	Written/ Viva voice	F & S	III	
CO6	Describe and discuss somatic sensations	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	III	
CO6	List the Sensory tracts and its functions	Cognitive/ Knowledge	MK	Knows	Lecture	Written	F & S	III	
CO6	List the Motor tracts & its functions	Cognitive/ Knowledge	MK	Knows	Lecture	Written	F & S	III	
CO6	Describe and Discuss the mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus	Cognitive/ Comprehensive	MK	Knows How	Lecture Small Group Discussion	Written	F & S	III	
CO6	Describe the Physiology of Pain	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written	F & S	III	
CO6	Describe and Discuss structure and functions of	Cognitive/ Comprehensive	MK	Knows	Lecture with reference	Written	F & S	III	

	reticular activating system, autonomic nervous system (ANS)				images				
CO6	Describe and Discuss the functions of Internal Capsule And Brain Stem	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/Viva voice	F & S	III	
CO6	Describe and Discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities	Cognitive/ Comprehensive	MK	Knows	Lecture with reference images	Written	F & S	III	Anatomy (H)
CO6	Describe the Physiology of Sleep	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	III	
CO6	Describe and discuss behavioral characteristics during sleep and mechanism responsible for its production	Cognitive/ Comprehensive	MK	Knows	Lecture with reference images	Written	F & S	III	
CO6	Describe and discuss the physiological basis of memory, learning and speech	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	III	
CO6	Describe and discuss chemical transmission in the nervous system. (Outline the psychiatry element).	Cognitive/ Comprehensive	MK	Knows	Lecture Small Group Discussion	Written	F & S	III	
CO6	Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system,	Psychomotor/ Imitation	Mk	Knows How	Tutorial Hands on Training/ CBL	Viva voice	F	III	Practical

	motor system, reflexes, cranial nerves in a normal volunteer or simulated environment								
CO6	Describe Syringomyelia - Tabes Dorsalis - Multiple Sclerosis - Disc prolapse - Hemiplegia - Parkinson disease - Wilson disease - Chorea - Motion sickness - Insomnia - Aphasia - Dysarthria – Dysphonia – Narcolepsy – Nocturnal Enuresis - Hydrocephalus	Cognitive/ Knowledge	DK	Knows how	Lecture	Written/ Viva voice	F	III	Clinical
Topic 11- SPECIAL SENSES (Lecture:- 5 Hours, Non Lecture:- 3 Hours)									
CO6	Describe and discuss perception of Smell	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F	III	
CO6	Describe and discuss pathophysiology of altered smell sensation	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written/ Viva voice	F & S	III	Clinical (V)
CO6	Describe and Discuss perception of Taste	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F	III	
CO6	Describe and discuss pathophysiology of altered taste sensation	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written/ Viva voice	F & S	III	
CO6	Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	III	
CO6	Describe and discuss	Cognitive/ Comprehensive	MK	Knows How	Lecture	Written/ Viva voice	F & S	III	

	pathophysiology of deafness.								
CO6	Demonstrate and Discuss hearing tests	Psychomotor/ control	DK	Knows How	Hands on Training/ ECE	Viva voice	F	III	
CO6	Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light reflex	Cognitive/ Comprehensive	MK	Knows	Lecture with reference image	Written	F & S	III	
CO6	Describe and discuss the physiological basis of lesion in visual pathway	Cognitive/ Comprehensive	MK	Knows	Lecture	Written/ Viva voice	F & S	III	
CO6	Describe and discuss auditory & visual evoke potentials	Cognitive/ Comprehensive	MK	Knows	Lecture	Written	F & S	III	Clinical
CO6	Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer/ simulated environment	Psychomotor/ control	NK	Knows How	Hands on Training/ ECE	Viva voce	F & S	III	Clinical
CO6	Cataract - Glaucoma - Color blindness - Errors of Refraction - Auditory defects - Ageusia – Anosmia - Horner's Syndrome	Affective/ Valuing	DK	Knows how	Lecture	Written/ Viva voice	F & S	III	Clinical

PRACTICAL – UDAL THATHUVAM (HUMAN PHYSIOLOGY)

