



YENEPOYA UNIVERSITY

Deralakatte, Mangalore - 575018

**REGULATIONS AND CURRICULUM GOVERNING
POSTGRADUATE PROGRAM (MD) IN
FORENSIC MEDICINE**

(CURRICULUM - EFFECTIVE FROM 2010-11)

ATTESTED

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02.07.2010

NOTIFICATION

Sub: Curriculum for starting MD/MS in the departments of Anatomy,
Biochemistry, Physiology, Pharmacology, Microbiology,
and Forensic Medicine

Ref: Resolution of the Academic Council at its 4th Academic Council
meeting held on 02.07.2010, supplementary agenda - 1

The Academic Council at its 4th meeting and subsequently the Board of Management at its 11th meeting held on 02.07.2010 have resolved to approve the curriculum for starting the MD/MS in the departments of Anatomy, Biochemistry, Physiology, Pharmacology, Microbiology and Forensic Medicine.

This notification is issued for implementation with effect from the academic year 2010-2011.



REGISTRAR

To:

The Principal - YMC

Copy to:

1. Controller of Examinations
2. Academic Section

GOALS

The goal of teaching postgraduate students in Forensic Medicine and Toxicology is to produce a competent specialist who:

- i. Is able to provide basic and specialized services in relation with Medico legal responsibilities in the practice of medicine and process of crime investigation.
- ii. Must be capable of setting enquiries on right track in criminal matters and connected medico legal problems.
- iii. Has acquired competency to be teacher, trainer, researcher and leader in the field.
- iv. Has acquired knowledge of law in relation to practice of medicine, medical negligence and investigation of crime against human beings. Respect for the codes of medical ethics consistent with national health policy and law of the land as a citizen of India is of course mandatory for them.

OBJECTIVES

At the end of the course, the candidate shall be able to:

- i. Conduct a competent Medico legal Autopsy, collect appropriate evidence pertaining to Cause/Mode/Manner of death and identification of deceased and assailant. They must also be able to understand and interpret other important medico-legal aspects of death due to natural and unnatural conditions and poisonings.

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- ii. Must be able to visit scene of crime and shall detect, describe, interpret the observations and conclude the procedure in a technically competent manner.
 - iii. Have fundamental knowledge of all branches of medical disciplines related to their medico-legal applications. They must also be able to refer and understand relevant application of few other branches of science like botany, zoology, chemistry and physics. It is also expected that they must be reasonably aware of using computer.
 - iv. Be aware of laws in relation to medico-legal work, medical practice and be acquainted with related relevant amendments and also related judgments passed by constitutional courts.
 - v. Understand the important procedures and applicability of general principals of analytical toxicology, ballistics, and immunology, occupational and environmental hazards.
 - vi. Serve as a future teacher, trainer, researcher and leader in the field of medico-legal faculty. They must also be able to offer technically competent consultancy services to the health, home and law departments in connection with Medico-legal work, crime investigation process and courts.

Regulations

1. Pre and Para clinical Post Graduate Degree courses

The following courses of studies may be pursued

- A. M. D. [Doctor of Medicine]
 1. Anatomy
 2. Physiology
 3. Biochemistry

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4. Pharmacology
 5. Pathology
 6. Microbiology
 7. Community Medicine.
 8. Forensic Medicine

Clinical Post Graduate Degree course are also available under university.

2. Eligibility for Admission

MD/MS Degree : A candidate affiliated to this university and who has passed final year MBBS examination after pursuing a study in medical college recognized by the Medical Council of India or from recognised Medical College affiliated to any other university recognized as equivalent there to, and has completed one year compulsory rotating internship in a teaching institution or other institution recognized by Medical Council of India and has obtained permanent registration of any State Medical Council shall be eligible for admission.

3. Obtaining Eligibility Certificate by the University before making Admission

No candidate shall be admitted for any post Graduate degree course unless the candidate has obtained and produced the eligibility certificate issued by the University. The candidate has to make an application to the University with the following documents along with the prescribed fee:

1. MBBS Pass / degree certificate issued by the University.
 2. Marks card of all the University examinations passed under MBBS course.
 3. Attempt Certificate issued by the Principal
 4. Certificate regarding the recognition of the Medical College by Medical Council of India.
 5. Completion of Internship Certificate.
 6. In case Internship was done in a non-teaching hospital, a certificate from Medical Council of India that the hospital has been recognized for Internship is mandatory.
 7. Registration by any State Medical Council and
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8. Proof of SC/ST or category I, as case may be.

