**KIMS KARAD**
**KRISHNA INSTITUTE OF MEDICAL SCIENCES**
**"DEEMED TO BE UNIVERSITY",KARAD**
**Department of Anatomy**
**M.Sc(2019-20)Medical Anatomy Programme and Anatomy course**
**( Choice Based credit system )**

## Programme name:-M.Sc Medical Anatomy

## Course name: - Paper I,II ,III, IV

**Code Number:- 1501** **Course Code:- 1501- 11,12, 13,14**

Goal :-

To prepare the postgraduate student to become an exemplary teacher and a research scientist par excellence.

To achieve this goal, the postgraduate student in Anatomy should be given an overall exposure to the subject, teaching methodologies and a sound grounding in research technologies.

## A. Learning OBJECTIVES –

To achieve this goal, the following objectives must be fulfilled.

### I. Cognitive domain :

At the end of three years of postgraduate training the student should be able to

1. Describe the Gross anatomy of the human body and correlate the knowledge of structure and function.
2. Describe the microanatomy including cytology of various structures of the human body and compare the knowledge of microstructure with function and interpret it accordingly.
3. Interpret the anatomical basis of symptoms and signs of clinical conditions, diagnostic procedures and treatment modalities.
4. Describe the developmental aspects of human body and interpret the development basis of various congenital anomalies.
5. Describe the neuroanatomy in its entirety and interpret the neuroanatomical basis of various clinical conditions.
6. Explain various aspects of genetics and describe genetic basis of disorders and principles of genetics counseling.
7. Explain and interpret radiological anatomy and sectional anatomy of the human body as studied by various imaging techniques.
8. Comprehend (to understand ) surface and living anatomy of the human body.
9. Relate forensic anatomy to the study with medico legal aspects of bone in particular.
10. Explain the general principles of Anatomy Act and Transplant of HumanOrgan Act.

11. Explain the process of embalming.
12. Comprehend ethical aspects of biomedical research.
13. Comprehend the basis of disposal of biomedical waste.
14. Comprehend horizontal integration of various subdivisions of anatomy with relevant physiology and biochemistry.

II. **Psychomotor domain** : At the end of the training, the student should be able to :

1. Dissect and demonstrate various parts of adult human body.
2. Demonstrate surface landmarks and living anatomy pertaining to muscle power, testing of nerves and palpating vessels.
3. Dissect and demonstrate various parts of a fetus.
4. Prepare tissue blocks, perform H & E staining and is able to explain the principles of the following special stains- silver nitrate, periodic acid Schiff, Osmic acid, Masson trichome, Verhoeff and Orcein stains.
5. Prepare and deliver lectures on various topics of human anatomy using audio-visual aids.
6. Operate computers so as to prepare documents, tables, charts and projection slides.
7. Identify research topics; carry out research and prepare a project on a topic.
8. Present paper/poster in conferences.
9. Set undergraduate theory question paper, evaluate students and able to compute results including internal assessment marks.

III. **Affective domain**: At the end of training the students should be able to

1. Co-operate with and react and respond in a cordial manner in his/her interaction with peers, superiors and subordinates.
2. Project a cheerful person to the students.
3. Inspire the students to reach greater heights.
4. Arouse an element of curiosity and wonder in the minds of students.
5. Maintain a log book
6. Develop a healthy personality and a liking and respect for the subject.

## IV. Global Competencies & employabilityResearch

Teaching medical Anatomy

Should be conversant with the use of various audiovisual aids.ResearchEmbalming Staining

## V. Element of Critical thinking

1. Ability to identify applied implications of the knowledge of anatomy
2. Correlate the clinical conditions to the anatomical/ embryological/hereditary factors.
3. Demonstrate the ability to evaluate scientific/clinical information and critically analyze conflicting data.

**Duration of Study:** The duration of the study for M.Sc. Medical Anatomy will be of

six semesters spread over three years.

**Program pattern- Commencement of Semester**

- First Semester:August
- Second Semester:February
- Third Semester:August
- Fourth Semester:February
- Fifth Semester:August
- Sixth Semester:February

**Duration - Three years**

**Eligibility -** Any of the following bachelor degree passing with not less than II class

- B.Sc graduates of biological Sciences.
- B.Sc. Zoology/Microbiology/Botany/Anatomy

Other health sciences

- BHMS
- BAMS
- B.Sc

**Fee:** As per University policy**.**

**Selection Method :**Entrance Examination conducted by the University

**Faculty :**

1. Dr . Mrs. Doshi M.A. - Professor & Head
2. Dr. S. B. Mane - Professor
3. Dr. M.P. Ambali- Professor
4. Dr. Priya P. Roy - Associate Professor
5. Dr. S. S. Mohite- Associate Professor
6. Dr. Mrs. Shedge S. A.- Assistant Professor
7. Dr. M. M. Thorat- Assistant Professor