PAPER I & II

MARK: 100

HOURS - 210

SN	List of Topics (Practical)	Term	Marks 100	Practical and Non-Lecture hours
	MAJOR PRACTICAL		30	
P1	Examination of Naadi for the given person	I		20
P2	Examination of Udal Kattugal (Physical constituents) for the given person	II		20
P3	Examination of Envagai Thervu for the given person	II		20
P4	Examination of Udal Iyal (Temperament) for the given person	III		20
	MINOR PRACTICAL		20	
P5	Suvaigal - 2 spotters each	II		10
P6	Unavu Porutkal- Gunangal - 2 spotters each	II		10
	Major Practicals		30	
P1	Estimation of Haemoglobin	I		8

P2	Total RBC count	I		10
P3	Total WBC count	I		15
P4	Differential Leucocytes Count	I		15
P5	Determination of ESR	I		6
	Minor practicals		20	
Minor P1	Determination of Bleeding Time	II		5
Minor P2	Determination of Clotting Time	II		6
Minor P3	Blood grouping and Rh-typing	II		6
Minor P4	Measurement of Body Temperature	II		4
Minor P5	Measurement of Blood Pressure	II		5
Minor P6	Examination of Deep Tendon Reflex	III		5
Minor P7	Examination of Superficial Reflex	III		5
Minor P8	Examination of Cranial Nerves	III		5
Minor P 9	Examination of Cardio vascular System	III		5
Minor P 10	Examination of Respiratory System	III		5
Minor P 11	Examination of Gastro Intestinal System	III		5
TOTAL				210

Table 4. Learning Objectives (Practical) of course <SIDUG – UT>

UDAL THATHUVAM (HUMAN PHYSIOLOGY)									
PRACTICAL									
A4 Course outcome	B4 Learning Objective	C4 Domain	D4 Must to know/ desire to know/ Nice to know	E4 Level shows/Kno ws how/Know s	F4 T-L method	G4 Assessment	H4 Formative /summative	I4 Term	J4 Integration
Practical 1- Examination of Naadi					Practical/ Clinical 15 hours / other activity – 5 hours				
CO3	Demonstrate three finger pulse reading	Psychomotor/control	MK	Shows how	Hands on training	Practical	F&S	I	
CO3	Carry out the pulse reading	Psychomotor/control	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	I	

CO3	Point out the Rate, Rhythm, Character, Volume of the pulse	Psychomotor/ control	MK	Knows how	Lecture, Bed side clinics , VIDEO CLIPS	Practical, Viva-voice	F&S	I	Modern physiology
CO3	Identify the pulse type of the individual	Affective/ Valuing	MK	Knows how	Self-study	Practical, Viva-voice	F&S	I	
Practical 2 - Examination of Udal Kattugal (Physical constituents)					Practical/ Clinical 15 hours / other activity 5 hours				
CO2	Carry out examination to assess the functions of Saaram/Nutrient juice	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Carry out examination to assess the functions of Senneer/Blood	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Carry out examination to assess the functions of Ooun/Muscle	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Carry out examination to assess the functions of Kozhuppu/Adipose Tissue	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	

CO2	Carry out examination to assess the functions of Enbu/ Bone & Teeth	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Carry out examination to assess the functions of Moolai/Nervous Tissue	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Carry out examination to assess the functions of Sukkilam/ Suronitham/ Semen or Ovum	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Point out the conclusion about functioning of seven Physical constituents	Psychomotor/ Automatism	MK	Knows how	Lecture	Practical, Viva voice	F&S	II	
Practical 3- Examination of Envagai Thervu					Practical/ Clinical 15 hours / other activity 5 hours				
CO2	Observe the functioning, morphology of Naa	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	

CO2	Observe Niram	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Observe Mozhi	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Observe the functioning, morphology of Vizhi	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics, VIDEO CLIPS	Practical	F&S	II	
CO2	Observe the Physical, chemical characters of Malam	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Observe the Physical, chemical characters of Moothiram	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Observe the rate, rhythm, character, volume, Type of Naadi	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	