Candidates should obtain the Eligibility Certificate before the last date for admission as notified by the University.

A candidate who has been admitted to postgraduate course should register his/her name in the University within a month of admission after paying the registration fee.

4. Intake of Students

The intake of students to each course shall be in accordance with the ordinance in this behalf. At the moment in Forensic Medicine, 2 Post graduates per year.

5. Duration of Study

- a. M.D/M.S Degree Courses.

The course of study shall be for a period of 3 years consisting of 6 terms.

6. Method of training

Training of postgraduate for degree shall be residency pattern with graded responsibilities in the management and treatment of patient entrusted to his/her care. The participation of the student in all facets of educational process is essential. Every candidate should take part in seminar, group discussions, grand rounds, case presentation, Clinics, journal, review meetings, scientific society meetings, CPC and clinical meetings. Every candidate should participate in the teaching and training program of under graduate students. Training should include involvement of laboratory and experimental work and research work. Basic medical science student should be posted to allied and relevant clinical departments or institutions. Similarly, clinical subjects students should be posted to basic medical sciences and allied specialty departments or institutions.

7. Attendance, Progress and Conduct

1. A candidate pursuing degree course should work in the concerned department of the Institution for the full period as a full time student.
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2. No candidate is permitted to run a clinic/Laboratory/Nursing home while studying post graduate course.
 3. Each year shall be taken as a unit for the purpose of calculating attendance.
 4. Every student shall attend symposia, seminars, conferences, journal review meeting, grand rounds, CPC, case presentation, Clinics, and lectures during each year as prescribed by the department and not absent himself/ herself from work without valid reasons.
 5. Every candidate is required to attend a minimum of 80% of the training each academic year of the Postgraduate course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% attendance of training period every year
 6. Any student who failed to complete the course in the manner stated above shall not be permitted to appear for the University Examinations.

8. Monitoring progress of studies :

1. Work diary/ logbook- every candidate shall maintain a work diary and record of his/her participation in the training program conducted by the department such as journal reviews, seminars etc. (please see chapter IV for model checklist and logbook specimen copy). Special mention, may be made of the presentation by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinized and certified by the Head of the Department, Head of the Institution, and presented in the university practical/clinical examination.
 2. Periodic tests: Concerned departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practical/clinical and viva voce. Records and marks obtained in such tests will be maintained by the Head of the Department and send to the university, when called for.
 3. Records: Records and marks obtained in tests will be maintained by the Head of the department and will be made available to the University or MCI.
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9. Dissertation

1. Every candidate pursuing MD/MS Degree course is required to carry out work on a selected research project under the guidance of a recognized post graduate teacher. The result of such work shall be submitted in the form of dissertation
2. The dissertation is aimed to train a Postgraduate student in research methods and techniques. It includes identification of problem, formulation of hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.
3. Every candidate shall submit to the Registrar (academics) of the University in the prescribed Performa, a synopsis containing particulars of purposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the University the synopsis shall be send through the proper channel
4. Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior approval of the University.
5. The dissertation should be returned under the following headings:
 - i. Introduction
 - ii. Aims or Objectives of study
 - iii. Review of literature
 - iv. Materials and methods
 - v. Results
 - vi. Discussion
 - vii. Conclusion
 - viii. Summery
 - ix. References
 - x. Tables
 - xi. Annexure

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6. The returned text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of the paper (A4 size, 8.27"x 11.69") and bound properly. Spiral binding should not be done. A declaration by the candidates that the work was done by him/her shall be included. The guide, Head of the Department and Head of the institution shall certify the dissertation.
 7. **Four copies of dissertation along with a soft copy on a CD shall be submitted** to the Registrar (Evaluation), six months before final examination on or before the dates notified by the University
 8. The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential preconditioned for a candidate to appear in the University examination.
 9. **Guide:** The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as per Medical Council of India Minimum Qualifications for Teachers in Medical Institution Regulations, 1998. Teachers in a Medical College/ institution having a total of eight years of teaching experience out of which at least five years teaching experience as lecturer or assistant professor gained after obtaining postgraduate degree shall be recognized as postgraduate teachers
A **co-guide** may be included provided the work requires substantial contribution from a sister department or from another medical institution recognized or teaching / training by Yenepoya University/ Medical Council of India. The co guide shall be recognized a post graduate teacher of Yenepoya University.
 10. **Change of guide:** In the event of a registered guide leaving the college for any reason or the event of death of guide, guide may be changed with prior permission from the University.