**Contributing department: -**Biochemistry, Physiology, Genetics, Bioethics Unit

**Medium of instruction:**English

**Attendance: Compulsory**

**Syllabus/course content (semester wise):**

75 didactic lectures ( 1 credit point for 1 hour lecture)
20 demonstrations ( 2 credit point for 1 demonstration)
6 Seminars & group discussion ( 3credit point for 1 seminar)
20 hours hands on experience( 2 credit points per case)
30 hours self directed learning( 1 credit point for each SDL)

Student must achieve 150 credit points as eligibility for university exam.(For Term. I, II, II, IV).
Student must achieve 9 credit points as eligibility for university exam( For term V)

**Teaching-learning methods :**

- Lectures
- Demonstrations
-Seminars
- Practicals

**Assessment pattern:** Periodic assessment in the department

***LIST OF RECOMMENDED BOOKS***

Textbooks :

1. Cunningham's Manual of Practical Anatomy- Latest editions of volumes I,II,III.
2. Regional and Applied Anatomy- R.J. Last
3. Clinical Anatomy for Medical students- Richard Snell
4. Synopsis of Surgical Anatomy- Mc Gregor
5. Functional Histology- Wheater, Burkit,
6. Langman's Medical Embryology
7. Embryology by Keith Moore
8. Clinical Neuroanatomy- Snell
9. The Human Nervous System- Murray Barr, John Kieman
10. Genetics by Emery
11. Human Genetics – S.D. Gangane
12. Essential of Human Genetics by Bhatnagar,Kothari and Mehta
13. Cross-sectional anatomy by Bo,Meehan and Kruger
14. Principles of General anatomy by A.K.Datta
15. Text book of Anatomy by Inderbirsingh.

Reference Books :

1. Gray's Anatomy
2. Clinical Anatomy – NMS Series
3. Anatomy for Surgeon s- Henry Hollinshead
4. Surgical Anatomy –Harold Ellis
5. Bailey's Textbook of Microscopic Anatomy.
6. Embryology- Boyd & Mossman
7. Clinically oriented anatomy- Keith Moore

8. Atlas of Human Histology- Di flore
9. Tissues of the Human Body by Le Gros Clerk
10. Genetics by Thompson and Thompson
11. History of Anatomy – Charles Singer
12. History of Anatomy Indian Medicine – Kutumbiah
13. Dorlands Medical Dictionary.

**FIRST YEAR OF RESIDENCY:-**

1) A student should complete: Gross Anatomy part with at least dissection of one body.
2) Should attend all U.G. Lectures.
3) **Part ending examinations.**

**SECOND YEAR OF RESIDENCY :-**

1. should complete Histology, embryology .
2. completion of journals of Histology.

**Third YEAR OF RESIDENCY**:-

Project work to be done by students.

During Vacation- Prepare Histology Slides
-Staining – Haematoxylin Eosin, PAS,
Alcian Blue etc.

## SEMESTER - 1 SYLLABUS

To teach basic Anatomical concepts related to General Anatomy, General histology,

General Embryology and Mendal law of Inheritance & Chromosome

## Semester I

**Theory - 180 Hrs**( Credits – 12 )
**Practical – 240 Hrs (Credits - 8 )**

## A) Paper – I - 1501- 11

### a) Theory
**General Anatomy**

| | |
|---|---|
| 1 .Terminology | General anatomy includes introduction to anatomy, Terminology related to anatomy, Different anatomical planes and subdivisions |
| 2 .Bone | Skeleton system with classification, types of bone, features of long bone, ossification, blood supply |
| 3 .Joints | General classification with examples, structure of typical synovial joints,<br>Classification of synovial joint with examples, Fibrous joints, Cartilaginous joints, Nomenclature |
| 4 .Muscles | General features of muscles, classificationwith examples,types of skeletal muscles, Structures associated with muscle, Cardiac muscleandSmooth muscle, Functions, Naming of muscles |
| 5. Cardiovascular system | Types of circulations, Classification of blood vessels, Anastomosis, Collateral circulation, End arteries, Vasa vasorum |
| 6 .Nervous System | Subdivisions of nervous system, Spinal cord and spinal segments, nerve fibers and myelination, Autonomic nervous system |
| 7. Integumentary System | Introductiontoskinandfascia,Skincomponentsandlayers,typesofskin, Fascia, Appendages of skin,Functions |

