



MD Anatomy

Curriculum and Syllabus 2015

Branch Code: 11

SRM Medical College Hospital & Research Centre

SRM University SRM Nagar, Kattankulathur Kancheepuram (Dt). 603 203

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M.D (ANATOMY)

GOAL

The broad goal of Postgraduate students in Anatomy aims at acquiring comprehensive knowledge in macroscopic and microscopic anatomy including surgical & embryological aspects. After acquiring comprehensive knowledge, the postgraduates at the end of training should be able to take classes for medical & paramedical students.

OBJECTIVES

KNOWLEDGE & SKILL

A Student upon successfully qualifying in the M.D (Anatomy) Examinations should be able to:

- 1) Be a competent anatomist.
- Teach the undergraduate students-gross anatomy, radiological anatomy, embryology, histology, neuroanatomy and elementary genetics.
- 3) Assess the students understanding of the anatomy
- 4) Assess the undergraduate programmes.
- 5) Plan and modify the undergraduate curriculum.
- 6) Prepare the tissues for light microscopic study.
- 7) Embalm a cadaver.
- 8) Design Gross Anatomy and Histology laboratories for teaching undergraduate and postgraduate students of anatomy.
- 9) Plan and implement research programme.
- 10) Undertake histomorphometric studies.

COURSE OVERVIEW

DURATION OF THE COURSE

The period of certified study and training for the Post-Graduate MD ANATOMY shall be Three Academic years/36 months (six academic terms). The academic terms shall mean six months training period.

COMMENCEMENT OF ACADEMIC SESSION

The academic year for the Post-Graduate shall commence from May / June of the Academic Year.

DATE OF EXAMINATION

The students admitted up to May/June of the academic year shall be registered for that academic year and shall take up their Final Third Year regular examinations in April/October of the academic year after completion of 3 years / 36 months.

NUMBER OF EXAMINATIONS

The University shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the two examinations.

ATTENDANCE

All students joining the postgraduate training programme shall work as full time residents during the period of training, attending not less than 80% (eighty percent) of the training during each calendar year, and will be given full time responsibility, assignments and participation in all facets of the educational process.

The period of training for obtaining the degrees shall be three completed years including the period of examination.

COURSE CONTENTS

Theory:

1. History of anatomy.

- 2. General anatomy.
- 3. Elements of anatomy.

4. Gross human anatomy including cross sectional anatomy and applied anatomy.

5. Principles of microscopy and histological techniques.

6. General and systemic histology.

7. General and systemic embrylogy including growth, development and teratology.

- 8. Neuro anatomy.
- 9. Surface anatomy.

10. Radiological anatomy including principles of newer techniques and interpretation of CT scan, sonography and MRI.

- 11. Human genetics.
- 12. Comparative anatomy.
- 13. Principles of physical anthropology.

14. Museum techniques, embalming techniques including medico legal aspects and knowledge of Anatomy Act.

15. Medical ethics.

16. Recent advances in anatomy.

II. Practical schedule

- 1. The PG students should dissect the entire human cadaver, during the course.
- 2. They should embalm and maintain record of the embalming work done.
- 3. They should prepare and mount at least 10 museum specimens.

- 4. In histology section:
 - a. Collection of tissues, fixing, block making, section cutting, use of

different types of microtomes and preparation of general and systemic slides.

- b. Haematoxylin & eosin
 - i. Preparation of stains.
 - ii. Staining techniques.
- c. Knowledge of special staining techniques like silver nitrate, PAS staining, osmium tetroxide, Van Gieson etc.
- d. Knowledge of light microscope and electron microscope.
- e. Detailed microscopic study of all the tissues (general and systemic slides).
- f. Study of chick embryo slides.

III. Method of Training:

The students shall attend all the undergraduate theory and practical classes regulary. Rotation postings of PG students shall be made in the II and III years of the course as follows:

I. Details of Clinical Training

| | 6 Months |
|--|------------|
| Ultra Sonography, Body Scan, Doppler, Echo Cardiogram, Electron Microscopy | - 3 Months |
| Surgical Ward Posting | - 3 Months |

At the end of the posting, a certificate has to be obtained from the concerned Heads of the departments for satisfactory learning.

