

**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 KOORUGAL
SUBJECT CODE: SIDUG-UK
HUMAN ANATOMY
PAPER I & II**

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



प्राणाभिसरः प्राणायतनानाम्

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



SIDUG-UK

NCISM

I Professional Siddha Maruthuva Arignar (Bachelor of Siddha Medicine and Surgery – B.S.M.S)

Subject Code: SIDUG-UK

Udal Koorugal (Human Anatomy)

Key Points

Total number of Teaching hours: 540			
Lecture hours (LH) - Theory		180 Hours	180 Hours (LH)
Paper I	90 Hours		
Paper II	90 Hours		
Non-Lecture hours (NLH) – Theory		110 Hours	360 Hours (NLH)
Paper I	54 Hours		
Paper II	56 Hours		
Non-Lecture hours (NLH) - Practical		250 Hours	

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

Curriculum Udal Koorugal (Human Anatomy)

Course Introduction

Udal Koorugal is a basic medical science subject that deals with the structural organization of the body and is known by the equivalent term "Anatomy." This subject is taught in different dimensional forms, like Gross, Microscopic, Developmental, Clinical, and Surgical Anatomy. An understanding of anatomy is key to the practice of medicine and other areas of Health. Gross anatomy (macro-anatomy), which involves investigating large structures of the body, is divided into General anatomy, Upper limb and Lower limb, Head, Neck and Brain, Thorax, Abdomen, and Pelvis. Histology (micro-anatomy), which helps to understand the details of cells and smaller structures in the body. As a result, learning anatomy from the human body's structure to the molecular level provides a proper understanding of bodily function and distinguishes how disease modifies both structure and function.

General Anatomy, General Histology, Embryology, Osteology, Myology, Angiology, Radiological and Surface Anatomy, Nervous System, Special Sense Organs, Respiratory System, Cardio-vascular System, Digestive System, Excretory System, Reproductive System, and Endocrine System are among the subdisciplines covered in Udal Koorugal. Applied anatomy, which evokes the application of anatomical knowledge to the diagnosis and treatment of disease.

In-depth knowledge and skill in Udal Koorugal will let Siddha medicos make the correct decisions for providing accurate and quality medical care. This refurbished syllabus imparts profound knowledge to identify the bio-energetic points called "Varmam," which aids in the basic approach of Varma treatment in Siddha Science. Through a thorough understanding of the Circulatory system, Lymphatic system, and Neuro-Musculo-Skeletal system, treatments like Thokkanam therapy (nine types of massage procedures), Puramaruthuvam (32 types of external therapies), and manipulation techniques such as Kombu Kattal (bone setting), Kuruthi Vangal (bloodletting) can be accomplished by Siddha medical students effectively. Similarly, the acquaintance of Udal Koorugal is crucial for performing Attai Vidal (leech therapy), the external Siddha surgical procedure. Siddha students can apply this knowledge to a variety of Siddha treatment specialties, including Siddha Yoga therapy, and extend it through interdisciplinary research. Siddhar Aruvai Maruthuvam, one of the Siddha treatment specialties, which encompasses 25 types of Siddha surgical procedures under Aruvai, Akkini, and Kaaram and covers the areas of Ophthalmology, ENT, Dentistry, and Dermatology, to perform related treatments, experience with Udal Koorugal is indispensable. The competency-based curriculum and syllabus, structured and formulated for Udal Koorugal, makes the students accomplish all course and content wise learning outcomes. The teaching and learning methods that are incorporated into the course curriculum will stimulate students' interest in studying the subject, and the assessment methods of Udal Koorugal will provide students with a positive learning experience. The Udal Koorugal knowledge gained by the students enables them to integrate with related subjects in their second and final professional sessions.

To conclude, the intensive and well-structured practical training offered in Udal Koorugal will enable the students to become more competent physicians or surgeons in Siddha medicine and inspire them to pursue a post-graduate degree in Aruvai Maruthuvam (M.D in Siddha Surgical Procedures) in the future.

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First Professional BSMS

Course Code and Name of Course

SN	Course Code	Name of Course
1	SIDUG-UK	Udal Koorugal (Human Anatomy)

Table 1: Course outcomes and matched Program outcomes

SN	A1 Course Outcome (CO) SIDUG-UK At the end of the course SIDUG-UK, the student should be able to-	B1 Matched Program outcomes (PO)
CO1.	Demonstrate the anatomical position, planes, directional terms and various postures applied in clinical examination	PO1, PO9, PO11, PO12
CO2.	Explain the basic ultra-structure of the cell, tissues, organs and its normal function	PO1, PO9, PO11, PO12
CO3.	Determine the prenatal development of gametes, fertilization, development of embryo and foetus	PO1, PO9, PO11, PO12
CO4.	Demonstrate side, sex and typical features of the bones with applied anatomy	PO1, PO6, PO9, PO11, PO12
CO5.	Describe the articular surfaces, ligaments, movements of joints with applied anatomy	PO1, PO6, PO9, PO11, PO12
CO6.	Explain the origin, insertion, actions, nerve supply of the muscles, boundaries of fossa and triangles with its applied importance	PO1, PO6, PO9, PO11, PO12
CO7.	Palpate the blood vessel, enumerates the area of supply/drainage	PO1, PO6, PO9, PO11, PO12
CO8.	Examine the Lymph nodes, access its afferents and efferent and correlate with the affected structure	PO1, PO9, PO11, PO12
CO9.	Demonstrate the anatomical landmarks topographically as well as in Radio images	PO1, PO6, PO9, PO11, PO12
CO10.	Explains the basic structure and connections of central and peripheral Nervous system	PO1, PO6, PO9, PO11, PO12
CO11.	Describe the structure of the special sense organs, pathway of perception, applied anatomy	PO1, PO6, PO9, PO11, PO12
CO12.	Demonstrate the soft parts/viscera's location, measurements, functions and applied anatomy	PO1, PO6, PO9, PO11, PO12
CO13.	Analyse the integration and regulations of various functions of endocrine organs	PO1, PO6, PO9, PO11, PO12

Table 2: Contents of the Course

Udal Koorugal (Human Anatomy) Paper I

SN	A2 List of Topics <SIDUG-UK>	B2 Term	C2 Marks	D2 LH	E2	
					NLH-T	NLH -P
1	General Anatomy and General Histology	I	6	4		4
	Anatomical position, planes, subdivisions and terminologies					
	Epithelial tissue, Connective tissue, Muscle tissue, Nervous Tissue					
2	Embryology	II	6	4	1	2
	Gametogenesis, Fertilization, Implantation					
	Placenta, Foetal circulation					
3	Osteology with Applied Anatomy		28			
3.1	Skull, Mandible, Cranial fossa, Paranasal Sinuses, Hyoid bone	II		9	8	16
3.2	Bones of the Vertebral column	III		6	6	12
	Bones of thorax					
3.3	Bones of Upper limb, Clavicle, Scapula	I		7	2	12
	Bones of Pelvis, Lower limb					
4	Arthrology with Applied Anatomy		12			
4.1	Temporomandibular joint	II		2	1	1
4.2	Inter-vertebral joints	III		1		2
4.3	Shoulder joint, Elbow joint, Wrist joint Joints of Pelvis, Hip joint, Knee joint, Ankle joint	I		4	3	7
5	Myology with Applied Anatomy		23			
5.1	Scalp	II		7	3	8
	Muscles of Facial expression and Mastication					