**b )Practical**
**General Anatomy**

- General Terminology
- Bone
- Joints

**B) Course code - 1501- 12**

**a) Theory**
**General Histology**

| | |
|---|---|
| 1 .Epithelium and glandular tissue | Classification of epithelia, Simple epithelium and types, Stratified epithelium and types, Goblet cells, Transitional epithelium, Basement membrane, Surface projections and junctions, Classification ofglandulartissue with suitable examples |
| 2.Connective tissue | Components of connective tissue, Fibres, Ground substance, Cells of connective tissue, Loose connective tissue, Dense connective tissue,Adipose tissue |
| 3 . Skeletal system | Classification of cartilage with examples, Composition of Cartilage and bone, Cells of bone, Bone matrix, Microscopic anatomy of bones |
| 4. Muscular system | Microscopic structure of skeletal muscle, cardiac muscle and Smoothmuscle, Differences between the muscle structure |
| 5. Cardiovascular system and nervous system | Microscopic structure of Medium sized artery, Elastic artery, Vein, Structure of neuron, neuroglia, peripheral nerve, Ganglia |
| 6 .Lymphoid system | Cells of lymphoid system, Lymphatic vessels, Microscopic structure of lymphnode, thymus, spleen and tonsil |

**b) Practical**
**Slides of**

- Epithelium
- Connectivetissue
- Cartilage andBone
- Muscular tissue
- Vasculartissue
- Skin andfascia
- LymphoidTissue
- Nervous tissue

**C) Course code - 1501- 13**

**a) Theory**
**General Embryology**

| | |
|---|---|
| 1. Introduction to Embryology and cell cycles | Basicterminology,Stagesofhumandevelopment,Cell Cycle,Cell division– MitosisandMeiosis,relatedabnormalities |
| 2 .Gametogenesis | Primordial germ cells, Spermatogenesis, Spermiogenesis, Oogenesis |
| 3.Femalereproductive Cycles | Ovariancycle,StructureofOvum,ChangesinMenstrualcycle,Strataof endometrium |
| 4. Fertilization | Definition, Stages of fertilization, Effects of fertilization |
| 5 .First week of development | Cleavagedivision,blastocyst,Implantation,Normaland abnormalsitesof implantation and related appliedembryology |
| 6.Second week of development | Formation of 2 germ layers, Yolk sac, Chorion and amnion |
| 7 .Third week of development | Gastrulation, Notochord, Neurulation, Folding of embryo |
| 8 .Placenta | Fetalmembranes,Chorionicvilli,Placentaformation,function sof placenta, Umbilicalcord |

HNF-

Scalp

Triangles of Neck

**b) Practical**

**Embryo Models**

- Sperm
- Secondary Oocyte
- Fertilization
- Clevage
- Formation and derivatives of three germlayers
- Notochord formation andNeurul tube formation with Somites
- Placenta
- Umbilical cord

Bones of Head and neck

- Normaverticalis,
- NormaBasalis,
- NormaOccipitalis,
- NormaLateralis,
- Interior of skull,
- Mandible

**D) Course code - 1501- 14**

a) Theory

- Mendal law of Inheritance
- Chromosome

b) Practical

- Normal Genetic chart
- Karyotyping

## E) Generic electives- (Hrs 120; Theory 30 Practical 90 , Credits – 5)

- Self Management – Mediation,
  SWOT analysis
  Time management

- Diet for prevention of Diabetes
  Nutritive value
  BMI

## F)Dissertation-(Hrs 30 , Credits – 1 )

- Selection of research topic
- Preparation of protocol
- Protocol review and ethical committee review.

**Semester 1 – Credit Hours**

| Course | Course title | Number of Hours per semester | | Total | Number of Credits / Semester | | Total Credits |
|---|---|---|---|---|---|---|---|
| | | Theory | Practical | | Theory | Practical | |
| Paper-1 | General | 45 | 60 | 105 | 3 | 2 | 5 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Anatomy | | | | | | |
| **Paper-2** | General histology | 45 | 60 | 105 | 3 | 2 | 5 |
| **Paper-3** | General Embryology Scalp, Triangles neck | 45 | 60 | 105 | 3 | 2 | 5 |
| **Paper-4** | Mendal law of Inheritance & Chromosome | 45 | 60 | 105 | 3 | 2 | 5 |
| **GE** | Self Management | 30 | 90 | 120 | 2 | 3 | 5 |
| | Diet for prevention of Diabetes | | | | | | |
| **Dissertation** | | 0 | 30 | 30 | 0 | 1 | 1 |
| | **Total** | **210** | **360** | **570** | **14** | **12** | **26** |

## SEMESTER –2 SYLLABUS

To teach basic Anatomical concepts related to Superior Extremity , Stomach , Portal vein , Duodenum , Pancreas , Thyroid , Parotid , Suboccipital Triangle , ChomosomalAbberation

**Theory - 180 Hrs**( Credits – 12 )
**Practical – 240 Hrs (Credits - 8 )**

## A) Paper – I - 1501- 11

### a) Theory

**Superior Extremity**

- Pectoral Region
- Brachial Plexus
- Axilla
- Axillary artery
- Clavipectoral fascia
- Axillary Nerve

- Shoulder joint
- Median nerve
- Cubital Fossa
- Ulnar nerve
- Radial nerve
-

**b ) Practical**
**Bones and Dissection Muscles of Upper Limb**

- Clavicle,
- Scapula,
- Humerus, ,
- Radius,
- Ulna,
- Bones of hand
- X-Ray of Upper Limb
- Surface Marking
- Muscles of Scapular region , Arm and Forearm

## B) Paper – II - Course code - 1501- 12

### a) Theory

Oesophageal -divisions, Muscles, Constrictions, Blood and nerve supply.