CO2	Observe Sparisam	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	II	
CO2	Integrate the result based on the above examinations	Psychomotor/ Automatism	MK	Knows how	Self-Study	Practical, Viva voice	F&S	II	
Practical 4 - Examination of Udal Iyal(Temperament)					Practical/ Clinical 15 hours / other activity 5 hours				
CO2	Construct pointers to assess the Vatha Temperament	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	III	
CO2	Construct pointers to assess the Pitha Temperament	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	III	
CO2	Construct pointers to assess the KaphaTemperament	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical	F&S	III	
CO2	Point out the Temperament of the given individual	Psychomotor/ Automatism	MK	Knows how	Lecture, Bed side clinics	Practical, Viva-voice Practical, Viva-voice	F&S	III	

Practical 5 –Suvaigal				Practical/ Clinical 5 hours / other activity 5hours					
CO2	Identify the given spotter	Psychomotor/ Imitation	MK	Knows how	Practical/spott ers	Practical	F&S	II	
CO2	Identify the Taste of the given spotter	Psychomotor/ Imitation	MK	Knows how	Practical/spott ers	Practical	F&S	II	
CO2	Express the five elements present, synergetic, Antagonistic taste, Normal, Adverse features of that particular taste.	Psychomotor/ Imitation	MK	Knows how	Lecture, Practicals	Practical, Viva-voice	F&S	II	
Practical 6 - Unavu Porutkal- Gunangal				Practical/ Clinical 5hours or other activity 5 hours					
CO1	Identify the given Raw drug	Psychomotor/ Imitation	MK	Knows how	Practical/ spotters	Practical	F&S	II	
CO1	Identify the Gunam (Cosmic qualities)of the given Raw drug	Psychomotor/ Imitation	MK	Knows how	Practical/ spotters	Practical	F&S	II	

CO1	Express the Udal, Uyir Thathu related to the Gunam.	Psychomotor/ Imitation	MK	Knows how	Lecture, Practicals	Practical, Viva-voice	F&S	II	
CO1	State the form in which the Raw Drug is cooked , its benefits and Adverse effects	Cognitive/ Knowledge	MK	Knows how	Lecture, Practicals	Practical, Viva-voice	F&S	II	
Major Practical									
Practical 1- Estimation of Haemoglobin (Practical/ Clinical - 5 hours or other activity 3 hours)									
CO7	Measure the Hemoglobin content of the given blood sample	Psychomotor/ control	MK	Knows How	Demonstration, Bed side Clinics	Practical	F & S	I	Clinical -Different types of Anemia
Practical 2- Total RBC count (Practical/ Clinical 7 hours or other activity 3 hours)									
CO7	State the Method of Counting RBC and importance of performing the practical	Cognitive/ Knowledge	MK	Knows How	Demonstration	Practical	F & S	I	Hands on training

CO7	Perform and calculate the total count of RBC	Psychomotor/ control	MK	Knows How	Demonstrati on Hands on training	Practical	F & S	I	Clinical – Different types of Anemia & Polycythemia
Practical 3- Total WBC count (Practical/ Clinical 10 hours or other activity 5 hours)									
CO7	Perform and calculate the total count of WBC	Psychomotor/ control	MK	Knows How	Demonstrati on Hands on training	Practical	F & S	I	
CO7	State the normal Total count of WBC in Men and women	Cognitive/ knowledge	MK	Knows	Lecture/ Bed side Clinics	Practical	F & S	I	Give an introduction to hematological malignancies
Practical 4- Differential Leucocytes Count (Practical/ Clinical 10 hours or other activity 5 hours)									

CO7	Make a peripheral blood smear on their own blood / provided blood. Perform and interpret the differential leucocytes count using aseptic precautions	Psychomotor/ control	MK	Knows How	Demonstration, Video Clips Hands on training	Practical	F & S	I	Physiological and Clinical –alters different WBC cells
Practical 5 - Determination of ESR (Practical/ Clinical 4 hours or other activity 2 hours)									
CO7	Determine the ESR of the given blood sample	Psychomotor/ control	MK	Knows How	Demonstration Hands on training	Practical	F & S	I	