	Muscles of Eye ball					
	Suprahyoid and Infrahyoid muscles, Triangles of neck					
5.2	Sternocleidomastoid, Trapezius, Latissimus dorsi and name of the other muscles of back, name of the prevertebral and paravertebral muscles.	III		10	4	12
	Intercostal muscles and diaphragm					
	Anterior and Posterior Abdominal wall muscles, Inguinal Canal					
	Pelvic floor and Perineal muscles, Ischioanal fossa					
5.3	Axilla, Pectoral and Scapular region muscles	I		7	4	10
	Muscles of Upper limb, Cubital fossa					
	Muscles of Gluteal region, Lower limb, Popliteal fossa, Arches of Foot					
6	Angiology with Applied Anatomy					
6.1	Arterial System		12			
6.1.1	Ascending aorta, Arch of aorta, Brachiocephalic trunk, Common Carotid arteries, Subclavian arteries	II		7	3	8
	External and Internal carotid arteries, Vertebral and Basilar arteries, Formation of Circle of Willis					
6.1.2	Arteries of Upper limb and Lower limb	I		4	4	5
6.1.3	Coronary arteries	III		5	3	5
	Descending thoracic aorta, Abdominal aorta					
	Common iliac, External and Internal iliac arteries					
6.2	Venous System		7			
6.2.1	Dural venous sinuses	II		4	2	5
	Veins of Head and Neck					
6.2.2	Veins of Upper limb and Lower limb	I		2	2	1
6.2.3	Coronary Veins	III		3	4	6
	Veins of Thorax					

	Superior and Inferior venae cavae					
	Portal vein and Portacaval anastomosis					
6.3	Lymphatic System		6			
6.3.1	Cisterna Chyli, Thoracic duct	III		1		1
6.3.2	Cervical lymph nodes and its drainage	II		1		1
6.3.3	Axillary, Inguinal lymph nodes and its drainage	I		2		1
7.	Radiological and Surface Anatomy	II			4	7
	Surface Land marks, Radio images (Plain, Contrast, CT, MRI, USG)					
Total			100	90	54	126

Udal Koorugal (Human Anatomy) Paper II

SN	A2 List of Topics <SIDUG-UK>	B2 Term	C2 Marks	D2 LH	E2	
					NLH -T	NLH -P
1	Nervous System with Applied Anatomy		25			
1.1	Meninges of Brain and Spinal cord	II		29	17	35
	Cerebrum – Lobes, Surfaces, Poles, Fissures, Sulci and Gyri, Areas, Types of fibers, Corpus callosum and Internal capsule					
	Basal nuclei					
	Nuclei of Diencephalon					
	Location and boundaries of Ventricles					
	External and Internal features of Brain stem					
	External and Internal features of Cerebellum					
	External and Internal features of Spinal cord including tracts					
	Cranial nerves I, II, III, IV, V, VI, VII, VIII					
	Formation of Cervical plexus including branches					
1.2	Cranial nerves IX, X, XI, XII	III		5	4	9
	Intercostal nerves					
	Name and location of Sympathetic and Parasympathetic ganglion					
1.3	Formation of Brachial, Lumbar and Sacral plexus including branches	I		8	6	9
2	Special Sense Organs with Applied Anatomy	II	12	8	7	13
2.1	Eye					
2.2	Ear					

2.3	Nose					
2.4	Tongue					
2.5	Skin					
3	Respiratory System with Applied Anatomy	III	11	10	6	13
3.1	Mediastinum, Larynx,					
3.2	The Trachea and Bronchi					
3.3	Pleura, Lungs					
4	Cardiovascular System with Applied Anatomy	III	06	3	1	4
4.1	Pericardium					
4.2	Heart					
5	Digestive System with Applied Anatomy	I	15	14	9	21
5.1	Oral cavity, Palate, Tonsils					
5.2	Teeth, Salivary glands					
5.3	Abdominal Quadrants and Regions					
5.4	Peritoneum and its folds					
5.5	Pharynx, Oesophagus, Stomach					
5.6	Small intestine, Large intestine					
5.7	Extrahepatic biliary apparatus					
5.8	Liver, Spleen and Pancreas					
6	Excretory System with Applied Anatomy	I	12	5	1	7
6.1	Kidney					
6.2	Ureter					
6.3	Urinary bladder					
6.4	Male and female urethra					
7	Reproductive System with Applied Anatomy	III	12	5	4	10
7.1	Male reproductive organs – Scrotum, Testes, Epididymis, Seminal vesicles, Vas deferens, Spermatic cord, Prostate gland, Penis					
7.2	Female reproductive organs – Uterus, Uterine tubes, Ovaries, External genitalia, Mammary glands					
8	Endocrine Organs with Applied Anatomy		7			
8.1	Thyroid and Parathyroid Glands	III		2	-	1
8.2	Supra-renal Glands	I		1	1	2
Total			100	90	56	124

Table 3: Learning objectives (Theory) of Course SIDUG-UK

UDAL KOORUGAL (HUMAN ANATOMY)									
PAPER I THEORY									
A3	B3	C3	D3	E3	F3	G3	H3	I3	J3
Course outcome	Learning Objective (At the end of the session, the students should be able to)	Domain/ Sub	Must to know/ desirable to know/ Nice to know	Level Does/ Shows how/ Knows how/ knows	T-L method	Assessment	Formative / Summative	Term	Integration
Topic: 1 General Anatomy and General Histology						LH: 4 hours		NLH-T: -	
CO1	Explain the Anatomical positions and Planes	Cognitive Understand	MK	K	Video clips/ Charts	Practical	F	I	
CO1	Demonstrate various directional terminologies	Cognitive Apply	MK	KH	Video clips/ Charts	Practical	F	I	
CO2	Define types of each tissue	Cognitive Knowledge	MK	K	Lectures/ Video clips	Viva-voce	F	I	
CO2	Demonstrate the type of tissues under microscope	Cognitive Apply	MK	KH/S	Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
Topic: 2 Embryology						LH: 4 hours		NLH-T: 1 hours	
CO3	Define Gametogenesis,	Cognitive Knowledge	MK	K	Lectures/ Video clips	Written/ Viva-voce	F & S	II	

	Fertilization and implantation								
CO3	Describe the formation of Placenta and foetal circulation	Cognitive Understand	DK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO3	Tabulate the developmental events during Embryonic and Fetal period	Cognitive Understand	NK	K	Flash card/ Demonstration	Written/ Viva-voce	F & S	II	
Topic: 3 Osteology with Applied Anatomy					LH: 22 hours		NLH-T: 16 hours		
CO4	Compile the name of the bones in the Human body	Cognitive Apply	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO4	Illustrate the side and typical features of Clavicle, Scapula	Cognitive Apply	MK	KH	Demonstration/ Group discussion/ Video clips	Written/ Viva-voce/ OSPE	F & S	I	
CO4	Demonstrate the side, features of the bones of Upper limb	Cognitive Apply	MK	S	Demonstration/ Group discussion/ Video clips	Written/ Viva-voce/ OSPE	F & S	I	
CO4	Analyze the side and features of the bones of Lower limb	Cognitive Apply	MK	KH	Demonstration/ Group discussion/ Video clips	Written/ Viva-voce/ OSPE	F & S	I	
CO4	Illustrate the side, features of Hip bone	Cognitive Apply	MK	KH/S	Demonstration/ Group discussion/ Video clips/	Written/ Viva-voce/ OSPE	F & S	I	
CO4	Assess the sex of the Pelvis	Cognitive Evaluate	MK	K	Demonstration/ Video clips/ Group discussion	Written/ Viva-voce/ OSPE	F & S	I	

CO4	Illustrate the Applied anatomy of bones of Upper limb	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	I	
CO4	Integrate the Applied anatomy of bones of Lower limb	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	I	
CO4	Summarize the growing end and completion of ossification of attached upper & lower limbs bones	Cognitive Evaluate	DK	KH	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO4	Assess the sex of the Skull	Cognitive Evaluate	MK	KH	Demonstration/ Group discussion/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO4	Distinguish the Fontanelles and assess the age of closure	Cognitive Evaluate	MK	KH	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO4	Demonstrate the bony boundaries of Orbital cavity and structures present	Cognitive Apply	MK	KH/S	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	UK II
CO4	Demonstrate various foramina, structures passing and areas communicating in the skull	Cognitive Apply	MK	K/S	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO4	Define the craniometric points in the skull	Cognitive Apply	DK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	