Stomach – Gross features, Surfaces and relations, Interior, Blood and Nerve Supply

Portal vein

Duodenum

Pancreas

Related Systemic Histology and Embryology

### b)Practical

To see Stomach , Duodenum , Pancreas , Portal vein

To see related Histology Slides and Models

## C) Paper – III Course code - 1501- 13

a) Theory

Thyroid

Parotid

Suboccipital Triangle

Related Systemic Histology and Embryology

b) Practical

Anterior and Posterior Triangles of Neck

Thyroid

Parotid

Suboccipital Triangle

Related SystemicHistology Slides and Models

## D) Paper – IV Course code - 1501- 14

a) Theory

- Chromosomal Abberations

b) Practical

- Downs Syndrome chart
- Turners Syndrome
- Klinefelter's Syndrome

## E) Core Subjects Elective (Hrs 150, Credits – 07 )

1. Prepare H & E Slides
2. Embalming

### Semester 2 – Credit Hours

| Course | Course title | Number of Hours per semester | | Total | Number of Credits / Semester | | Total Credits |
|---|---|---|---|---|---|---|---|
| | | Theory | Practical | | Theory | Practical | |
| **Paper-1** | Superior Extremity | 45 | 60 | 105 | 3 | 2 | 5 |
| **Paper-2** | Esophagus, Stomach, Portal veinDuodenum Pancreas | 45 | 60 | 105 | 3 | 2 | 5 |
| **Paper-3** | Thyroid ParotidSuboccipital Triangle | 45 | 60 | 105 | 3 | 2 | 5 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Paper-4** | Chromosomal Abberations | 45 | 60 | 105 | 3 | 2 | 5 |
| **DSE** | Prepare H & E Slides<br>Embalming | 60 | 90 | 150 | 2 | 3 | 5 |
| **Dissertation** | | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Total** | **240** | **330** | **570** | **16** | **11** | **27** |

## SEMESTER - 3 SYLLABUS

To teach basic Anatomical concepts related to Respiratory system, Cardiovascular system, along with systemic Embryology and Histology. GIT below small intestine , Liver , EHB, Pharynx, Larynx, Eye , Ear , Genetic counselling

## A) Paper – I - 1501- 11

### a) Theory

**Respiratory System**

| | |
|---|---|
| 1. Mediastinum | Divisions of Mediastinum, Contents of Mediastinum, Thoracic duct, Azygous venous systems. |
| 2. Trachea | Trachea features, Tracheobronchial tree |
| 3. Bronchopulmonary Segments | Features, Segments of Right and Left lung, Blood Supply to segments |
| 4 . Pleura | Types of pleura, Pleural cavity, Extensions and relations, Blood and Nerve supply |
| 5 . Lungs | Gross features, Lobes and fissures, Surfaces and relations, Blood and nerve supply |
| 6 . Diaphragm | Gross features, Surfaces and relations, Parts and Openings, Clinical features related to Diaphragm, Blood and nerve supply, Functions and Actions of Diaphragm |

**Cardiovascular System**

| | |
|---|---|
| 1. Pericardium | Parts and divisions of pericardium, Sinuses of pericardium, Blood and nerve supply of pericardium |
| 2. Heart | Externalfeatures,Internalfeaturesofheartwithrightatriumindetail,Coronary circulation, Nerve supply ofheart |
| 3. Major vessels related toheart | Aorta in detail, Superior and Inferior vena cava, Pulmonary vessels |

**b) Practical Topics**

| |
|---|
| **Respiratory System**<br>• Larynx andTrachea<br>• Lung<br>• Bones ofthorax<br>• Structures inMediastinum |
| **Cardiovascular System**<br>• Exterior ofheart<br>• Interior ofheart<br>• Major vessels related toheart |

## B) Paper – II - Course code - 1501- 12

a) Theory

- Liver–grossfeatures,Segments,lobes,Surfacesandrelations,Portahepatis, Blood supply,
- EHBA – Gall bladder, Cystic duct, Bileducts
- GeneralfeaturesofJejunumandIleum,
- Large Intestine
- Differences between small and largeintestine.
- Features,divisions,Ceacumindetail,
- Abdominal Aorta
- Appendixindetail,Bloodsupply