The Postgraduate students shall take part in teaching undergraduate students in gross anatomy, histology, tutorials, group discussions and seminars, during the three years of the course.

SYLLABUS

GENERAL ANATOMY

Anatomical terms, Nomenclature, Tissues of the body, General Osteology, Arthrology, Muscle & Fascia, Nervous system, Principles governing arterial, Venous and lymphatic pathways, Innervation of blood vessels.

a. GROSS ANATOMY

Detailed Gross Anatomy of the human body including cross sectional anatomy & Anatomical basis of clinical conditions.

b. PRACTICAL

Dissection of Human body region wise – Upper limb, Lower limb, Thorax, Abdomen & Pelvis, Head & Neck, Brain. Histological and Museum Techniques, Microscopes – All types, Care and maintenance of light microscope, General Histology, Special histology of the systems of the body including their electro microscopic appearance.

I) EMBALMING AND MUSEUM TECHNIQUES

II) RADIOLOGICAL ANATOMY

a. Principles involved in plain radiography, Special investigative procedures and newer imaging techniques such as ultrasound, CT-scans, MRI, PET, etc.

III) EMBRYOLOGY

General Embryology

Special embryology of all the systems of the body including variations and congenital anomalies.

IV) GENETICS:-

Structure of chromosomes, Structure of gene, Karyotype, Chromosomal aberrations, Inheritance, Basic Molecular genetics, Common Genetic disorders, teratogens, Pedigree analysis.

V) COMPARATIVE ANATOMY : Only Knowledge Purpose

VI) HISTOLOGY

Embalming techniques study of neuroanatomy & embryology slides. Histological and Museum Techniques, Microscopes – All types, Care and maintenance of light microscope, General Histology, Special histology of the systems of the body including their electro microscopic appearance.

VII) NEUROANATOMY:-

Structural organization of various parts of the nervous system with particular reference to their connections and functions.

Localization & effects of lesions in different parts of the central nervous system and nerve injuries.

Neuroanatomical techniques for demonstration of Nissl substance, Processes, myelin sheath.

VIII) APPLIED ANATOMY INCLUDING RADIOLOGICAL ANATOMY AND RECENT ADVANCES:-

- a) Applied aspects of Human Anatomy including Surgical Approaches to various structures and organs.
- b) Principles of Newer Imaging Techniques.
- c) Determination of Age, Sex, Stature and race from skeletal remains.
- d) Determination of age of a living individual

- e) Sectional Anatomy.
- f) Principles and Interpretation of CT Scan, Sonography and MRI
- g) Surface Anatomy.
- h) Embalming Techniques including medico-legal aspects.

II. Period of Study (3 Years):-

| 1 st Year | - | Learning of Gross anatomy, thesis topic | | |
|----------------------|---|--|--|--|
| | | decision. | | |
| 2 nd Year | - | Histology Techniques, Museum, Clinical Postings. | | |
| | | Embalming Techniques, Genetics & thesis | | |
| 3 rd Year | - | Study of Neuro anatomy & Embryology | | |

III. Details of Clinical Training

| | | 6 Months |
|--|---|----------------|
| P | | |
| Ultra Sonography, Body Scan, Doppler, Echo Cardiogram, Electron Microscopy | - | 3 Months |
| Surgical Ward Posting | - | 3 Months |
| Constant Mand Destine | | $2 M_{\rm em}$ |

I YEAR M.D- ANATOMY

| Day | 8.00 - | 10.15.A. | 11.00 A.M. | 12.00 | 1.00 | 2.00 P.M. |
|-----------|------------|----------|------------|---------|----------|-----------|
| | 10.00A.M | M - | - 12.00 | Noon – | P.M | - 4.00 |
| | | 11.00 | Noon | 1.00 | 2.00P.M. | P.M. |
| | | A.M | | p.m | | |
| Monday | Dissection | Lecture | Dissection | | Lunch | Seminar |
| Tuesday | Dissection | - | - | Lecture | Break | |
| Wednesday | Dissection | - | Lecture | - | | Journal |
| | | | | | | Club |
| Thursday | Dissection | Lecture | Dissection | | | - |
| Friday | Dissection | - | Dissection | Lecture | | Histology |
| Saturday | Dissection | Le | ecture - | | | |