Job Responsibilities

Junior residents should:

- 1) Maintain log book on daily basis.
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- 2) Maintain daily record of post graduate activities including:
 - Practical exercises
 - Statistics exercises
 - PG teaching schedule
 - 3) Prepare for undergraduate and postgraduate practical.
 - 4) Provide the basic medico-legal services in relation to practice of Medicine.
 - 5) To attend one national and one state conference and present atleast one paper and one poster.
 - 6) To send one paper for publication in national or international journal at the time of taking exams.
 - 7) Must be able to conduct, interpret and report common medico-legal autopsies.
 - 8) Identify diagnose and manage common acute and chronic poisonings.
 - 9) Be able to examine, interpret, report and if required give expert opinion in various clinical medico-legal matters like age estimation, alcoholics, sexual offences, injuries, abortion, sex determination, paternity, disability evaluation etc.
 - 10) Teach the practical undergraduate medical students the subject of forensic medicine and also to actively participate in the training and re-orientation programmes of interns.

e. Syllabus

- Specification mentioned such as addition, number of pages, cost etc, subject to change with newer edition.
 - Incorporation of Objective Structure Practical Examination (OSPE) in exams.
 - To include objective structure practical examination for legal procedure, identification, Medico legal Autopsy, Thanatology, Mechanical Injury and add them as spotters in Practical examination.
 - More models, exhibits, slides, bones and 'X' rays to be added for practical examination
 - Curriculum Enhancement for Undergraduates. Different Acts and their amendments needs to be added as class for under graduates courses. The same content will be uploaded in YENGAGE and will be available for students for further use. (POCSO ACT).
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THEORY

3.1 Basic medical sciences namely Anatomy, Physiology, Pharmacology, Pathology and Microbiology as applied to Forensic Medicine.

- 3.1.1 Surface Land marks & regional Anatomy of medico legal significance.
- 3.1.2 Comparative anatomical study of Male & Female skeleton.
- 3.1.3 Anatomy of neck with special reference to violent Asphyxial deaths.
- 3.1.4 Anatomy of reproductive organs.
- 3.1.5 Gross anatomy of heart and coronaries.
- 3.1.6 Outline of embryonic / foetal development.
- 3.1.7 Microscopic anatomy (histology of different organs & tissues, such as brain, heart, lungs, liver, kidneys, spleen, thyroid, adrenals, bone, skin).
- 3.1.8 Body water & fluid balance.
- 3.1.9 Blood grouping & RH incompatibility.
- 3.1.10 Physiology of menses & pregnancy.
- 3.1.11 Physiology of thermo-regulation.
- 3.1.12 Patho-physiology of shock.
- 3.1.13 Blood sugar regulation & diabetic coma, hypoglycaemic coma.
- 3.1.14 Outline of the functions of circulation, respiration, and haemopoietic, and nervous, digestive, endocrine, excretory, reproductive and musculo-skeletal system. Patho-physiology of sexual functions and histopathology.
- 3.1.15 General pathology: Pathology of cell / tissues – Degenerative changes & secondary changes(atrophy, hypotrophy, aplasia, Hyperplasia, ischemia, necrosis, infarction, cloudy swelling, amyloidosis and embolism, asphyxia deaths, electricity, gun-shot wounds, poisoning, thrombo-embolism, fat embolism, aspirations, wound healing, histological determination of time of death.