CO7	Define and state normal values for ESR in men and women. Describe the factors influencing ESR	Cognitive/ knowledge	MK	Knows How	Calculation of different indices, Video Clips	Practical and Vivo- voice	F & S	I	Look for ESR serving as an index of acute phase reaction
<u>MINOR PRACTICALS</u>									
Practical 1 - Determination of Bleeding Time					(Practical/ Clinical 3 hours or other activity 2 hours)				
CO7	Perform and interpret a simple tests of bleeding time by Duke's method on oneself by collecting blood using finger prick method using aseptic method	Psychomotor/ control	MK	Knows How	Demonstrati on Clinics	Practical	F & S	II	Show the patients with abnormal hemostasis in clinical department and enable the students to discuss causes and effects of abnormal hemostasis
Practical 2- Determination of Clotting Time					(Practical/ Clinical 4 hours or other activity 2 hours)				

CO7	Perform and interpret simple tests of clotting time by capillary method of Wright on oneself by collecting blood using finger prick method using aseptic method	Psychomotor/ control	MK	Knows How	Demonstrati on	Practical	F & S	II	Enable the students to understand the causes and effects of abnormal hemostasis
Practical 3- Blood grouping and Rh typing (Practical/ Clinical 4 hours or other activity 2 hours)									
CO7	Perform and interpret blood grouping/typing on oneself by collecting blood using finger prick method under aseptic conditions or on a provided blood sample	Psychomotor/ control	MK	Knows How	Demonstration Clinics	Practical	F & S	II	Visit to Blood Bank Storage and Cross matching Teaching may integrated with Clinical pathology
Practical 4- Measurement of Body Temperature (Practical/ Clinical 2 hours or other activity 2 hours)									
CO7	Describe and Demonstrate the method of recording Body Temperature.	Psychomotor/ control	MK	Knows How	Demonstration , Bed side Clinics	Practical	F & S	II	Explain the different types of Fever in the clinical condition

Practical 5- Measurement of Blood Pressure (Practical/ Clinical 3 hours or other activity 2 hours)									
CO7	Describe and Demonstrate the method of recording Blood Pressure.	Psychomotor/ control	MK	Knows How	Demonstration, Bed side Clinics	Practical	F & S	II	Discuss about Hypertension and Hypotension.
Practical 6- Examination of Deep Tendon Reflex					Practical/ Clinical 3 hours or other activity 2 hours				
CO7	Demonstrate how to elicit the clinically significant deep reflexes in normal subject.	Psychomotor/ control	MK	Knows How	Demonstration Clinics	Practical	F & S	III	Study of patients with postural abnormalities as a result of primitive reflexes being expressed
Practical 7- Examination of Superficial Reflex					Practical / Clinical 3 hours or other activity 2 hours				

CO7	Demonstrate how to elicit the clinically significant superficial reflexes in normal subject.	Psychomotor/ control	MK	Knows How	Demonstrati on Clinics	Practical	F & S	III	Study of patients with postural abnormalities as a result of primitive reflexes being expressed
Practical 8- Examination of Cranial Nerves					Practical/ Clinical 3 hours or other activity 2 hours				
CO7	Examine the integrity of the cranial nerves I-XII in a normal subject	Psychomotor/ control	MK	Knows How	Demonstrati on Clinics	Practical	F & S	III	Correlate with different neurological condition
Practical 9- Examination of Cardio vascular System					(Practical/ Clinical 3 hours or other activity 2 hours)				
CO7	Explain the 12 Leads in which ECG is recorded	Cognitive/ Comprehensive	MK	Knows How	Demonstrati on/ Clinics	Show method of recording ECG	F & S	III	With Clinical department for reading normal & abnormal ECGs
CO7	Describe the Clinical Examination of CVS	Cognitive/ Comprehensive	MK	Knows How	Demonstrati on/Clinics	Show method of examining radial pulse	F & S	III	With Clinical department for normal and abnormal pulse
Practical 10- Examination of Respiratory System					Practical/ Clinical 3 hours or other activity 2 hours				

Table 5. –List of Non-Lecture Teaching- Learning Methods**Udal Thathuvam – Paper I THEORY**