II YEAR M.D ANATOMY (for first six months)

| Dav | 8.00 - | 10.15.A.M - 1.OO P.M | 1.00 | 2.00 P.M |
|-----------|------------|----------------------|----------|--------------|
| Day | 10.00A.M | | P.M | 4.00 P.M. |
| | | | 2.00P.M. | |
| Monday | Dissection | | | Histology |
| | | | | Seminar |
| Tuesday | Dissection | | | Thesis |
| Wednesday | Dissection | | | work |
| Thursday | Dissection | CLINICAL POSTINGS | Lunch | |
| | | | Break | Histological |
| | | | | techniques |
| Ender | Disconting | | | / |
| Friday | Dissection | | | embalming |
| | | | | / museum |
| | | | | techniques |
| Saturday | Dissection | | | - |

II YEAR M.D ANATOMY (for second six months)

| Day | 8.00 - 10.00A.M | 10.15. A.M - 1.00 P.M. | 1.00 P.M 2.00P.M. | 2.00 P.M 4.00 P.M. |
|-----------|--------------------|--------------------------|----------------------|---|
| Monday | Dissection | | Lunch Break | Histology Seminar |
| Tuesday | Dissection | Dissertation work | | Thesis work |
| Wednesday | Dissection | | | |
| Thursday | Dissection | | | |
| Friday | Dissection | | | Histological techniques / embalming / museum techniques |
| Saturday | Dissection | ASSIGNMENT TEST | | - |

REVIEW AND PROGRESS OF THESIS WILL BE PRESENTED AT END OF EACH MONTH

FINAL YEAR M.D ANATOMY

| | 8.00 - | 10.15.A.M | 11.00 | 12.00 | 1.00 | 2.00 P.M 4.00 P.M. |
|-----------|------------|-----------|---------|-------|----------|--------------------|
| Day | 10.00A.M | - 11.00 | A.M. | Noo | P.M | |
| Day | | A.M | - | n – | 2.00P.M. | |
| | | | 12.00 | 1.00 | | |
| | | | Noon. | PM | | |
| Monday | Dissection | UG | | | Lunch | NEUROANATOMY |
| wonday | | Lecture | | | Break | SEMINAR |
| Tuesday | Dissection | - | JOURNAL | | | |
| Tuesuay | | | CLUB | | | |
| Wednesday | Dissection | - | UG | - | | EMBRYOLOGY |
| weunesuay | | | Lectur | e | | SEMINAR S |
| Thursday | Dissection | UG | | | | - |
| Thursday | | Lecture | | | | |
| | Dissection | UG | | | | OSTEOLGY/RADIO |
| Friday | | Lecture | | | | LOGY |
| | | | | | | DISCCUSION |
| Saturday | Dissection | ASSIGNI | MENT TI | EST | | - |

*LECTURE CLASSESS WILL BE MONITORED BY THE SENIOR PROFESSORS TO TRAIN THE POSTGRADUATE FOR PEDAGOGY

MAINTENANCE OF LOG BOOK

a. Every Post Graduate student shall maintain a record of skills He/She has acquired during the three years training period certified by the various Head of departments where He/She has under gone training including outside the institution.

b. The student should also participate in the teaching and training programs of Under Graduate students both in Theory and Practicals from the first year onwards of the Post Graduate Degree course.

c. In addition the Head of the department should involve their post graduate students in Seminars, Journal clubs, group discussions and participation in workshops, CME program's national and international conferences organized by the Department, Institution and outside the institution in the state and outside the state.

d. Every Post Graduate student should be encouraged to present short title papers in conferences and submit them for publication in indexed journals. Motivation by the Head of the Department is essential in this area to sharpen the skills of the Post Graduate students.

e. The Head of the Department should scrutinize the log book every three months and certify the work done.

f. At the end of the course the student should summarise the contents and get the logbook certified by the Head of the Department and submit the log book at the time of the University Practical Examination for the scrutiny of the board of examiners.