CO4	Assess the various Paranasal Sinuses and its importance	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	II	UK II
CO4	Discriminate the Cranial Fossae	Cognitive Evaluate	MK	K	Demonstration/ Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO4	Demonstrate the typical features, foramens, muscle attachments of Mandible	Cognitive Apply	MK	K/S	Demonstration/ Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO4	Demonstrate the features of Hyoid bone	Cognitive Apply	MK	K/S	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO4	Describe the features of Sternum	Cognitive Knowledge	MK	K	Demonstration/ Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	III	
CO4	Enlist the structures at the level of Sternal angle	Cognitive Knowledge	DK	K	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	UK II
CO4	Discuss the side & features of typical and atypical Ribs	Cognitive Apply	MK	KH	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO4	Distinguish the typical and atypical Vertebra	Cognitive Analyze	MK	KH	Flash cards/ Demonstration/ Group discussion	Written/ Viva-voce/ OSPE	F & S	III	
CO4	Enumerate the structures passing through foramens in the Vertebra	Cognitive Knowledge	DK	K	Self-study/ Group discussion	Written/ Viva-voce/ OSPE	F & S	III	

CO4	Describe the Features of Vertebral column	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	UK II
CO4	Describe the Applied anatomy of bones of thorax and Vertebral column	Affective	NK	S	CBL	Written/ Viva-voce	F & S	III	
CO4	Revise the bones	Cognitive knowledge	MK	K	Quiz	Written/ Viva-voce	F & S	III	
Topic: 4 Arthrology with Applied Anatomy					LH: 7 hours		NLH-T: 4 hours		
CO5	Enlist the articulating parts and ligaments of major joints of Upper and lower limbs	Cognitive Knowledge	MK	K	Flash card/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO5	Demonstrate the joints of the upper and lower limb, with applied significance	Cognitive Apply	MK	S	Lectures/ Demonstration/ Video clips	Written/ Viva-voce/ OSPE	F & S	I	
CO5	Describe the various movements of the joints of upper and lower limbs	Cognitive Apply	MK	S	Simulation	Written/ Viva-voce/ OSPE	F & S	I	
CO5	Define the Joints of pelvis	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO5	Demonstrate the Temporomandibular joint, ligaments, movements with applied	Cognitive Apply	MK	K/S	Lectures/ Demonstration/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO5	Enlist the articulating parts ligaments and	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/	F & S	III	

	movements of Inter-vertebral joint					OSPE			
CO5	Revise the Joints	Cognitive Knowledge	MK	K	Quiz	Written/ Viva-voce/ OSPE	F & S	III	
Topic: 5 Myology with Applied Anatomy					LH: 24 hours		NLH-T: 11 hours		
CO6	Demonstrate the Scapular and Pectoral region muscles	Cognitive Apply	MK	K/S	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO6	Explain the Boundaries and contents of Axilla	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration/ Group discussion	Written/ Viva-voce/ OSPE	F & S	I	
CO6	Tabulate the muscles of upper, lower limb	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	I	
CO6	Enlist the Gluteal region muscles	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	I	
CO6	Demonstrate the Gluteal muscles origin, insertion, nerve supply and action	Cognitive Knowledge	MK	K/S	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO6	Describe the origin and insertion of the muscles of Upper & Lower limbs	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO6	Explain the nerve supply and action of the Upper & Lower limb muscles	Cognitive Analyze	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	I	
CO6	Explain the Boundaries and	Cognitive Comprehension	MK	K	Lecture/ Demonstration/ Group discussion	Written/ Viva-voce/ OSPE	F & S	I	

	contents of Cubital fossa								
CO6	Explain the Boundaries of Femoral triangle and Popliteal fossa	Cognitive Comprehension	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO6	Demonstrate the Arches of foot	Cognitive Apply	MK	K/S	Seminar/ Demonstration	Written/ Viva-voce	F & S	I	
CO6	Enlist the Muscles of Facial expression and Eyeball	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO6	Discuss the Muscles of Facial expression and Eyeball muscles	Cognitive Apply	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	UK II
CO6	Discuss the muscles of mastication	Cognitive Apply	MK	K/	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	UK II
CO6	Explain the Scalp with applied importance	Cognitive Understand	MK	K	Seminar/ Group discussion	Written/ Viva-voce/ OSPE	F & S	II	
CO6	Discuss the Supra and infra hyoid muscles	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce	F & S	II	
CO6	Describe the Triangles of Neck	Cognitive Apply	MK	K	Demonstration/ Group discussion/ Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO6	Enlist the Pre and Paravertebral muscles and the muscles of the back	Cognitive Knowledge	MK	K	Self-study/ Group discussion	Written/ Viva-voce	F & S	III	

CO6	Describe the muscles Latissimus dorsi, Sternocleido mastoid and Trapezius	Cognitive Knowledge	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	III	UK II
CO6	Demonstrate the intercostal muscles and Diaphragm	Cognitive Knowledge	MK	K/S	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	UK II
CO6	Tabulate the anterior and posterior Abdominal wall muscles and nerve supply	Cognitive Knowledge	MK	K	Self-study/ Group discussion	Written/ Viva-voce/ OSPE	F & S	III	
CO6	Demonstrate the pelvic floor and perineal muscles and actions	Cognitive Knowledge	MK	K/S	Audio visual videos	Written/ Viva-voce	F & S	III	
CO6	Demonstrate the muscles forming pelvic diaphragm and actions	Cognitive Knowledge	DK	K/S	Audio visual videos	Written/ Viva-voce	F & S	III	
CO6	Explain the Inguinal canal and Ischioanal fossa	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO6	Explain the Clinical significance of Inguinal canal	Cognitive Understand	NK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO5	Revise the muscles	Cognitive Knowledge	MK	K	Quiz	Written/ Viva-voce/ OSPE	F & S	III	

Topic: 6 Angiology with Applied Anatomy					LH: 29 hours	NLH-T: 18 hours			
CO7	Enlist the branches of Arteries of Upper and Lower limb	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO7	Discuss blood vessels of the Upper and Lower limb	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO7	Discuss the Scapular Anastomosis	Cognitive Understand	DK	K	Demonstration/ Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	I	
CO7	Discuss the anastomosis around Elbow joint, Superficial and Deep Palmar arches	Cognitive Understand	DK	K	Seminar/ Group discussion/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO7	Enlist the tributaries of veins of Upper and Lower limb	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO7	Discuss the anastomosis around Hip joint, Knee joint, Ankle joint & Plantar arch	Cognitive Understand	DK	K	Seminar/ Group discussion/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO7	Evaluate the clinical importance of Varicose Veins	Cognitive Evaluate	NK	K	ECE/ Video clips	Written/ Viva-voce/ OSPE	F & S	I	
CO8	Describe the location and drainage of Axillary and Inguinal lymph nodes	Cognitive Understand	MK	K	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	

CO7	Enlist the branches of Arteries of Head and Neck	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO7	Discuss the blood vessels of Head and Neck	Cognitive Understand	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO7	Enlist the tributaries of Head and Neck	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO7	Discuss the Circle of Willis	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO7	Enlist the Dural venous sinuses	Cognitive Knowledge	MK	K	Seminar/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO7	Demonstrate the location, course and drainage of various Dural venous sinuses	Cognitive Understand	MK	K/S	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	UK II
CO8	Enumerate the afferents and efferent of Cervical lymph nodes	Cognitive Knowledge	MK	K	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO7	Enlist the branches & tributaries of the blood vessels of Thorax, Abdomen	Cognitive Knowledge	MK	K	Flash cards/ Demonstration/ Group discussion	Written/ Viva-voce/ OSPE	F & S	III	
CO7	Enumerate the coronary artery and veins	Cognitive Evaluate	MK	K	Lectures/ Demonstration/ Video clips	Written/ Viva-voce/ OSPE	F & S	III	UK II