SN	List of Non Lecture Teaching- Learning Methods	Term (I)	Term (II)	Term (III)	TOTAL
1.	Seminars/Pedagogy	-	1	-	1
2.	Case Based Learning/Early Clinical Exposure/Hands on Training	-	4	1	5
3.	Group Discussion	4	7	5	16
4.	Self-Study	1	-	-	1
5.	CME	-	1	-	1
6.	Audio Visual Presentation/Videos	6	4	4	14
7.	Field work	1	-	-	1
8.	DOAP(Demonstrate, Observe, Assist Perform)	-	1	-	1
	TOTAL	12	18	10	40

Udal Thathuvam – Paper II

S N	List of Non Lecture Teaching- Learning Methods (THEORY)	Term (I)	Term (II)	Term (III)	TOTAL
	SGD/ECE/GBC	13	6	2	21
	PBC	-	2	-	2
	PPT	1	1	-	2
	Demonstration	2	-	-	2
	Group Discussion	-	2	2	4
	Charts/Models	-	1	-	1
	Video clips	1	-	-	1
	Reference Images	-	1	4	5
	Hands on Training	-	4	6	10
	Skill Assessment	-	2	-	2
	TOTAL	17	19	14	50

Table 6. - Assessment Summary

6 A- Number of papers and Marks Distribution

S.No.	Subject	Papers	Theory	Practical or Clinical Assessment					Grand Total
				Practical or Clinical	Viva	Electives	IA	Total	
1.	Udal Thathuvam (Human Physiology) Paper I & Paper II	2	200	100	20	10	20	150	350

6 B -Scheme of Assessment (formative and Summative)

SR.NO.	PROFESSIONAL COURSE	DURATION OF PROFESSIONAL COURSE		
		First Term (1-6 Months)	Second Term (7-12 Months)	Third Term (13-18 Months)
1	First	3 PA & First TT	3 PA & Second TT	3 PA & UE

PA: Periodical Assessment; TT: Term Test; UE: University Examinations

6 C - Calculation Method for internal assessment Marks (20 Marks)

TERM	PERIODICAL ASSESSMENT*				TERM TEST**	TERM ASSESSMENT	
	A	B	C	D	E	F	G
	1 (20)	2 (20)	3 (20)	Average (A+B+C/3) 20	Term Test (MCQ+SAQ+LAQ and Practical (Converted to 20)	Sub Total	Term Assessment
FIRST					D+E	D+E /2	

SECOND						D+E	D+E /2
THIRD					NIL		D
Final IA	Average of Three Term Assessment Marks as Shown in 'G' Column						
	<p>* Select an Evaluation Methods which is appropriate for the objectives of Topics from the Table 6 D. Convert it to 20 marks.</p> <p>** Conduct Theory (100 Marks) (MCQ (20*1 Marks), SAQ (8*5), LAQ (4*10)) and Practical (100 Marks) Then convert to 20Marks.</p>						

6 D - Evaluation Methods for Periodical Assessment

S. No.	Evaluation Methods for Periodical Assessment
1.	Practical / Clinical Performance
2.	Viva Voce, MCQs, MEQ (Modified Essay Questions/Structured Questions)
3.	Open Book Test (Problem Based)
4.	Summary Writing (Research Papers/ Samhitas)
5.	Class Presentations; Work Book Maintenance
6.	Problem Based Assignment
7.	Objective Structured Clinical Examination (OSCE), Objective Structured Practical Examination (OPSE), Mini Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedures (DOP), Case Based Discussion (CBD)
8.	Extra-curricular Activities, (Social Work, Public Awareness, Surveillance Activities, Sports or Other Activities which may be decided by the department).
9.	Small Project
10.	Other activities explained in Table 3 Column G3 as per indicated term and objective of the topic.