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- 3.1.16 Body's local and systemic response to trauma.
 - 3.1.17 Healing and fibrosis (Pathology of scar).
 - 3.1.18 Common general and systemic diseases and caused by physical/chemical agents.
 - 3.1.19 Disorders of infancy and old age changes relevant to forensic medicine.
 - 3.1.20 Pathology gross and microscopic in myocardial infarction, congenital heart diseases, tuberculosis, cirrhosis, malnutrition, starvation.
 - 3.1.21 Histology with important Staining Procedures.
 - 3.1.22 Microbiology and serology of venereal diseases infections.
 - 3.1.23 Microbiology of Cadavers.
 - 3.1.24 Relevant General Pharmacology, Pharmacology of Important Antidotes & Drugs of Addiction, Anti-sera, Hormones & Anaesthetic Drugs.
 - 3.2 Forensic Medicine including other clinical subjects as applied to it.**
 - 3.2.1 Identification of the living and dead, determination of race and religion, sex, age, external peculiarities such as moles, birth marks, occupational marks, anthropometry, finger prints, and foot prints handwriting etc. and their medico legal aspects. Evaluation of evidence from the skeleton. Problems of reconstruction, superimposition technique.
 - 3.2.2 Medico legal aspects of allergy and anaphylaxis.
 - 3.2.3 Evidence from trace elements like hair and biological stains of blood, semen, sweat, saliva, milk, sputum etc.
 - 3.2.4 Laboratory investigations as required in medico legal situations like unconsciousness, sudden death from unknown causes, therapeutic misadventures, industrial exposures and the like.
 - 3.2.5 Outlines of analytical and Histopathological techniques as applied to forensic medicine.
 - 3.2.6 Injuries and Thermal death from cold coma, heat coma, electricity coma, lightning and radiation.
 - 3.2.7 Regional injuries.
 - 3.2.8 Death from starvation.
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- 3.2.9 Mechanical injuries & their medico legal aspects in relation to nature of injuries, accidental, suicidal, homicidal distinction between injuries caused during life and after death.
 - 3.2.10 Medico legal examination of injured person. Regional and Transportation injuries.
 - 3.2.11 Examination of weapon in relation to inflicted injuries.
 - 3.2.12 Firearm and Thermal injuries.
 - 3.2.13 Causes of death from wounds.
 - 3.2.14 Forensic radiology in identification, pathology, dentistry, child abuse, trauma, medico legal implications of radiological procedures.
 - 3.2.15 **FORENSIC PSYCHIATRY:** Various Acts in relation to Forensic psychiatry, Classification of mental disorders and abnormal human behaviours. Medico legal aspects of INSANITY and abnormal human behaviour as regards to civil & criminal responsibilities and rules regarding admission, treatment and discharge of mentally ill person in the Mental Hospitals, Feigned insanity, Juvenile delinquency in the juvenile court. Restraint of mentally ill person.
 - 3.2.16 Biology of behavior, emotion, stress, attitudes, normal & abnormal personalities.
 - 3.2.17 Type of personalities.
 - 3.2.18 Psychological assessment & testing personality and its disorders, abnormal psychology, health psychology, assessment strategies in medical education.
 - 3.2.19 Study of suicide, production of personality and circumstances. Post mortem analysis of suicide notes and circumstances.
 - 3.2.20 Counseling in normal sexual behaviour and sex related disorders.
 - 3.2.21 Medico legal aspects of emergency & resuscitation intensive care, medical negligence death.
 - 3.2.22 Trauma, Work Stress & Disease.
 - 3.2.23 Torture medicine: Medico legal aspects & duties of physician in cases of torture.
 - 3.2.24 Mass disasters.
 - 3.2.25 Bombs and other explosives. Biological and chemical warfare and barotrauma.
 - 3.2.26 Impotence, Sterility, Artificial insemination, sterilization. Test tube babies & their medico legal aspects.
 - 3.2.27 HIV and AIDS.
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- 3.2.28 Virginity, Pregnancy, Delivery in relation to suit of nullity of marriage, divorce, and legitimacy affiliation cases etc.
 - 3.2.29 Abortion – Criminal & Justifiable, Laws in relation to criminal abortion. Duties of medical persons when called to treat a case of criminal abortion. MTP Act 1971.
 - 3.2.30 Sexual Offences – Rape, Incest, unnatural sexual offences such as sodomy, Tribadism, Bestiality & Buccal Coitus, Sexual perversions.
 - 3.2.31 Infanticide.