CO7	Describe the Superior and Inferior vena cava	Cognitive Understand	MK	K	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO7	Evaluate the Azygos venous system and applied significance	Cognitive Evaluate	MK	K	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO7	Evaluate the clinical importance of Portal vein and Portacaval anastomosis	Cognitive Evaluate	MK	K	ECE/ Video clips	Written/ Viva-voce OSPE	F & S	III	
CO7	Define the importance of Anastomosis and Collateral Circulation	Cognitive Apply	NK	K	Self-study/ Group discussion	Written/ Viva-voce/ OSPE	F & S	III	
CO7	Revise the Blood vessels	Cognitive Knowledge	MK	S	Quiz	Written/ Viva-voce/ OSPE	F & S	III	
CO8	Describe the Cysterna Chyli, Lymphatic ducts course, termination and tributaries	Cognitive Knowledge	MK	K	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
Topic: 7 Surface and Radiological Anatomy					LH: -		NLH-T: 4 hours		
CO9	Describe the anatomical landmarks Topographically	Cognitive Understand	MK	S	Seminar/ Demonstration	OSPE/ Viva-voce	F & S	II	
CO9	Demonstrate the bony landmarks in Various Plain X ray	Cognitive Apply	DK	S	Seminar/ Demonstration/ Group discussion	OSPE/ Viva-voce	F	II	
CO9	Assess the features in Contrast X-ray	Cognitive Evaluate	DK	S	Seminar/ Demonstration	OSPE/ Viva-voce	F	II	

CO9	Assess the features in MRI, CT & USG	Cognitive Evaluate	DK	S	Seminar/ Demonstration/ Group discussion	OSPE/ Viva-voce	F	II	
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UDAL KOORUGAL (HUMAN ANATOMY)

PAPER II THEORY

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3
Course outcome	Learning Objective (At the end of the session the students should be able to)	Domain/ Sub	Must to know/ desirable to know/ Nice to know	Level Does/ Shows how/ Knows how/ knows	T-L method	Assessment	Formative/ Summative	Term	Integrat ion
Topic: 1 Nervous System with Applied Anatomy					LH: 42 hours		NLH-T: 27 hours		
CO10	Demonstrate various layers of meninges of Brain and Spinal cord	Cognitive Apply	MK	K	Seminar/ Demonstration/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	UK I
CO10	Tabulate the sulcus and gyrus in cerebrum	Cognitive Knowledge	MK	K	Flash cards/ Group discussion	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Enlist the various functional areas of Cerebrum and its importance	Cognitive Knowledge	DK	K	Seminars/ Group discussion	Written/ Viva-voce/ OSPE	F & S	II	

CO10	Demonstrate the features of cerebrum and cerebellum	Cognitive Apply	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Explain the type of fibers and Internal capsule	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Discuss the Corpus Callosum and its parts	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Tabulate the connections of Cerebrum and Cerebellum	Cognitive Knowledge	DK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	II	
CO10	Explain the features of cerebellum and applied	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce	F & S	II	
CO10	Enlist all the nuclei of Diencephalon	Cognitive Knowledge	MK	K	Self-study/ Group discussion	Written/ Viva-voce	F & S	II	
CO10	Demonstrate the features of Basal nuclei, Thalamus and Hypothalamus	Cognitive Comprehension	MK	K/S	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Demonstrate the Pituitary and Pineal glands	Cognitive Comprehension	MK	K/S	Lectures/ Video clips	Written/ Viva-voce	F & S	II	
CO10	Summarize the connections of Basal nuclei, Thalamus & Hypothalamus	Cognitive Evaluate	DK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	II	

CO10	Label the T.S. of Spinal cord, Medulla, Pons, Mid-brain	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	II	
CO10	Demonstrate the features of medulla, pons, mid-brain	Cognitive Comprehension	MK	K/S	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Describe the Ventricles of brain	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Illustrate the pathway of drainage of CSF	Cognitive Knowledge	NK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce	F & S	II	
CO10	Revise the central nervous system structures	Cognitive Knowledge	MK	S	Quiz	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Illustrate the plan of Brachial plexus	Cognitive Understand	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO10	Describe the Brachial plexus and branches	Cognitive Understand	MK	K	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	UK I
CO10	Tabulate the nerves of Brachial plexus	Cognitive Understand	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO10	Illustrate the plan of Lumbar plexus	Cognitive Understand	MK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	I	
CO10	Explain Lumbar plexus and branches	Cognitive Understand	MK	K	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	UK I

CO10	Discuss the plan of Sacral plexus	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	I	
CO10	Describe the Sacral plexus and branches	Cognitive Knowledge	MK	K	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	UK I
CO10	Tabulate the nerves of Lumbar & Sacral plexus	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO10	Revise the plexus and nerves of upper and lower limbs	Cognitive Knowledge	MK	K	Quiz	Written/ Viva-voce/ OSPE	F & S	I	
CO10	Illustrate the plan of Cervical plexus	Cognitive Comprehension	MK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	II	
CO10	Explain Cervical plexus and branches	Cognitive Comprehension	MK	K	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	UK I
CO10	Describe the nuclei and ganglions related to Cranial nerves I to VIII	Cognitive Comprehension	MK	K	Self-study/ Group discussion	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Demonstrate the I, II, VIII cranial nerves	Cognitive Understand	MK	K	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Illustrate the I, II, VIII cranial nerves pathway	Cognitive Knowledge	MK	K/S	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Discuss the III, IV, VI cranial nerves	Cognitive Understand	MK	K	Group discussion/ Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	UK I

CO10	Illustrate the III, IV, VI nerve pathway	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Demonstrate the Trigeminal nerve	Cognitive Understand	MK	K/S	Group discussion/ Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	UK I
CO10	Illustrate the Trigeminal nerve pathway	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Demonstrate the VII cranial nerve	Cognitive Comprehension	MK	KH	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	UK I
CO10	Illustrate the VII cranial nerve pathway	Cognitive Comprehension	MK	KH/S	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Express the applied significance of the cranial nerves	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Perform the test for the cranial nerves	Psychomotor	MK	S	Simulation	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Revise and discuss importance cranial nerves	Affective	MK	S	Quiz	Written/ Viva-voce/ OSPE	F & S	II	
CO10	Explain the course and supply of Intercostal nerve	Cognitive Understand	MK	K	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	UK I
CO10	Tabulate the name and location of sympathetic and	Cognitive Knowledge	MK	K	Lectures/ Video clips	Written/ Viva-voce	F & S	III	

	parasympathetic ganglion								
CO10	Discuss the nuclei & ganglion related to IX to XII cranial nerves	Cognitive Knowledge	NK	K	Self-study/ Group discussion	Written/ Viva-voce/ OSPE	F & S	III	
CO10	Illustrate the IX, XI, XII cranial nerves pathway	Cognitive Comprehension	MK	K/S	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO10	Explain the course and supply of the IX, XI, XII cranial nerves	Cognitive Understand	MK	K	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	UK I
CO10	Illustrate the X cranial nerve pathway	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO10	Explain the course and supply of X cranial nerve	Cognitive Understand	MK	K	Lectures/ Group discussion/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO10	Revise IX to XII cranial nerves	Affective	MK	K	Quiz	Written/ Viva-voce/ OSPE	F & S	III	
Topic: 2 Special Sense Organs with Applied Anatomy					LH: 8 hours		NLH-T: 7 hours		
CO11	Enlist the layers of Cornea and Retina	Cognitive Knowledge	MK	K	Self-study/ Group discussion	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Demonstrate the features of the Eyeball	Cognitive Comprehension	MK	K/S	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	UK I
CO11	Indicate the Applied anatomy of Eyeball	Affective	MK	K	CBL	Written/ Viva-voce/ OSPE	F & S	II	