6 E Question Paper Pattern

First Professional BSMS Examination <SIDUG – UT>

UDAL THATHUVAM (HUMAN PHYSIOLOGY) Paper I

Time: 3 hours

Maximum Marks: 100

Instructions

All questions should be answered

		No. of Questions	Marks per Question	Total Marks
Q1	Multiple Choice Questions (MCQ)	20	1	20
Q2	Short Answer Questions (SAQ)	8	5	40
Q3	Long Answer Questions (LAQ)	4	10	40
				100

UDAL THATHUVAM (HUMAN PHYSIOLOGY) Paper II

Time: 3 hours

Maximum Marks: 100

Instructions

All questions should be answered

		No. of Questions	Marks per Question	Total Marks
Q1	Multiple Choice Questions (MCQ)	20	1	20
Q2	Short Answer Questions (SAQ)	8	5	40
Q3	Long Answer Questions (LAQ)	4	10	40
				100

6 F Distribution of Theory Exam

UDAL THATHUVAM (HUMAN PHYSIOLOGY) – Paper - I

SN	List of Topics (Theory)	Term	Marks	MCQ (1Mark)	SAQ (5 Marks)	LAQ (10 Marks)
1.	96 Thathuvam (Ninety six Fundamental Principles and Details)	I	6	YES	YES	NO
2.	PanchaboothaThathuvam (Five Elements and it's Medical aspect)	I	6	YES	YES	NO
3.	Karu Urpathi Valarchi and Dhega Ilakanam (Body Temperament)	I	6	YES	YES	NO
4.	Mukkutra Iyal (Three Humoral Theory)	I	11	YES	NO	YES
5.	Ezhu Udarthathukkal (Seven Physical constituents)	II	11	YES	NO	YES
6.	Piniari Muraimai (Envagai Thervu)	II	7	YES	YES	NO
7.	Pathinangu Vegangal (Fourteen Natural Urges)	II	6	YES	YES	NO
8.	Kosangal (Five Sheaths of Human Body)	II	2	YES	NO	NO
9.	Annamayakosam/Paruvudal (Physical Sheath/Gross body)	II	6	YES	YES	NO
10.	Manomaya Kosam (Mental Sheath, Siddhars Concept of Naadi)	II	12	YES	NO	YES
11.	Varma Physiology	II	6	YES	YES	NO
12.	Pranamaya Kosam (Respiratory Sheath)	III	11	YES	NO	YES
13.	Ayutkaalathai Vellum Vazhimuraigal (Longevity of Life)	III	6	YES	YES	NO
14.	Vignanamaya Kosam (Intellectual Sheath)	III	2	YES	NO	NO
15.	Aananthamaya Kosam (Blissful Sheath)	III	2	YES	NO	NO

UDAL THATHUVAM (HUMAN PHYSIOLOGY) – Paper – II

SN	List of Topics (Theory)	Term	Marks	MCQ (1Marks)	SAQ (5 Marks)	LAQ (10 Marks)
1.	General physiology	I	7	YES	YES	NO
2.	Blood and Body fluids	I	12	YES	NO	YES
3.	Muscle physiology	I	7	YES	YES	NO
4.	Gastrointestinal System	II	12	YES	NO	YES
5.	Endocrine System	II	12	YES	NO	YES
6.	Reproductive System	III	7	YES	YES	NO
7.	Excretory System	II	7	YES	YES	NO
8.	Respiratory System	II	7	YES	YES	NO
9.	Cardiovascular System	II	12	YES	NO	YES
10.	Nervous System	III	11	YES	YES	NO
11.	Special senses	III	6	YES	YES	NO

6 G Question paper blue print

Question Sr. No	Type of Question	Question Paper Format
Q1	<p>Multiple choice Questions (MCQ)</p> <p>20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>Must know part 15 MCQ</p> <p>Desirable to know 3 MCQ</p> <p>Nice to know 2 MCQ</p>	<ol style="list-style-type: none"> 1. Topic number 1 2. Topic number 2 3. Topic number 3 4. Topic number 4 5. Topic number 5 6. Topic number 6 7. Topic number 6 8. Topic number 7 9. Topic number 8 10. Topic number 8 11. Topic number 9 12. Topic number 10 13. Topic number 10 14. Topic number 11 15. Topic number 12 16. Topic number 13 17. Topic number 14 18. Topic number 14 19. Topic number 15 20. Topic number 15
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>7 questions from must to know</p> <p>1 questions from Desirable to know</p>	<ol style="list-style-type: none"> 1. Topic number 1 2. Topic number 2 3. Topic number 3 4. Topic number 6 5. Topic number 7 6. Topic number 9 7. Topic number 11 8. Topic number 13