**b) Practical Topics**

- Peritoneum

- Liver
- Spleen

## C) Paper – III Course code - 1501- 13

### a) Theory

- Pharynx
- Larynx
- Tongue
- Tonsil
- Eye
- Ear

### b) Practical Topics

- **Sagittal section of Nasal cavity**
- Pharynx
- Larynx
- Tongue

## D) Paper – IV Course code - 1501- 14

### a) Theory

- **Prenatal Diagnosis**
- **Genetic counseling**

### b) Practical

- **Genetic counseling cases**

## E) Dissertation (Hrs 180, Credits – 06 )

Review of literature
Preparation for data Collection

**Semester 3 – Credit Hours**

| Course | Course title | Number of Hours per semester | | Total | Number of Credits / Semester | | Total Credits |
|---|---|---|---|---|---|---|---|
| | | Theory | Practical | | Theory | Practical | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Paper-1** | Heart, Lung | 30 | 60 | 105 | 2 | 2 | 5 |
| **Paper-2** | Liver Intestine | 30 | 60 | 105 | 2 | 2 | 5 |
| **Paper-3** | HNF | 30 | 60 | 105 | 2 | 2 | 5 |
| **Paper-4** | Prenatal Diagnosis Genetic counselling | 30 | 60 | 105 | 2 | 2 | 5 |
| **Dissertation** | Review of literature Data collection | 0 | 180 | 0 | 0 | 6 | 8 |
| | **Total** | **120** | **420** | **540** | **8** | **14** | **22** |

## SEMESTER - 4 SYLLABUS

### A) Paper – I - Course code - 1501- 11

a) Theory

Development of Heart & Lung

b) Practical

Embryo models of Heart & Lung

Histology slides of Lung

### B) Paper – II - Course code - 1501- 12

a) Theory

Rectum , Anal canal

b) Practical

Embryology models

### C) Paper – III Course code - 1501- 13

**a)** Theory

Nose &Paranasal Sinuses , Related Systemic Embryology and Histology

**b)** Practical

Lateral wall of Nose

## D) Paper – IV Course code - 1501- 14

a) **Theory**

**Applied Anatomy – 1**

**Upper Limb , Lower Limb & Thorax**

b) **Practical**

**Case discussion**

E) **DSE**

1. Femoral Hernia – Surgery Department
2. Blood supply of Heart - Cardiology

F) Dissertation

**Data feeding and analysis**

### Semester 4 – Credit Hours

| Course | Course title | Number of Hours per semester | | Total | Number of Credits / Semester | | Total Credits |
|---|---|---|---|---|---|---|---|
| | | Theory | Practical | | Theory | Practical | |
| **Paper-1** | Development of Heart & Lung | 30 | 60 | 105 | 2 | 2 | 5 |
| **Paper-2** | Rectum , Anal canal | 30 | 60 | 105 | 2 | 2 | 5 |
| **Paper-3** | Nose Paranasal Sinuses | 30 | 60 | 105 | 2 | 2 | 5 |
| **Paper-4** | Applied Anatomy - ! | 30 | 60 | 105 | 2 | 2 | 5 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DSE** | Femoral Hernia – Surgery Department<br>Blood supply of Heart - Cardiology | 60 | 90 | 150 | 4 | 3 | 7 |
| **Dissertation** | Review of literature<br>Data collection | 0 | 60 | 60 | 0 | 2 | 2 |
| | **Total** | **180** | **390** | **570** | **12** | **13** | **25** |

## SEMESTER - 5 SYLLABUS

To teach basic Anatomical concepts related to Lower Limb,

along with systemic Embryology and Histology.

## A) Paper – I - Course code - 1501- 11

### a) Theory

- Femoral triangle,
- Front of the thigh,
- Adductor canal,
- gluteal region,
- Hamstrings,
- Popliteal fossa,

**b)** Practical
Dissection of concerned Topics

## B) Paper – II - Course code - 1501- 12

### a) Theory

**Excretory System**

| | |
|---|---|
| 1 .Kidney | Grossfeatures,Surfacesandrelations,Interior,Bloodsupply,Applied Anatomy |
| 2 .Ureter and Urinary Bladder | Ureter- Grossfeatures,Extensionsanddivisions,Constricions,Bloodsupply, Applied Anatomy, Urinary Bladder - Gross features, Surfaces and relations, Interior, Blood supply, AppliedAnatomy |
| 5. Urethra | Male And Female urethra – Extension, parts, relations, interior, applied. |