CO11	Demonstrate the features of the Ear	Cognitive Comprehension	MK	K/S	Audio visual videos	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Illustrate the components of middle ear and internal Ear	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Describe the applied anatomy of the Ear	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Demonstrate the features of the Nose	Cognitive Apply	MK	K	Lectures/ Video clips/ Practical	Written/ Viva-voce/ OSPE	F & S	II	UK I
CO11	Describe the applied anatomy of the Nose	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Demonstrate the features of the Tongue	Cognitive Apply	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Tabulate the intrinsic and extrinsic muscles of the Tongue, nerve supply & gustatory pathway	Cognitive Knowledge	MK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Describe the applied anatomy of the Tongue	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Illustrate the features of the Skin	Cognitive Knowledge	MK	K	Seminar/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO11	Revise and discuss the special sense organs	Affective	MK	S	Quiz	Written/ Viva-voce/ OSPE	F & S	II	

Topic: 3 Respiratory System with Applied Anatomy					LH: 10 hours		NLH-T: 6 hours		
CO12	Describe the features and relations of Larynx	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO12	Enlist the name of the muscles of Larynx & nerve supply	Cognitive Knowledge	NK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	II	
CO12	Describe the applied anatomy of Larynx	Cognitive Knowledge	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO12	Describe the features and relations of Trachea	Cognitive Understand	MK	K	Seminar/ Group discussion	Written/ Viva-voce/ OSPE	F & S	II	
CO12	Describe the applied anatomy of Trachea	Cognitive Knowledge	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO12	Describe the Mediastinum	Cognitive Understand	MK	K	Lectures/ Video clips	Written/ Viva-voce	F & S	II	UK I
CO12	Enlist the contents of Mediastinum	Cognitive Knowledge	MK	K	Flash cards/ Group discussion	Written/ Viva-voce	F & S	II	
CO12	Demonstrate the surface markings of Pleura and Lungs	Cognitive Apply	DK	K	Lectures/ Video clips/	Written/ Viva-voce	F & S	II	
CO12	Distinguish the features of Right and left Lungs	Cognitive Analyze	MK	K	Seminar/ Group discussion	Written/ Viva-voce/ OSPE	F & S	II	
CO12	Distinguish the features of Right and left Bronchus	Cognitive Analyze	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	II	
CO12	Identify and differentiate the side of lungs	Cognitive Apply	MK	K	Demonstration/ Group discussion/	Written/ Viva-voce/ OSPE	F & S	II	

CO12	Describe the applied Significance of Pleura and Lungs	Cognitive Understand	MK	K	CBL	Written/ Viva-voce OSPE	F & S	II	
CO12	Describe the remarkable features in radio images	Affective	NK	S	Quiz	Viva-voce/ OSPE	F	II	
Topic: 4 Cardiovascular System with Applied Anatomy					LH: 3 hours		NLH-T: 1 hour		
CO12	Describe the location and measurements of the Heart	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Describe the external and internal features of Heart	Cognitive Understand	MK	K	Lectures/ Video clips/	Written/ Viva-voce/ OSPE	F & S	III	UK I
CO12	Identify the Apex beat	Cognitive Apply	NK	S	Simulation	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Demonstrate the surface markings of Heart	Cognitive Apply	MK	K	Lectures/ Video clips/	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Demonstrate the Pericardium and applied significance	Cognitive Apply	DK	K	Lectures/ Video clips/	Written/ Viva-voce	F & S	III	
CO12	Describe the applied anatomy of the Heart	Cognitive Understand	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	III	
Topic: 5 Digestive System with Applied Anatomy					LH: 14 hours		NLH-T: 9 hours		
CO12	Explain the oral cavity and the teeth	Cognitive Knowledge	MK	K	Seminar/ Group discussion	Written/ Viva-voce/ OSPE	F & S	I	

CO12	Demonstrate the anatomy of the palate and pharynx	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Enlist the muscles of Palate and Pharynx with nerve supply	Cognitive Knowledge	NK	K	Self-study/ Group discussion	Written/ Viva-voce	F & S	I	
CO12	Discuss the features of the Salivary glands	Cognitive Apply	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Illustrate the nerve supply of Salivary glands	Cognitive Apply	DK	K	Flash cards/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Demonstrate the features of Tonsils	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Sketch the reflections of Peritoneum	Cognitive Apply	MK	K	Flash cards/ Demonstration	Written/ Viva-voce	F & S	I	
CO12	Describe the Peritoneum	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce	F & S	I	
CO12	Enumerate the abdominal quadrants	Cognitive Knowledge	MK	K	Simulation	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Describe the external and internal features and coverings of stomach	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Explain the features of Liver and gall bladder	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Explain the features of Pancreas and Spleen	Cognitive Understand	MK	K	Lectures/	Written/ Viva-voce/	F & S	I	

					Video clips/ Demonstration	OSPE			
CO12	Describe the external and internal features and parts of Duodenum	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Distinguish the Jejunum and Ileum	Cognitive Analyze	MK	K	Self-study/ Group discussion	Written/ Viva-voce	F & S	I	
CO12	Describe the external and internal features of Colon	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Distinguish the Small and Large Intestines	Cognitive Analyze	MK	K	Self-study/ Group discussion	Written/ Viva-voce	F & S	I	
CO12	Demonstrate the Rectum and Anal canal	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Discuss the location, parts and dimensions of the organs	Affective	MK	S	Quiz	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Illustrate and discuss the applied anatomy of the organs	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	I	
Topic: 6 Excretory System with Applied Anatomy					LH: 5 hours NLH-T: 1 hour				
CO12	Describe the location and measurements of Kidney	Cognitive Knowledge	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Discuss the External and Internal features of Kidney	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Distinguish right and left Kidneys	Cognitive Understand	MK	K	Lectures/	Written/ Viva-voce/	F & S	I	

					Video clips/ Demonstration	OSPE			
CO12	Describe the relations of the organs	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Demonstrate the surface markings of the organs	Cognitive Apply	DK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Discuss the blood supply, nerve supply and lymphatic drainage of the organs	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	
CO12	Illustrate and discuss the applied anatomy of the organs	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	I	
Topic: 7 Reproductive System with Applied Anatomy					LH: 5 hours		NLH-T: 4 hours		
CO12	Enlist the location and dimensions of the Reproductive organs	Cognitive Understand	MK	K	Self-study/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Distinguish the structures in superficial perineal space in male and female	Cognitive Analyze	NK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce	F & S	III	
CO12	Demonstrate the situation, extent, structure of the Mammary gland	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Demonstrate the blood supply and lymphatic drainage of Mammary gland	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	

CO12	Assess the applied anatomy of the Mammary gland	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Assess the applied anatomy of the male reproductive organs	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Describe the features, ligaments and supports of Uterus	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Discuss the features of uterine tube and ovaries	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Demonstrate the male internal and external genital organs	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	III	
CO12	Discuss the applied anatomy of the female reproductive organs	Affective	MK	S	CBL	Written/ Viva-voce/ OSPE	F & S	III	
Topic: 8 Endocrine Organs with Applied Anatomy					LH:3 hours		NLH-T: 1 hour		
CO13	Describe the features of Supra renal glands	Cognitive Understand	MK	K	Lectures/ Video clips/	Written/ Viva-voce/ OSPE	F & S	I	
CO13	Describe the features, applied of Thyroid gland	Cognitive Understand	MK	K	Seminar/ Video clips	Written/ Viva-voce/ OSPE	F & S	III	
CO13	Describe the blood supply & nerve supply of the glands	Cognitive Understand	MK	K	Lectures/ Video clips	Written/ Viva-voce/ OSPE	F & S	III	
CO13	Describe the applied anatomy of the Supra renal glands	Cognitive Understand	MK	K	Lectures/ Video clips/ Demonstration	Written/ Viva-voce/ OSPE	F & S	I	