3.3 Forensic Toxicology & Medical Jurisprudence

- 3.3.1 General & Forensic Toxicology including Classification, Mechanism of Action , Clinical Features, Diagnosis , Management , Autopsy appearances & Medico-legal Importance of Poisons.
 - 3.3.2 Addiction, de-addictions and drug abuse.
 - 3.3.3 Important Toxicological Analytical Techniques.
 - 3.3.4 Forensic Science: Recent Advances & Modern Trends.
 - 3.3.5 Introduction & working of various Wings of Forensic Science Laboratory Immunology, Examination of Biological Trace material Evidence. Ballistics, Identification. Crime Laboratory, Forensic Photography.
 - 3.3.6 Definition of Medical Jurisprudence.
 - 3.3.7 Introductory remarks, Criminal Courts & their powers, inquests and legal procedures, procedure in court, medical evidence, various medical certificates, medico legal reports, dying declaration & dying deposition, witness, conducts and duties of the doctor in the witness box, professional secrecy.
 - 3.3.8 Regulation of medical profession, various governing bodies, their constitution & functions. Laws in relation to medical man.
 - 3.3.9 Rights, duties & privileges of a registered medical practitioner.
 - 3.3.10 Informed consent in medical practice. Infamous conduct. Medical malpraxis.
 - 3.3.11 Physician duties under various public health & medical Acts.
 - 3.3.12 Problems of privileges and confidentiality etc. Physician in the Witness Box.
 - 3.3.13 Liabilities of Hospitals, nursing home and public dispensaries to patients.
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- 3.3.14 Medical practice in relation to Insurance.
 - 3.3.15 Relevant parts of Indian Penal Code of criminal procedure, Indian Evidence Act, Suppression on Immoral Trafficking Act. Workman's Compensation Act and other Laws related to medical practice.
 - 3.3.16 Law & Procedures related to Organ Transplantation.
 - 3.3.17 Legal & Ethical aspects of Family planning procedures.
 - 3.3.18 Therapeutic trial & human experimentation etc.
 - 3.3.19 Medico legal aspects of Organ & Tissue transplantation.
 - 3.3.20 Euthanasia.
 - 3.3.21 Supreme Court and High Court Landmark judgments related to Forensic Medicine and Medical Jurisprudence.
 - 3.3.22 Relevant Laws, Legal Procedures & Psych General Medical Jurisprudence including MCI, MMC, Ethics & Bio Med Research, Consent, Negligence, Relevant Sections , Courts & their powers , Evidence & Recording of Evidence , artificial reproductive techniques, Stem cell research and their ethical issues.
 - 3.3.23 Relevant Sections of IPC, Cr Pc, IEA, Acts Like CPA, MTP, PCPNDT, NDPS, OT, NHRC.
 - 3.3.24 Medical certification of cause of death and relevant vital statistics.
 - 3.3.25 Day-to-day MLC problems in hospitals.
 - 3.3.26 Recent Laws applicable to medical man.
 - 3.3.27 Value of medical opinion in the court of law.

3.4 Forensic Pathology including Forensic immunology &Recent advances.

- 3.4.1 Legal autopsy of dead body, decomposed and mutilated body or its fragments / skeleton, bones, exhumation & rules regarding it.
 - 3.4.2 Death, manner of death, modes of death, cause of death, sudden death, signs of death and changes following death. Estimation of post mortem interval, Forensic Entomology, Post mortem chemistry of body fluid like blood, CSF and vitreous humour, presumption of death and presumption of survivorship. Violent asphyxial deaths: Hanging, Strangulation, Suffocation and Drowning.
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- 3.4.3 Death from sudden violent, suspicious, unknown and unnatural cause, disease following trauma.
 - 3.4.4 Basic concepts of immunology and serology.
 - 3.4.5 Principles of various immune-serological tests, precipitin test, pregnancy test, sperm antibody test.
 - 3.4.6 Role of immunological techniques in crime investigation and exclusion of parentage.
 - 3.4.7 Incompatibility and adverse reaction of drugs commonly used in therapy etc.
 - 3.4.8 Anaphylaxis and hypersensitivity reactions.
 - 3.4.9 Different types of teaching aids, methods of teaching & question paper formation of different types (MCQs, Structures, Traditional, Short, and Essay Types).
 - 3.4.10 DNA & Finger Print System, Lie Detector & Polygraph, Norco-analysis.
 - 3.4.11 National Health policies.
 - 3.4.12 Life saving maneuvers and pre-hospital first aid.
 - 3.4.13 Routine and advanced Imaging Techniques and equipments.
 - 3.4.14 Medico-legal record keeping.
 - 3.4.15 Basics of medical education technology and research methodology.
 - 3.4.16 Computer and its use and its applicability in the specialty.
 - 3.4.17 Medical auditing.