### b) Practical Topics

**Genitourinary system**

- Kidney
- Ureter, Urinarybladder
- Lumbar vertebrae
-

Histology Slides
Embryology Models

## C) Paper – III Course code - 1501- 13

### a) Theory

**Nervous System**

| | |
|---|---|
| 1. Meninges and Dural Venous Sinuses | Meninges,Duralfolds,Duralvenoussinuses-Classification,Cavernoussinus indetail |
| 2. Spinal Cord | Externalfeatures,Partsanddivisions,Sectionofspinalcordshowingascending and descending tracts, Spinal nerves, Bloodsupply |
| 3 .Brain Stem | External features of medulla, Pons and Midbrain, Fourth ventricle |
| 4 .Cerebellum | Grossfeatures,Lobesandfissures,surfacesandrelations,Bloodsupplyand Applied Anatomy |
| 5 .Cerebrum | SulciandGyri,Functionalareasofbrain,Whitematterofthebrain,Lateral ventricle, Third ventricle, Blood supply ofbrain |
| 6 .Cranial nerves | Cranialnerves–I-XII,Facialnerveindetail,Hypoglossalnerveindetail, Trigeminal nerve indetail. |

**b) Practical Topics**

**Nervous System**

- SpinalCord
- Brain stem
- Cerebellum
- Cerebrum

## D) Paper – IV Course code - 1501- 14

**a) Theory**

Applied Anatomy – Abdomen , HNF, Brain

**b) Practical**

Case discussion

**Semester 5 – Credit Hours**

| Course | Course title | Number of Hours | Total | Number of | Total |
|---|---|---|---|---|---|

| | | per semester | | | Credits / Semester | | Credits |
|---|---|---|---|---|---|---|---|
| | | Theory | Practical | | Theory | Practical | |
| **Paper-1** | Heart, Lung | 30 | 60 | 90 | 2 | 2 | 4 |
| **Paper-2** | Liver Intestine | 30 | 60 | 90 | 2 | 2 | 4 |
| **Paper-3** | HNF | 30 | 60 | 90 | 2 | 2 | 4 |
| **Paper-4** | Prenatal Diagnosis Genetic counselling | 30 | 60 | 90 | 2 | 2 | 4 |
| **Dissertation** | Review of literature Data collection | 0 | 150 | 150 | 0 | 5 | 5 |
| | **Total** | **120** | **390** | **540** | **8** | **13** | **21** |

## SEMESTER - 6 SYLLABUS

To teach basic Anatomical concepts related to Nervous system along with systemic Embryology and Histology.

## A) Paper – I - Course code - 1501- 11

**a)** Theory

- Musclesofleg,
- Archesoffoot,
- Nervesupply tolowerlimb–Femoralnerve,ObturatornerveandSciaticnerve,
- Bloodsupply to lower limb

**b) Practcal**

- Dissection of the concerned topics

## B) Paper – II - Course code - 1501- 12

### a) Theory

**Male Genital System -** Testis – Gross features, Surfaces and coverings, Relations, Interior,
Bloodsupply,AppliedAnatomy,Epididymis,Vasdeferens,Prostrate,andExternal genetaliaofMale.

**Female Genital System -** Uterus–Grossfeatures,Surfacesandrelations,Supportsof uterus,InteriorandBlood supply. Ovaries – Surfaces, relations, Blood supply, Fallopian tubes – parts, relations, blood supply

### b) Practical

- Prostate and Seminalvesicles
- Testis
- Uterus
- Fallopian tubes andOvary
- Sagittal section of male and femalepelvis
- Bones- male and femalepelvis

## C) Paper – III Course code - 1501- 13

### a) Theory

**Ventricle and CSF circulation**

b) Practical

Ventricles

Sections ofbrain

## D) Paper – IV Course code - 1501- 14

**a)** Theory
SN on Radiology, Recent advances,
Embalming & Museum techniques

**b)** Practical
X-Ray , Ulrasonography

**E) DSE**

1. Supports of Uterus & What causes Prolapse - Obs and Gynae
2. Pyelography – Radiology

**F) Dissertation**

Dissertation Presentationand Submission

## Semester 6 – Credit Hours

| Course | Course title | Number of Hours per semester | | Total | Number of Credits / Semester | | Total Credits |
|---|---|---|---|---|---|---|---|
| | | Theory | Practical | | Theory | Practical | |
| **Paper-1** | Muscles of Leg, Arches , Nerves & Blood vessels of Lower Limb | 45 | 30 | 75 | 3 | 1 | 4 |
| **Paper-2** | Male and Female Genital System | 45 | 30 | 75 | 3 | 1 | 4 |
| **Paper-3** | Ventricle and CSF circulation | 45 | 30 | 75 | 3 | 1 | 4 |
| **Paper-4** | X-Ray Museum Technique | 45 | 30 | 75 | 3 | 1 | 4 |
| **DSE** | Supports of Uterus & What causes Prolapse - Obs and Gynae Pyelography – Radiology | 180 | 120 | 300 | 12 | 4 | 16 |
| **Dissertation** | | 0 | 60 | 60 | 0 | 2 | 2 |
| | **Total** | **240** | **300** | **540** | **16** | **10** | **26** |

## Examination Pattern :-

Internal assessment examination will be converted to of 20 marks theory and 20 marks practical and will be added in End semester examination.
End semester examination:
Question Paper Pattern:
**Theory:** 80 Marks
Answer all the questions.