NLH - Practical - Udal Koorugal (Human Anatomy)**Marks: 100****Hours: 250**

SN	Name of the Practical (P)	Term	Hours
	Practical study of...		
P1	General Anatomy and Histology	I	4
P2	Embryology	II	2
P3	Bones of Upper and Lower limb	I	12
P4	Bones of Skull, Mandible, Hyoid, Paranasal sinuses	II	16
P5	Bones of Vertebral Column, thorax	III	12
P6	Major Joints of Upper, Lower limb, Pelvis	I	7
P7	Temporomandibular joint	II	2
P8	Inter-vertebral joints	III	1
P9	Muscles of Upper Lower limbs, Pectoral, Scapular and Gluteal regions	I	10
P10	Major Muscles of Head and the Neck, Triangles of Neck	II	8
P11	Major muscles of Thorax and Abdomen	III	12
P12	Blood vessels and Lymph nodes of Upper and Lower limb	I	7
P13	Major Blood vessels and Lymph nodes of Head and the Neck	II	14
P14	Major Blood vessels of Heart	III	2
P15	Major Blood vessels and Lymph nodes of Thorax and Abdomen	III	10

P16	Radiological and Surface Anatomy	II	7
P17	Gross structures of Central Nervous system	II	27
P18	Gross structure of Nerves of Upper and Lower limbs	I	9
P19	Gross structure of Cranial nerves (1 to 8)	II	8
P20	Gross structure of Cranial nerves (9 to12), Intercostal nerves	III	9
P21	Gross structures of Special Sense Organs	II	13
P22	Gross structures of Respiratory Organs	III	13
P23	Gross structures of Heart	III	4
P24	Gross structures of Digestive organs	I	21
P25	Gross structures of Excretory Organs	I	7
P26	Gross structures of Reproductive organs	III	10
P27	Gross structures of Thyroid gland	III	2
P28	Gross structures of Supra-renal gland	I	1
Total			250

Table 4: Learning objectives (Practical) of Course SIDUG-UK

UDAL KOORUGAL (HUMAN ANATOMY) PAPER I & II									
PRACTICAL									
A4	B4	C4	D4	E4	F4	G4	H4	I4	J4
Course outcome	Learning Objective (At the end of the session, the students should be able to)	Domain/ Sub	Must to know/ desirable to know/ Nice to know	Level Does/ Shows how/ Knows how/ knows	T-L method	Assessment	Formative / Summative	Term	Integra tion
P1: Practical study of General Anatomy and Histology							NLH-P: 4 hours		
CO1	Demonstrate various planes and movements of the body	Psychomotor	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F	I	
CO2	Demonstrate the types of cells in the histology specimen	Psychomotor	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
P2: Practical study of Embryology							NLH-P: 2 hours		
CO3	Demonstrate the parts of Gametes	Psychomotor	DK	S	Demonstration/ Group discussion	Viva-voce	F & S	II	
CO3	Discuss the features of Blastocyte	Cognitive Knowledge	DK	K	Demonstration/ Group discussion	Viva-voce	F & S	II	

CO3	Differentiate the maternal and foetal parts of Placenta	Cognitive Comprehension	MK	KH	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	II	
P3: Practical study of Bones of Upper & Lower limbs, Pelvis								NLH-P: 12 hours	
CO4	Perform the side and Sex determination of bones	Psychomotor	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
CO4	Demonstrate the typical features	Psychomotor	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
CO4	Express the muscle, ligament attached to a particular part	Cognitive Comprehension	MK	KH	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
CO4	Observe the foramens, Structure passing and communicating areas	Cognitive/ Psychomotor	DK	KH	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
CO4	Explain the specific relations	Cognitive Knowledge	DK	K	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
CO4	Point out possible articulations of bone	Cognitive/ Psychomotor	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
CO4	Illustrate the Bony points in X-Ray	Cognitive/ Affective	NK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	

P4: Practical study of Skull, Mandible, Hyoid, Paranasal air sinuses								NLH-P: 16 hours	
CO4	Express the Sex of Skull	Cognitive Knowledge	MK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Point out the Fontanelles	Psychomotor	MK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Demonstrate the Craniometric Points	Psychomotor	DK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Carry out the side of bones	Psychomotor	MK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Demonstrate the typical features	Psychomotor	MK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Express the muscle, ligament attached to a particular part	Cognitive Knowledge	MK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Illustrate foramen, structures passing, communicating areas	Psychomotor	DK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Explain the specific relations	Cognitive Comprehension	DK	K	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Point out possible articulations of bone	Psychomotor	MK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	
CO4	Illustrate the Bony points in X-Ray	Affective	NK	S	Demonstration / Group discussion	OSPE / Viva-voce	F & S	II	

P5: Practical study of Bones of Vertebral Column, thorax								NLH-P: 12hours	
CO4	Express the features of Sternum	Cognitive Knowledge	MK	K	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Point out possible articulations of Sternum	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Demonstrate the side of Ribs	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Demonstrate the features of typical & atypical Ribs	Cognitive Knowledge	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Demonstrate the features of Costal cartilages	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Express the typical and atypical vertebra	Cognitive/ Psychomotor	MK	K	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Demonstrate the typical features of the bones	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Explain the specific relations	Cognitive	DK	K	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Point out the possible articulations of Vertebra	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO4	Illustrate the Bony points in X-Ray	Psychomotor	NK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	

P6: Practical study of Major Joints of Upper, Lower limb, Pelvis								NLH-P: 7 hours	
CO5	Demonstrate the articular surfaces	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
CO5	Name the ligaments	Cognitive Knowledge	MK	K	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
CO5	Perform the movements	Psychomotor	DK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
CO5	Point out the Sex of the pelvis	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
CO5	Illustrate the features in X-Ray	Affective	NK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F	I	
P7: Practical study of Temporomandibular joint								NLH-P: 2 hours	
CO5	Demonstrate the articular surfaces	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	II	
CO5	Point out the ligaments	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	II	
CO5	Perform the movements	Psychomotor	DK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	II	
CO5	Demonstrate the relations and applied	Cognitive Application	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	II	
P8: Practical study of Inter-vertebral joints								NLH-P: 1 hour	
CO5	Demonstrate the articular surfaces	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO5	Express the ligaments and movements	Cognitive/ Psychomotor	MK	K	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	

P9: Practical study of Muscles of Upper limb, Lower limb, Scapular and Gluteal region								NLH-P: 10 hours	
CO6	Determine the origin, insertion of the muscles	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
CO6	Express the actions	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
CO6	Discuss the nerve supply	Cognitive Knowledge	MK	K	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
CO6	Demonstrate the area and boundaries of the fossa	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
CO6	Point out the structures present in the Fossa	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
P10: Practical study of Major Muscles of Head and the Neck, Triangles of Neck								NLH-P: 8 hours	
CO6	Point out the origin, insertion of the muscles	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II	
CO6	Perform the actions	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	II	
CO6	Name the nerve supply	Cognitive Knowledge	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	II	
CO6	Express the area and boundaries of the Triangle	Cognitive/ Psychomotor	MK	K/S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	II	

P11: Practical study of Major muscles of Thorax and Abdomen								NLH-P: 12 hours	
CO6	Point out the origin, insertion of the muscles	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO6	Perform the actions	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO6	Name the nerve supply	Cognitive Knowledge	MK	K	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
P12: Practical study of Major Blood vessels and Lymph nodes of Upper and Lower limb								NLH-P: 7 hours	
CO7	Point out the vessels spotted	Cognitive	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO7	Demonstrate the origin and termination	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO7	Express the course and relations	Cognitive Comprehension	DK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F	I	
CO7	Point out the branches/ tributaries of the blood vessels	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO8	Express the axillary and inguinal lymph nodes	Cognitive Comprehension	MK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	