It is preferable that a post graduate student during the course to present one poster presentation and /or to read one paper at a national /state conference and /or to present one research paper which can be published/accepted for publication/sent for publication during the period of his/her postgraduate studies.

THESIS

Every student registered as post graduate shall carry out work on an assigned research project under the guidance of a recognized post graduate teacher, the result of which shall be written up and submitted in the form of a thesis.

Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the student to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature. Thesis shall be submitted at least six months before the theory and clinical / practical examination.

The thesis shall be a bound volume of a minimum of 50 pages and not exceeding 75 pages of typed matter (Double line spacing and on one side only) excluding certification, acknowledgements, annexure and bibliography.

Thesis should consist of

- (a) Introduction
- (b) Review of literature
- (c) Aims and objectives
- (d) Material and methods
- (e) Result
- (f) Discussion
- (g) Summary and conclusion
- (h) Tables
- (i) Annexure
- (j) Bibliography

Four copies of thesis shall be submitted six months prior to the commencement of the theory examinations on the date prescribed by the Controller of Examinations of this University. The thesis should be approved by the Professor (guide) and the same has to be forwarded to the Controller of Examinations, by the head of the department through the Dean of the college. Two copies are to be submitted as an electronic version of the entire thesis in a standard C.D. format by mentioning the details and technicalities used in the C.D. format.

The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Practical; and on the acceptance of the thesis by two examiners, the student shall be allowed to appear for the final examination.

EVALUATION OF THESIS :

ACCEPTED / NOT ACCEPTED

No marks will be given

SCHEME OF EXAMINATION

The Post-Graduate examinations should be in 3 Parts:

- 1. Thesis, to be submitted by each student at least 6 months before the date of commencement of the theory examination.
- 2. Theory: There shall be four theory papers as given separately.
- 3. Practicals and Viva/Oral.
- 4. Pattern of Examination

FOUR PAPERS – 100 Marks each 3 Hours duration each

| Theory | Title | Duration | Marks |
|------------|-------------------------------|----------|-------|
| Paper – I | Gross anatomy | 3 hrs | 100 |
| Paper – II | Embryology and Genetics | 3 hrs | 100 |
| Dener III | Histology, Neuroanatomy and | 3 hrs | 100 |
| Paper– III | Museum Techniques | | |
| | Surgical Anatomy and Applied | 3 hrs | 100 |
| Paper- IV | anatomy and recent Advances & | | |
| | Embalming techniques | | |
| | | Total | 400 |

Distribution of Marks:-

| | Total 100 Marks |
|----------------|-------------------|
| 10 Short Notes | 10X6 = 60 Marks |
| 2 Essays | 2 X 20 = 40 Marks |

Practical Examinations - 2 days.

Day - 1

| Practicals | Session | Duration | Marks |
|--|----------|----------|-------|
| Practical – I Gross Anatomy (Dissection) | F.N | 3 hrs. | 75 |
| Practical – II Histology | A.N. | 3 hrs. | 75 |
| Breakup Details (Practical – II):- | | | |
| Histology-5 Slides for spotters | n | | |
| 5 X 10 (General – 1, systemic -4) | 50 Marks | | |
| Section Cutting | 10 Marks | | |
| Staining of one Paraffin section | 10 Marks |] | |
| Embedding of one Paraffin Block | | 05 Marks |] |
| | | | |

| Day - II | | | |
|-----------------|-------------------------------|-----------------------|-----|
| Practical – III | Genetics chart – 1 (1x10) | 20 Marks | |
| | Chick Embryo Slide – 1 (1x10) | | |
| | Neuroanatomy 2 Slides | 30 Marks | 50 |
| | Brain Discussion | | |
| | | Total Practical Marks | 200 |
| Peda | gogy = 50 M | larks | |

Pedagogy

50 Marks

Oral/Viva

50 Marks =

MARKS QUALIFYING FOR A PASS

| MARKS QUALIFYING FOR A PASS | MAXIMUM MARKS | QUALIFYING FOR A PASS 50% MARKS |
|---|------------------|------------------------------------|
| Theory Examination | 400 | 200 |
| Practical Including Pedagogy and Viva voce examination | 300 | 150 |

A student shall secure not less than 50% marks in each head of passing which shall include 1. Theory 2. Practical including clinical and viva voce examination.