Note: The project syllabus is minimal and may require further improvement time to time as per requirements of MCI and the advances in the specialty of forensic medicine & toxicology.

PRACTICAL

1. Medico-legal autopsies.
 2. Age estimation
 3. Medico-legal Injury report preparation.
 4. Medico-legal examination of an Alcoholic and other drugs;
 5. Medico-legal examination in cases of Sexual offences
 6. Medico-legal examination of Poisoning cases
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7. Psychiatric assessment of patient.
 8. Medico-legal examination of bones, weapons, clothing, wet specimens, poisons.
 9. Detection of common poisons in Toxicology Laboratory.
 10. Medico-legal examination of Photographs.
 11. Medico-legal examination of X-rays.
 12. Laboratory examination of Biological trace material evidence.
 13. Court evidence / attendance.
 14. Awareness of various intensive care setups & Operation Theatre setups.
Awareness of medico legal & crime Laboratory instruments & Equipments.
 15. Attending CME/Workshops/Conference; involvement in UG Teaching.

4. Teaching Program

4.1 General Principles

Acquisition of practical competencies being the keystone medical education, postgraduate is skills oriented.

Learning in postgraduate program is essentially self-directed and primarily emanating from academic and experimental work. The formal sessions are merely meant to supplement this core effort.

4.2 Teaching sessions

In addition to undergraduate teaching by postgraduate students, there are daily sessions of formal teaching. Each MD student has to present Seminars, Journal clubs, perform medico legal autopsies, prepare medico legal reports. They are also allotted time for doing work related to thesis.

Candidates must actively participate in Postmortem Examination, Clinical Medico legal cases, Laboratory work, Clinico-pathological Conferences, Seminars, Journal Clubs, Group Discussions, Visit to Scene of crime, Court Evidence & Research work. The facilities offered by other Clinical & Basic Science Departments are made available to them.

The postgraduate Student shall be required to actively participate in the Teaching / Training programmes of undergraduates, nursing students, and interns. The candidates are also expected to be aware of basics of medical education teaching technology principles and use of audiovisual aids in the same.

The postgraduate Student should maintain a Log Book of the work assigned to him. This log book will be assessed by the postgraduate Guide of the Student and will be jointly evaluated by the Guide & Head of Department.

4.3 Teaching Schedule

The suggested departmental teaching schedule is as follows:

Monday: Thesis work reporting to guide and to the department

Tuesday: Journal club

Wednesday: Autopsy report presentation

Thursday: Presentation of clinical forensic medicine cases

Friday: Seminar

Saturday: Statistics

End of each month: Theory test

6 monthly: Grand viva

Note:

- All sessions are to be attended by the faculty members. All PGs are supposed to attend the sessions.

- All the teaching sessions are assessed by the consultants at the end of session and marks are given out of 10 (for participant) & 100 (for presenter) and kept in the office for internal assessment

- Attendance of the residents at various sessions has to be at least 75%.

5. Posting:

The postgraduate student shall rotate through the following department and acquire the relevant knowledge as follows:

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- a. **Anatomy:** Dissection techniques, Gross & Histological appearances of Vital Organs & Endocrines. Forensic Osteology, Anthropometry, Embalming & Relevant Embryology.
 - b. **Physiology & Biochemistry:** Functional aspects of Vital Organs & endocrines, Physiology & Biochemistry of Blood, Semen, Saliva, Sweat, CSV, P.M. Biochemistry of Body Fluids.
 - c. **Pathology & Microbiology:** Injury, Inflammation, Repair, Thrombus-Embolism, Shock, Gross & Microscopic Appearances of Vital Organs and histopathology in cases of sudden death e.g. Myocardial infarctions and other related diseases e. g, which can cause sudden death by complications e.g. tuberculosis, renal failure etc.& Endocrines Imp. Staining techniques, Museum Procedures, Infection, Immunology, HIV, Anaphylaxis, Insulin, Penicillin, Observation- Collection-Preservation & Forwarding Of Pathological & Microbial Evidence.
 - d. **Medicine +Paediatrics +Psychiatry +Pharmacology+Medical Record Section:** Awareness of Diagnosis, Evaluation of ECG in cases of Myocardial Infarctions Medico legal Aspects & Management of Critical Care, Poisoning & Psychiatry cases, Visit to MICU Set Up, important Paediatric procedures + NICU Set Up, Pharmacology & Detection Of Drugs of Dependence. Casualty: First Aid , Examination, Diagnosis & Medical + Medico Legal Management of Clinical Medico-legal cases, Dying Declaration and Dying deposition, Gastric Lavage, Parental Injections, Emergency Tray, Casualty Administration in Mass Disasters.
 - e. **Surgery +Orthopaedics +Dentistry +Radiology + Anaesthesiology:** Awareness regarding Examination, Diagnosis & Medical + Medico Legal Management of cases Of Imp. Regional Injuries (Poly trauma & Burns), Injury certification & Disability Evaluation, X-ray findings in Bony Trauma Age determination cases Intracranial hemorrhages with the help of MRI and CT Scans Visit to Surgical ICU & Operation Theatre, Awareness of imp Anaesthetic Procedures and complications, Important OT Instruments & Equipments.
 - f. **Obstetrics & Gynaecology:** Abortion, Sterilization Techniques, Introduction to Major Obs.& Gyn. Procedures, Prenatal Diagnostic Techniques. Study of fetuses and placenta.
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g. **Forensic Science Laboratory:** Introduction to various sections of the FSL Setup & Instrumentation, Introduction to & relevant awareness of imp Qualitative & Quantitative Detection & Analytical Techniques. Introduction to & relevant awareness of Identification, Biology, Chemistry, Toxicology & Ballistics Divisions.

Note:-The Casualty Posting should be split in to two periods. The initial posting during First Year is introductory type. The Second Casualty posting is during Second year. This posting is major one & it is expected that students must be exposed to maximum quantity & variety of cases. Their ability to manage the casualty in major casualties can be observed during this period.

1. Dissertation

6.1 Every candidate shall carry out work on an assigned research project under the guidance of a recognized Postgraduate Teacher; the project shall be written and submitted in the form of a Thesis.

6.2 Every candidate shall submit thesis plan to the University within nine months from the date of admission.

6.3 Thesis shall be submitted to the University six months before the commencement of theory examination i.e. for examination May/June session, 30 November of the preceding year of examination and for November/December session, 31 May of the year of examination.

6.4 The students will identify a relevant research question; (ii) conduct a critical review of literature; (iii) formulate a hypothesis; (iv) determine the most suitable study design; (v) state the objectives of the study; (vi) prepare a study protocol; (vii) undertake a study according to the protocol; (viii) analyze and interpret research data, and draw conclusions; (ix) write a research paper.

6.5 Analytical toxicology training to carryout tests in case of poisoning and to prepare the report.

6.6 Forensic Science Laboratory/Regional Forensic Science Laboratory to understand the various tests carry out the fallacies and the method of reporting.

7. **Assessment.**

All the PG residents are assessed daily for their academic activities and also periodically.

2. **General principles**

- The assessment is valid, objective, and reliable.
- It covers cognitive, psychomotor and affective domains.
- Formative, continuing and summative (final) assessment is also conducted in theory as well as practicals /clinical. In addition, thesis is also assessed separately.

7.2. **Formative**

The formative assessment is continuous as well as end-of-term. The former is based on the feedback from the senior residents and the consultants concerned. End-of-term assessment is held at the end of each semester (up to the 5th semester). Formative assessment will not count towards pass/fail at the end of the program, but will provide feedback to the candidate.

Syllabus updated by BoS meeting

Post Graduate Curriculum Innovations: Disaster Victim Identification and Laboratory investigation for bones to fix identity (6 hours).

MD Details of Examination

Schedule of examination

The examination for MD/MS courses shall be held at the three academic years (six academic terms). The University shall conduct two examinations in a year at an interval of four to six months between the two examinations. Not more than two examinations shall be conducted in an academic year.

10. Scheme of Examination

MD/M.S Degree

MD/M.S Degree examinations in any subject shall consist of dissertation, written paper (Theory), Practical/Clinical and viva voce.