CO7	Perform the Palpation of arteries	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	I	
P13: Practical study of Major Blood vessels and Lymph nodes of Head and the Neck								NLH-P: 14 hours	
CO7	Point out the vessels spotted	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II	
CO7	Express the origin and termination	Cognitive Psychomotor	MK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II	
CO7	Name the course and relations	Cognitive/ Psychomotor	DK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F	II	
CO7	Demonstrate the branches / tributaries of the blood vessels	Cognitive/ Comprehension	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II	
CO8	Demonstrate the Cervical lymph nodes	Cognitive/ Comprehension	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II	
P14: Practical study of Major Blood vessels of Heart								NLH-P: 2 hours	
CO7	Point out the vessels spotted	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO7	Explain origin and termination	Cognitive Comprehension	MK	K	Demonstration / Group discussion/ Prosection/	OSPE/ Viva-voce	F & S	III	

					Dissection				
CO7	Express the branches / tributaries of the blood vessels	Cognitive Comprehension	MK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
P15: Practical study of Major Blood vessels and Lymph nodes of Thorax and Abdomen								NLH-P: 10 hours	
CO7	Point out the vessels spotted	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO7	Explain the origin and termination	Cognitive Comprehension	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO7	Demonstrate the course and relations	Psychomotor	DK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F	III	
CO7	Demonstrate the branches/ tributaries of the blood vessels	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO8	Demonstrate the Cysterna chili and Thoracic duct	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
P16: Practical study of Radiological and Surface Anatomy								NLH-P: 7 hours	
CO9	Point out the landmarks of the	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F	II	

	body topographically									
CO9	Carry out the surface marking of the viscera	Psychomotor	DK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F	II		
CO9	Express the type of imaging technique used	Cognitive Knowledge	NK	K	Demonstration / Group discussion	OSPE/ Viva-voce	F	II		
CO9	Observe and explain the bony markings in the image	Cognitive/ Psychomotor	DK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F	II		
CO9	Integrate physiological and pathological variations in the image	Cognitive Analysis	NK	KH	Demonstration / Group discussion	OSPE/ Viva-voce	F	II		
P17: Practical study of Gross structures of Central Nervous system							NLH-P: 27 hours			
CO10	Express the Sulci/Gyri on the Cerebral hemisphere	Cognitive Knowledge	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II		
CO10	Point out the side of the Cerebral hemisphere	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II		
CO10	Point out the Brain stem and spinal cord	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II		

CO10	Observe the Cerebellum and Vermis	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II	
CO10	Point out the parts, relations of the Lateral & IV ventricles	Psychomotor	DK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II	
P18: Practical study of Gross structure of Nerves of Upper and Lower limbs								NLH-P: 9 hours	
CO10	Demonstrate the Formation of Plexus	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO10	Explain the root value of peripheral nerves	Cognitive /knowledge	NK	K	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
CO10	Explain the course of the nerve	Cognitive /knowledge	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	I	
CO10	Perform the test for the nerve	Psychomotor	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F	I	
P19: Practical study of Gross structure of Cranial nerves (1 to 8) & Cervical plexus								NLH-P: 8 hours	
CO10	Demonstrate the Formation of Plexus	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO10	Point out the attachment of the nerve in the brain	Psychomotor	MK	S	Demonstration/ Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	II	
CO10	Express the intra and extra cranial		MK	K	Demonstration/ Group discussion	OSPE/ Viva-voce	F & S	II	

	course of the nerve	Cognitive Knowledge							
CO10	Explain the branches and distribution	Cognitive Knowledge	MK	K	Demonstration/ Group discussion	OSPE/ Viva-voce	F	II	
CO10	Perform the test for the nerve	Psychomotor	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F	I	
P20: Practical study of Gross structure of Cranial nerves (9 to 12) & Intercostal nerves								NLH-P: 9 hours	
CO10	Point out the attachment of the nerve in the brain	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO10	Explain intra and extra cranial course of the nerve	Cognitive Knowledge	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F & S	III	
CO10	Identify the branches	Psychomotor	MK	S	Demonstration / Group discussion	OSPE/ Viva-voce	F	III	
CO10	Perform the test for the nerve	Psychomotor	MK	S	Demonstration/ Group discussion	OSPE/ Viva-voce	F	I	
P21: Practical study of Gross structures of Special Sense Organs								NLH-P: 13 hours	
CO11	Discuss the location and dimensions of the organ	Cognitive Comprehension	MK	S	Demonstration / Group discussion/	OSPE/ Viva-voce	F & S	II	
CO11	Demonstrate the features of the structure	Cognitive Comprehension	MK	S	Demonstration / Group discussion/	OSPE/ Viva-voce	F & S	II	
CO11	Describe the relations and	Cognitive Comprehension	MK	S	Demonstration / Group discussion/	OSPE/ Viva-voce	F & S	III	

	clinical importance								
P22: Practical study of Gross structures of Respiratory Organs								NLH-P: 13 hours	
CO12	Express the side of the Lungs	Cognitive Knowledge	MK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO12	Demonstrate the external features of the organ	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO12	Express the structures passing through the hilum of Lungs	Cognitive Comprehension	MK	K	Demonstration/ Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
P23: Practical study of Gross structures of Heart								NLH-P: 4 hours	
CO12	Explain the external features of the organs	Cognitive Knowledge	MK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO12	Observe the Internal structure of chambers	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO12	Demonstrate the grooves and blood vessels related to it	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	

P24: Practical study of Gross structures of Digestive organs								NLH-P: 21 hours	
CO12	Demonstrate the external features of the organs	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO12	Point out the peritoneal and visceral relations	Psychomotor	DK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO12	Demonstrate the ligaments and interior of the organs	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO12	Point out the location and dimensions of the organs	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
P25: Practical study of Gross structures of Excretory Organs								NLH-P: 7 hours	
CO12	Demonstrate the external features of the organs	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO12	Describe the visceral relations	Cognitive Comprehension	MK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO12	Show the structures passing through the hilum	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	

CO12	Demonstrate the Course of the Ureters	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
P26: Practical study of Gross structures of Reproductive organs								NLH-P: 10 hours	
CO12	Demonstrate the external features of the organs	Psychomotor	MK	S	Demonstration/ Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO12	Explain the visceral relations	Cognitive Knowledge	MK	K	Demonstration/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO12	Demonstrate the ligaments of Uterus, Ovary	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO12	Demonstrate the structure of Testes	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO12	Explain the course of male urethra	Cognitive Knowledge	MK	K	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
P27: Practical study of Gross structures of Thyroid gland								NLH-P: 2 hours	
CO13	Demonstrate the external features of Thyroid gland	Psychomotor	MK	S	Demonstration / Group discussion/ Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	
CO13	Explain the visceral relations of Thyroid gland	Cognitive Knowledge	MK	K	Demonstration / Prosection/ Dissection	OSPE/ Viva-voce	F & S	III	

P28: Practical study of Gross structures of Supra-renal Gland							NLH-P: 1hour		
CO13	Observe the external features of Supra renal gland	Cognitive/ Psychomotor	MK	S	Demonstration / Group discussion / Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	
CO13	Express the relations of Supra-renal glands	Cognitive/ Comprehension	MK	K	Demonstration/ Group discussion / Prosection/ Dissection	OSPE/ Viva-voce	F & S	I	

Table 5: NLH - T Activities Course SIDUG-UK**Udal Koorugal (Anatomy) Paper I**

SN	Teaching-Learning methods	I Term (Hours)	II Term (Hours)	III Term (Hours)	Number of Activities (Hours)
1.	Seminars	5	11	3	19
2.	Flash cards	6	7	4	17
3.	Self- study	-	-	5	5
4.	Quiz	-	-	4	4
5.	Case Based Learning	2	1	1	4
6.	Simulations	2	-	-	2
7.	Audio-visual videos	-	-	1	1
8.	Early Clinical Exposure	1	-	1	2
Total		16	19	19	54