*"The postgraduate medical students are required to pass theory and practical examinations separately. An examinee should obtain minimum 40% marks in each theory paper and not less than 50% marks cumulatively in all the four papers for Degree examination to be cleared as "Passed" at the said Degree examination"

**As per Medical Council of India notification date* 03.09.2014 *and the same approved in the* 28th *Academic council meet of SRM University held on* 23/03/2015.

EXAMINATION AND EVALUATION

(1) EXAMINERS

(a) All the Post Graduate Examiners shall be recognised Post Graduate Teachers holding recognised Post Graduate qualifications in the subject concerned.

(b) For all Post Graduate Examinations, the minimum number of Examiners shall be four, out of which at least two (50%) shall be External Examiners, who shall be invited from other recognised universities from outside the State and other two will be internal examiners for M.D.

(c) Under exceptional circumstances, examinations may be held with 3 (three) examiners provided two of them are external and Medical Council of India is intimated the justification of such action prior to publication of result for approval. Under no circumstances, result shall be published in such cases without the approval of Medical Council of India.

(d) The guidelines regarding appointment of examiners are as follows;-

1. No person shall be appointed as an examiner in any subject unless he/she fulfils the minimum requirements for recognition as a Post Graduate teacher as laid down by the Medical Council of India and has teaching experience of 8 (Eight) years as a Lecturer / Assistant Professor out of which he has not less than 5 (Five) years teaching experience after obtaining Post Graduate degree. For external examiners, he should have minimum three years experience of examinership for Post Graduate diploma in the concerned subject. Out of internal examiners, one examiner shall be a Professor and Head of Department or Professor

- 2. There shall be at least four examiners in each subject at an examination out of which at least 50% (Fifty percent) shall be external examiners. The external examiner who fulfils the condition laid down in clause 1 above shall ordinarily be invited from another recognised university, from outside the State: provided that in exceptional circumstances examinations may be held with 3 (three) examiners if two of them are external and Medical council of India is intimated with the justification of such examination and the result shall be published in such a case with the approval of Medical council of India.
- 3. An external examiner may be ordinarily been appointed for not more than three years consecutively. Thereafter he may be reappointed after an interval of two years.
- 4. The internal examiner in a subject shall not accept external examinership for a college from which external examiner is appointed in his subject.
- 5. The same set of examiners shall ordinarily be responsible for the written, practical or part of examination.
- 6. There shall be a Chairman of the Board of paper setters who shall be an external examiner and shall moderate the question papers.
- 7. The Head of the Department of the institution concerned shall ordinarily be one of the internal examiners and second internal examiner shall rotate after every two year.

(2) Number of candidates

The maximum number of candidates to be examined in Clinical / practical and Oral on any day shall not exceed six for M.D. degree examination.

3) Number of examinations

The university shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the two examinations.

(4) Doctor of Medicine (M.D.) Anatomy

M.D. examination shall consist of Thesis, Theory Papers, and clinical/Practical and Oral examinations.

(a) Thesis

Every candidate shall carry out work on an assigned research project under the guidance of a recognised Post Graduate Teacher, the result of which shall be written up and submitted in the form of a Thesis.

Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the candidate to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature. Thesis shall be submitted at least six months before the theoretical and clinical / practical examination.

The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical; and on the acceptance of the thesis by two examiners, the candidate shall appear for the final examination.

(b) Theory

(i) There shall be four theory papers.

(ii) Out of these one shall be of Basic Medical Sciences and one shall be of recent advances.

(iii) The theory examinations shall be held sufficiently earlier than the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the start of the Clinical/Practical and Oral examination.

(c) Practical and Oral

(i) Practical examination for the subjects in Basic Medical Sciences shall be conducted to test the knowledge and competence of the candidates for making valid and relevant observations based on the experimental/Laboratory studies and his ability to perform such studies as are relevant to his subject.