	No Questions from Nice to know	
Q3	<p>Long answer Questions (LAQ) Four Questions 10 marks each All compulsory</p> <p>All questions on must know. No Questions on Nice to know and Desirable to know</p>	<ol style="list-style-type: none"> 1. Topic number 4 2. Topic number 5 3. Topic number 10 4. Topic number 12

Paper II

Question Sr. No	Type of Question	Question Paper Format
Q1	<p>Multiple choice Questions (MCQ)</p> <p>20 Questions</p>	<ol style="list-style-type: none"> 1. Topic number 1 2. Topic number 1 3. Topic number 2 4. Topic number 2 5. Topic number 3 6. Topic number 3 7. Topic number 4

	<p>1 mark each</p> <p>All compulsory</p> <p>Must know part 15 MCQ</p> <p>Desirable to know 3 MCQ</p> <p>Nice to know 2 MCQ</p>	<ol style="list-style-type: none"> 8. Topic number 4 9. Topic number 5 10. Topic number 5 11. Topic number 6 12. Topic number 6 13. Topic number 7 14. Topic number 7 15. Topic number 8 16. Topic number 8 17. Topic number 9 18. Topic number 9 19. Topic number 10 20. Topic number 11
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>7 questions from must to know</p> <p>1 questions from Desirable to know</p> <p>No Questions from Nice to know</p>	<ol style="list-style-type: none"> 1. Topic number 1 2. Topic number 3 3. Topic number 6 4. Topic number 7 5. Topic number 8 6. Topic number 10 7. Topic number 10 8. Topic number 11
Q3	<p>Long answer Questions (LAQ)</p> <p>Four Questions</p> <p>10 marks each</p> <p>All compulsory</p> <p>All questions on must know.</p> <p>No Questions on Nice to know and Desirable to know.</p>	<ol style="list-style-type: none"> 1. Topic number 2 2. Topic number 4 3. Topic number 5 4. Topic number 9

6 H Distribution of Practical Exam

Udal Thathuvam (Human Physiology)

SN	HEADS	MARKS
	MAJOR PRACTICAL - Any one	30
P1	Examination of Naadi for the given person	
P2	Examination of Udal Kattugal (Physical constituents) for the given person	
P3	Examination of Envagai Thervu for the given person	
P4	Examination of Udal Iyal (Temperament) for the given person	
	MINOR PRACTICAL	20
P5	Suvaigal - 2 spotters each	
P6	Unavu Porutkal - Gunangal - 2 spotters each	
	MAJOR PRACTICALS - Any one	30
P1	Estimation of Haemoglobin	
P2	Microscope / Total RBC count	
P3	Total WBC count	
P4	Differential Leucocytes Count	
P5	Determination of ESR	
	MINOR PRACTICALS - Any one	20
Minor P1	Determination of Bleeding Time	
Minor P2	Determination of Clotting Time	
Minor P3	Blood grouping and Rh typing	
Minor P4	Measurement of Body Temperature	
Minor P5	Measurement of Blood Pressure	
Minor P6	Examination of Deep Tendon Reflex	
Minor P7	Examination of Superficial Reflex	
Minor P8	Examination of Cranial Nerves	
Minor P9	Examination of Cardio vascular System	
Minor P10	Examination of Respiratory System	
Minor P11	Examination of Gastro Intestinal System	

	Viva-voice	20
	Electives	10
	Internal assessment	20
		Total = 150

7. References books/ Resources:

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15. “Text book of Practical Physiology”- 5th Edition, 2020- GK Pal and Pravati Pal, Universities Press (India) Pvt. Ltd.
16. Text Book of Physiology by Dir.Prof.A.K.Jain (Volume I & II)
17. “Understanding Medical Physiology” – A Text Book for Medical Students by RL Bijlani and S Manjunath
18. Best & Taylor’s Physiological Basis of Medical Practice by O.P.Tandon and Y.Tripathi
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