I. Multiple Choice Question (MCQ) = 20 X 20 = 20
II. Essay question : 20 x1 =20
III. Long Answers(Answer 2 out of 3) = 2 X 10 = 20
IV. Short Answers (Answers 4 out of 6) = 4 x 5 = 20

Total = 80 Marks
**Practical:**
Oral Examination: 30 Marks
Practical Examination 50 Marks
Total Marks : 80.
Total exam marks for end semester are 100 marks theory and 100 marks practical.

### 1. Promotion and award of grades

A student shall be declared PASS and eligible for getting he/she secures at least 50% marks in that particular course including internal assessment..

### 2. Carry forward of marks

In case a student fails to secure the minimum 50% in any Theory or Practical course as specified ,then he/she shall reappear for the end semester examination of that course. However his/her marks of the Internal Assessment shall be carried over and he/she shall be entitled for grade obtained by him/her on passing.

### 3. Improvement of internal assessment

A student shall have the opportunity to improve his/her performance only once in the Sessional exam component of the internal assessment. The re-conduct of the Sessional exam shall be completed before the commencement of next end semester theory examinations.

Grading of performances

**Letter grades and grade points allocations:**

Based on the performances, each student shall be awarded a final letter grade at the end of the semester for each course. The letter grades and their corresponding grade points are given in table I

**Table –I Letter grades and grade points equivalent to Percentage of marks and performances**

| Percentage of Marks Obtained | Letter Grade | Grade Point | Performance |
|---|---|---|---|
| 90.00 – 100 | O | 10 | Outstanding |
| 80.00 – 89.99 | A | 9 | Excellent |
| 70.00 – 79.99 | B | 8 | Good |

| | | | |
|---|---|---|---|
| 60.00 – 69.99 | C | 7 | Fair |
| 50.00 – 59.99 | D | 6 | Average |
| Less than 50 | F | 0 | Fail |
| Absent | AB | 0 | Fail |

A learner who remains absent for any end semester examination shall be assigned a letter grade of AB and a corresponding grade point of zero. He/she should reappear for the said evaluation/examination in due course.

## 18. The Semester grade point average (SGPA)

The performance of a student in a semester is indicated by a number called 'Semester Grade Point Average' (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses by the student during the semester. For example, if a student takes five courses(Theory/Practical) in a semester with credits C1, C2, C3, C4 and C5 and the student's grade points in these courses are G1, G2, G3, G4 and G5, respectively, and then students' SGPA is equalto:

$$SGPA = \frac{C1G1 + C2G2 + C3G3 + C4G4 + C5G5}{C1 + C2 + C3 + C4 + C5}$$

The SGPA is calculated to two decimal points. It should be noted that, the SGPA for any semester shall take into consideration the F and ABS grade awarded in that semester. For example if a learner has a F or ABS grade in course 4, the SGPA shall then be computed as:

$$\mathbf{SGPA} = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4 * \text{ZERO} + C_5G_5}{\mathbf{C_1 + C_2 + C_3 + C_4 + C_5}}$$

## Cumulative Grade Point Average (CGPA)

The CGPA is calculated with the SGPA of all the VIII semesters to two decimal points and is indicated in final grade report card/final transcript showing the grades of all VIII semesters and their courses. The CGPA shall reflect the failed status in case of F grade(s),till the course(s) is/are passed. When the course(s)is/are passed by obtaining a pass grade on subsequent examination(s) the CGPA shall only reflect the new grade and not the fail grades earned earlier. The CGPA is calculatedas:

$$CGPA = \frac{C1S1 + C2S2 + C3S3 + C4S4 + C5S5 + C6S6 + C7S7 + C8S8}{C1 + C2 + C3 + C4 + C5 + C6 + C7 + C8}$$

where $C_1$, $C_2$, $C_3$,.... is the total number of credits for semester I,II,III,…. and $S_1$,$S_2$, $S_3$,....is the SGPA of semester I,II,III,…. .

## 19. Declaration ofclass

The class shall be awarded on the basis of CGPA as follows:
First ClasswithDistinction= CGPA of. 7.50 andabove
FirstClass= CGPA of 6.00 to7.49
SecondClass= CGPA of 5.00 to5.99

## 20. Award ofRanks

Ranks and Medals shall be awarded on the basis of final CGPA.

## 21. Award ofdegree

Candidates who fulfill the requirements mentioned above shall be eligible for award of degree during the ensuing convocation.