(ii) The Oral examination shall be thorough and shall aim at assessing the candidate knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the speciality, which form a part of the examination.

A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical including clinical and viva voce examination.

Evaluation of Answer Scripts

The answer books will be valued by two examiners. One of the two examiners will be from this university and the other will be from any other university. The Average of the two marks secured by the candidate will be taken into account. If the difference between two marks exceeds 20%, the answer scripts shall be valued by the third examiner. The average of the nearest two marks shall be considered as the final mark.

Gross Anatomy

1. Describe in detail the joints, mechanism and muscles involved in supination & pronation movements.

2. Describe the skeletal framework, intrinsic and extrinsic ligaments of Larynx. Add a note on actions of muscles of Larynx.

Write short notes on:-

- 1. Superficial perineal space
- 2. Coronary sinus

Model Question Paper

- 3. Innervation of urinary bladder
- 4. Inguinal lymph nodes
- 5. Azygos vein
- 6. Lesser sac
- 7. Screw home movement
- 8. Inferior constrictor of pharynx
- 9. Auditory tube
- 10. Middle meningeal artery

Marks: 2X20=40

Marks: 10x6=60

MD Anatomy PAPER I

Essay

MD Anatomy PAPER II Embryology and Genetics

Essay

Marks: 2X20=40

1. Describe in detail the formation, fate and associated anomalies of mesonephric duct.

2. Discuss in detail the development of inferior vena cava and associated anomalies.

Write short notes on:-

Marks 10x6=60

- 1. Development of urethra
- 2. Fluorescent in situ hybridization
- 3. Banding pattern of chromosomes
- 4. Development of vagina
- 5. Genetic markers
- 6. Duplication
- 7. Ring chromosome
- 8. Development of lens
- 9. Genetic symbols
- 10. Development of interventricular septum

<u>MD Anatomy</u> <u>PAPER III</u> <u>Histology, Neuro anatomy and Museum techniques</u>

Essay

Marks: 2X20=40

1. Discuss in detail the topography of cerebellum with its functional divisions and connections.

2. Discuss the microstructure of lower respiratory tract.

Write short notes on:-

Marks 10x6=60

- 1. Preparation of a corrosion cast
- 2. Juxta glomerular apparatus
- 3. Fornix
- 4. Freezing microtome
- 5. Periodic acid Schiff stain
- 6. Medial longitudinal bundle
- 7. Nuclei of trigeminal nerve
- 8. Microstructure of skin
- 9. Superior colliculus
- 10. Microanatomy of Thymus

MD Anatomy

PAPER IV

Surgical anatomy and Applied anatomy and recent advances & Embalming techniques

Marks: 2X20=40

Essay

- 1. Describe the fascial spaces in the neck and their applied importance.
- 2. Discuss in detail the surgical anatomy thyroid gland.

Write short notes on:-

Marks 10x6=60

- 1. Embalming fluids
- 2. Stem cells
- 3. Umbilical hernia
- 4. Embalming of a body after autopsy
- 5. Coverings of kidney
- 6. Pancreatic transplantation
- 7. Angiogram
- 8. Trendelenberg's sign
- 9. Great saphenous vein
- 10. Frey's symdrome

RECOMMENDED BOOKS & JOURNALS

GROSS ANATOMY

- 1. Grays Anatomy. The anatomical basis of clinical practive Standing Susan 41st Edition, Churchill Livingston, 2008.
- 2. Essentials of Human Anatomy Part 3: Superior & Inferior Extremities by A.K. Dutta 4th Edition, Current Book, 2009.
- 3. Essentials of Human Anatomy Part 1: Thorax and Abdomen by A.K. Dutta 9th Edition, Current Book, 2010.
- 4. Essentials of Human Anatomy Part 2: Head & Neck by A.K. Dutta 5th Edition, Current Book, 2009.
- Cunninghams Manual of Practical Anatomy 3 Volumes by G.T. Romanes 5th Edition, Oxford, 2003
- 6. Grant's Dissection Patrick, w Tank.15th Edition, Lippincott, 2012.
- Clinical Anatomy for Students Problem solving approach Neeta Kulkarni 2nd Edition, Jaypee, 2012.