Udal Koorugal (Anatomy) Paper II

SN	Teaching-Learning methods	I Term (Hours)	II Term (Hours)	III Term (Hours)	Number of activities (Hours)
1.	Seminars	1	3	1	5
2.	Case Based Learning	2	3	3	8
3.	Self-study	3	5	2	10
4.	Quiz	2	4	1	7
5.	Flash cards	7	13	2	22
6.	Simulations	1	1	1	3
7.	Audio-visual videos	-	1	-	1
Total		16	30	10	56

Table 6: Assessment Summary

6 A- Number of papers and Marks Distribution

Subject	Papers	Theory Marks	Practical Marks					Grand Total
			Practical	Viva	Electives	Internal Assessment	Total	
Udal Koorugal (Human Anatomy) Paper I & Paper II	2	200	100	20	10	20	150	350

6 B - Scheme of Assessment (Formative and Summative)

SN	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						
	* Select an Evaluation Methods which is appropriate for the objectives of Topics from the Table 6 D. Convert it to 20 marks. ** Conduct Theory (100 Marks) (MCQ (20*1 Marks), SAQ (8*5), LAQ (4*10)) and Practical (100 Marks) Then convert to 20 Marks.						

6 D - Evaluation Methods for Periodical Assessment

SN	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 EXAMINATIONS SIDUG-UK

Udal Koorugal (Human Anatomy) Paper - I

Time: 3 Hours

Maximum Marks: 100

Instructions: All Questions Compulsory

SN	Type of Questions	Number 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
Total				100

FIRST PROFESSIONAL BSMS EXAMINATIONS SIDUG-UK

Udal Koorugal (Human Anatomy) Paper – II

Time: 3 Hours

Maximum Marks: 100

Instructions: All Questions Compulsory

SN	Type of Questions	Number 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
Total				100

6 F Distribution of Theory Exam

Udal Koorugal (Human Anatomy) Paper I

SN	A List of Topics	B Term	C Marks	D Type of Questions “Yes” can be asked. “No” should not be asked		
				MCQ (1 mark)	SAQ (5 marks)	LAQ (10 marks)
1	General Anatomy and General Histology	I	6	Yes	Yes	No
2	Embryology	II	6	Yes	Yes	No
3	Osteology with Applied Anatomy	I, II, III	28	Yes	Yes	Yes
4	Arthrology with Applied Anatomy	I, II, III	12	Yes	No	Yes
5	Myology with Applied Anatomy	I, II, III	23	Yes	Yes	Yes
6.1	Arterial System	I, II, III	12	Yes	No	Yes
6.2	Venous System	I, II, III	7	Yes	Yes	No
6.3	Lymphatic System	I, II, III	6	Yes	Yes	No
Total			100			

Udal Koorugal (Human Anatomy) Paper II

SN	A List of Topics	B Term	C Marks	D Type of Questions "Yes" can be asked. "No" should not be asked		
				MCQ (1 mark)	SAQ (5 marks)	LAQ (10 marks)
1	Nervous System with Applied Anatomy	II	25	Yes	Yes	Yes
2	Special Sense Organs with Applied Anatomy	II	12	Yes	Yes	No
3	Respiratory System with Applied Anatomy	III	11	Yes	Yes	No
4	Cardiovascular System with Applied Anatomy	III	06	Yes	Yes	No
5	Digestive System with Applied Anatomy	I	15	Yes	No	Yes
6	Excretory System with Applied Anatomy	I	12	Yes	No	Yes
7	Reproductive System with Applied Anatomy	III	12	Yes	No	Yes
8	Endocrine Organs with Applied Anatomy	I, III	7	Yes	Yes	No
Total			100			

6 G Question paper blue print

Udal Koorugal (Human Anatomy) Paper I

A Question SN	B Type of Question	C Question Paper Format
Q1	Multiple Choice Questions (MCQ)	1. Topic number 1
		2. Topic number 2
		3. Topic number 3
		4. Topic number 3
		5. Topic number 3

	<p>(All Questions compulsory) (20 X 1 = 20 Marks)</p> <p>Must know part 15 MCQ Desirable to know 3 MCQ Nice to know 2 MCQ</p>	<p>6. Topic number 3</p> <p>7. Topic number 3</p> <p>8. Topic number 3</p> <p>9. Topic number 3</p> <p>10. Topic number 3</p> <p>11. Topic number 4</p> <p>12. Topic number 4</p> <p>13. Topic number 5</p> <p>14. Topic number 5</p> <p>15. Topic number 5</p> <p>16. Topic number 6.1</p> <p>17. Topic number 6.1</p> <p>18. Topic number 6.2</p> <p>19. Topic number 6.2</p> <p>20. Topic number 6.3</p>
Q2	<p>Short Answer Questions (SAQ) (All Questions compulsory) (8 X 5 = 40 Marks)</p> <p>Must know part 7 SAQ Desirable to know 1 SAQ No SAQ from Nice to know</p>	<p>1. Topic number 1</p> <p>2. Topic number 2</p> <p>3. Topic number 3</p> <p>4. Topic number 3</p> <p>5. Topic number 5</p> <p>6. Topic number 5</p> <p>7. Topic number 6.2</p> <p>8. Topic number 6.3</p>
Q3	<p>Long Answer Questions (LAQ) (All Questions compulsory) (4 X 10 = 40 Marks)</p> <p>Must know part 4 LAQ No LAQ on Nice to know No LAQ on Desirable to know</p>	<p>1.Topic number 3</p> <p>2.Topic number 4</p> <p>3.Topic number 5</p> <p>4.Topic number 6.1</p>

Udal Koorugal (Human Anatomy) Paper II

A Question SN	B Type of Question	C Question Paper Format
Q1	<p>Multiple Choice Questions (MCQ) (All Questions compulsory) (20 X 1 = 20 Marks)</p> <p>Must know part 15 MCQ Desirable to know 3 MCQ Nice to know 2 MCQ</p>	<ol style="list-style-type: none"> 1. Topic number 1 2. Topic number 1 3. Topic number 1 4. Topic number 1 5. Topic number 1 6. Topic number 2 7. Topic number 2 8. Topic number 3 9. Topic number 4 10. Topic number 5 11. Topic number 5 12. Topic number 5 13. Topic number 5 14. Topic number 5 15. Topic number 6 16. Topic number 6 17. Topic number 7 18. Topic number 7 19. Topic number 8 20. Topic number 8
Q2	<p>Short Answer Questions (SAQ) (All Questions compulsory) (8 X 5 = 40 Marks)</p> <p>Must know part 7 SAQ Desirable to know 1 SAQ No SAQ from Nice to know</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 8. Topic number 8

Q3	Long Answer Questions (LAQ) (All Questions compulsory) (4 X 10 = 40 Marks)	1. Topic number 2. Topic number 3. Topic number 4. Topic number	1 5 6 7
	Must know part 4 LAQ No LAQ on Nice to know No LAQ on Desirable to know		

6 H Distribution of Practical Exam

SN	Heads	Marks
1.	Practical (Total Marks 100)	
	Histology and Embryology	06
	Osteology (Sex, Side, Typical features, Foramen, X ray)	15
	Arthrology, Arteries, Veins, Lymphoid organs	12
	Myology	12
	Side determination (Lungs/Cerebral hemispheres/Kidneys)	03
	Nervous system, Special sense organs, Digestive and Reproductive organs	24
	Respiratory, Excretory, Endocrine organs and Heart	12
	Simulation (location of arteries, Surface Anatomy)	06
	Record	10
2.	Viva	20
3.	Internal Assessment	20
4.	Electives	10
Total		150

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