## Final Mark list Of University Examination

| Sr. No. | Semester | Internal Assessment | | End Semester Examination | | Total | |
|---|---|---|---|---|---|---|---|
| | | Theory 20 marks | Practical 20 marks | Theory 80 marks | Practical 80 marks | Theory 100 marks | Practical 100 marks |
| 1 | **Semester I** | | | | | | |
| 2 | **Semester II** | | | | | | |
| 3 | **Semester III** | | | | | | |
| 4 | **Semester IV** | | | | | | |

**CBCS FOR Anatomy**

**Program: M. Sc Medical** **Department: KIMS** **Subject: Anatomy** **Scheme: CBCS**

| Subject | | Sem-I | | | Sem-II | | | Sem-III | | | Sem-IV | | | Sem-V | | | Sem-VI | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | T | P | Total | T | P | Total | T | P | Total | T | P | Total | T | P | Total | T | P | Total | T | P | Total |
| Core-I | Hr | 45 | 60 | 105 | 45 | 60 | 105 | 30 | 60 | 90 | 30 | 60 | 90 | 30 | 60 | 90 | 45 | 30 | 75 | **225** | **330** | **555** |
| | Cr | 3 | 2 | 5 | 3 | 2 | 5 | 2 | 2 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 1 | 4 | **15** | **11** | **26** |
| Core-II | Hr | 45 | 60 | 105 | 45 | 60 | 105 | 30 | 60 | 90 | 30 | 60 | 90 | 30 | 60 | 90 | 45 | 30 | 75 | **225** | **330** | **555** |
| | Cr | 3 | 2 | 5 | 3 | 2 | 5 | 2 | 2 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 1 | 4 | **15** | **11** | **26** |
| Core-III | Hr | 45 | 60 | 105 | 45 | 60 | 105 | 30 | 60 | 90 | 30 | 60 | 90 | 30 | 60 | 90 | 45 | 30 | 75 | **225** | **330** | **555** |
| | Cr | 3 | 2 | 5 | 3 | 2 | 5 | 2 | 2 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 1 | 4 | **15** | **11** | **26** |
| Core-IV | Hr | 45 | 60 | 105 | 45 | 60 | 105 | 30 | 60 | 90 | 30 | 60 | 90 | 30 | 60 | 90 | 45 | 30 | 75 | **225** | **330** | **555** |
| | Cr | 3 | 2 | 5 | 3 | 2 | 5 | 2 | 2 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 1 | 4 | **15** | **11** | **26** |
| **Total** | **Hr** | **180** | **240** | **420** | **180** | **240** | **420** | **120** | **240** | **360** | **120** | **240** | **360** | **120** | **240** | **360** | **180** | **120** | **300** | **900** | **1320** | **2220** |
| | **Cr** | **12** | **8** | **20** | **12** | **8** | **20** | **8** | **8** | **16** | **8** | **8** | **16** | **8** | **8** | **16** | **12** | **4** | **16** | **60** | **44** | **104** |

**Generic Elective – Any One**

1. Stress Management 2. Personality Development

**Discipline Specific Elective – Any One**

**Semester II**- 1. Prepare H & E Slides 2. Embalming

**Semester IV-** 1. Femoral Hernia – Surgery Department 2. Blood supply of Heart - Cardiology

**Semester VI**- 1. Supports of Uterus & what causes Prolapse - Obs and Gynae 2. Pyelography –Radiology

**CBCS FOR Anatomy**

**Program: M. Sc Medical** **Department: KIMS** **Subject: Anatomy** **Scheme: CBCS**

| Subject | | Sem-I | | | Sem-II | | | Sem-III | | | Sem-IV | | | Sem-V | | | Sem-VI | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | T | P | Total | T | P | Total | T | P | Total | T | P | Total | T | P | Total | T | P | Total | T | P | Total |
| **Elective DSE/ AEC** | Hr | - | - | - | 60 | 90 | 150 | - | - | - | 60 | 90 | 150 | - | - | - | 60 | 120 | 180 | **180** | **300** | **480** |
| | Cr | - | - | - | 4 | 3 | 7 | - | - | - | 4 | 3 | 7 | - | - | - | 4 | 4 | 8 | **12** | **10** | **22** |
| **Generic Elective** | Hr | 30 | 90 | 120 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | **30** | **90** | **120** |
| | Cr | 2 | 3 | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | **2** | **3** | **5** |
| **Dissertation** | Hr | 0 | 30 | 30 | 0 | 0 | 0 | 0 | 180 | 180 | 0 | 60 | 60 | 0 | 150 | 150 | 0 | 60 | 60 | **0** | **480** | **480** |
| | Cr | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 2 | 2 | 0 | 5 | 5 | 0 | 2 | 2 | **0** | **16** | **16** |
| **Grand Total** | **Hr** | **210** | **360** | **570** | **240** | **330** | **570** | **120** | **420** | **540** | **180** | **390** | **570** | **120** | **390** | **510** | **240** | **300** | **540** | **1110** | **2190** | **3300** |
| | **Cr** | **14** | **12** | **26** | **16** | **11** | **27** | **8** | **14** | **22** | **12** | **13** | **25** | **8** | **13** | **21** | **16** | **10** | **26** | **74** | **73** | **147** |