EMBRYOLOGY

- Hamilton Boyd and Mossman's human embryology prenatal development of form & function, 4th Edition Hamilton, William James et al. Macmillan, 1976
- 2. Langman's Medical Embryology T W Sadler, 13th Edition, Lippincott, 2014
- 3. Human Embryology by A.K.Dutta 4th Edition, Current Book, 2000.
- 4. Human Embryology by Inderbir Singh 10th Edition, J P, 2014.
- 5. Larsen's Human Embryology 5th Edition, Schoenwok et al, Churchill Livingstone, 2014
- 6. The Developing Human Clinical oriented embryology by Keith L.Moore 1^{0th} Edition, Saunders, 2015.
- 7. Before we are born by More & Persaud 7th Edition, Saunders, 2008.

GENETICS

- Thompson & Thompson Genetics in Medicine 8th Edition Nussbaum et al, Elsevier, 2015
- Emery's Elements of Medical genetics, 14th Edition, Peter Turnpenny & Sian Ellard, Churchill Livingston, 2011

EMBALMING & MUSEUM TECHNIQUES

- 1. Internet
- 2. Anatomical Techniques Tompset
- 3. Embalming Techniques Dr. Jayavelu
- 4. Embalming Principles & Legal Aspects M.L. Ajmani Jaypee Publication, 2009.

NEURO ANATOMY

- 1. Barr's Human Nervous System an anatomical viewpoint. John Kiernan.A, 10th Edition, Lippincott, 2013.
- 2. Clinical Neuro Anatomy Snell, Richard 7th Edition, Lippincott, 2010.
- 3. Text Book of Clinical Neuro anatomy Vishram Singh 2nd Edition, Elsevier, 2010.
- 4. Inderbir Singh's text book of Human neuroanatomy, 9th Edition, Jay Pee, 2014.
- 5. Human Neuroanatomy Truex & Carpenter
- 6. Text book of Neuroanatomy Dutta 3rd Edition, Current Book, 2007.

OSTEOLOGY

1. Gray's Anatomy - Standring Susan 40th Edition, Churchill Livingston, 2008.

SURGICAL & APPLIED

- Last Anatomy Regional & Applied anatomy Chummy Sinnatamby.S. 12th Edition, Churchill Livingston, 2011.
- 2. Hollinshed Text Book of Anatomy 5th Edition, Cornelius Rosse, Lippincott, 1997.
- 3. Synopsis of surgical anatomy Mcgregor 12th Edition, Varghese Publisling, 1986.
- 4. Clinical Anatomy by Regions Snell Richard 9th Edition, Lippincott, 2012.
- 5. Clinical Oriented anatomy Keith L. Moore 7th Edition, Lippincott, 2014

HISTOLOGY

- 1. Carltons Histological Techniques Drury R.A.B. Wallington E.A,
- 2. Ham's Histology
- 3. Text Book of Histology Bloom & Fawcet.T
- 4. Tissues of the Body Lee Gross Clark.
- 5. Basic Histology –Juncquera 13th Edition, McGraw Hill, 2013.
- 6. Histological Techniques Bancroft 7th Edition, Churchill Livingston, 2012.
- 7. Wheater's functional Histology Barbara young 6th Edition, Elsevier, 2014.
- 8. Grays Anatomy by Standring Susan 40th Edition, Churchill Livingston, 2008.

COMPARATIVE ANATOMY: by Romer.

BIOSTATISTICS:

An Introduction to Biostatistics a Manual for students in Health Sciences P.S.S Sunder Rao. 3rdEdition, Prentice-Hall, 1996

JOURNALS

- 1. Surgical & Radiological Anatomy
- 2. Journal of Anatomical Society of India
- 3. Indian Journal of Human Genetics
- 4. Journal of Anatomy
- 5. American Journal of Anatomy
- 6. International journal of Anatomy

The common denominator for success is hard work

- John. D. Rock feller Jr.

-