1. **Dissertation:** Every candidate shall carryout work and submit a dissertation as indicated in SI.NO.9. Acceptance of dissertation shall be precondition for the candidate to appear for the final examination.
2. **Written Examination (Theory):** A Written Examination shall consist of four question papers, each of three hours duration. Each paper shall carry 100marks. Out of the four papers, the 1st paper in clinical subjects will be on applied aspects of basic medical sciences. Recent advances may be asked in any or all the papers.
3. **Practical/ Clinical Examination:** In case of practical examination, it should be aimed at assessing competence and skills of techniques and procedures as well as testing students ability to make relevant and valid observations, interpretations and inference of laboratory or experimental work relating to his/her subject.In case of clinical examination, it should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases.The total marks for Practical/ Clinical Examination shall be 200.
4. **Viva Voce:** Viva Voce examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The total marks shall be 100 and the distribution of marks shall be as under.
 - I. For examination of all components of syllabus 80marks
 - II. For Pedagogy 20Marks
5. **Examiners:** There shall be at least four examiners in each subjects. Out of them two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment, as an examiner shall be as lay down by Medical Council of India.
6. **Criteria for declaring as pass in University examination:** A candidate shall have to appear in all four theory papers, practical/clinical and viva voce examination conducted by the University and secure not less than 50% marks in each head of passing which shall include (1) Theory,(2) Practical including clinical and viva voce examination.A candidate securing less than 50% of marks as described above shall

be declared to have failed in the examination. Failed candidate may appear in any subsequent examination upon payment of fresh fee to the registrar (Evaluation)

7. **Declaration of Distinction:** A successful candidate passing the University examination in first attempt will be declared to have passed the examination with distinction, If the grand total aggregate marks is 75% and above. Distinction will not be awarded for candidates passing the examination in more than one attempt.
8. **Number of candidates per three years.** The maximum number of candidates for practical/clinical and viva voce examination shall be as under :
MD/MS course: Maximum of six per three years.

Internal Assessment

Items Marks

1. Personal attributes 20
 2. Clinical skills and performance 20
 3. Academics activities 20 (Journal club, seminars, drug review)
 4. End of term theory examination 20
(1st year, 2nd year, 2 years and 9 months)
 5. End of term practical examination / Oral 20
- The record of internal assessment will be presented to the board of examiners for consideration at the time of final examination. Personal attributes.
 - Availability: Punctual, available continuously on duty, responds promptly to calls and takes proper permission for leave.
 - Sincerity and motivation: Dependable, honest, admits mistakes, does not falsify information, exhibits good moral values, loyal to institution, has initiative, takes on responsibilities, goes beyond routine work, exhibits keen desire to learn.
 - Diligence and performance: Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical case work up and management (where applicable), skilled in procedures, proficient in record keeping and file work.
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	examination		
4	Examination of the accused in an alleged sexual assault / Potency	25 mt	15
5	Wound Certificate	20 mt	15
6	Drunkenness/Fitness	20 mt	15
7	Blood Stains/ Blood	30 mt	15
	Discussion	40 mts	
C	Museum specimens/spotters	3 hr	30
8	Age X rays	30 mt	5
9	Wet/Soft Specimens	30 mt	5
10	Photographs	30 mt	5
11	HPE Slide/smear identification	30 mt	5
12	Weapons	30 mt	5
13	Toxicology specimens	30 mt	5
	Discussion	1 hr	
D	Expert Opinion		
14	Postmortem/ML Report/Ethical/Negligence Issues	45 mt	10
15	Micro teaching	30 mt	10
E	Grand Viva	1 hr	100

Paper 1: Basic medical sciences

Time: 3 Hours M.M.: 100

Note: Attempt all questions.

Long answer

[20X2=40]

1. Discuss the Morbid anatomy of intracranial Hemorrhages. Tabulate the differences between pathological Hemorrhages? [20]
2. Give a brief account of the examination of biological samples encountered in the medico legal practice? [20]

Write short notes on

[06x10=60]

3. Forensic anatomy of the human Pelvis.
4. Pathophysiology of Rigor Mortis.
5. Metabolism of Ethanol and Methanol Poisoning.
6. Postmortem clot.

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7. Callus.
 8. Blood group antigens.

Paper 2: Forensic Medicine including other clinical subjects as applied to it

Time: 3 Hours MM: 100

Note: Attempt all questions.

Long answer [20X2=40]

1. Discuss the data on which the approximate time since death may be determined in medico legal cases and mention the factors that influence such estimation.
[20]
2. Describe the guideline for examination death associated with Surgery and Anesthesia.[20]

Write short notes on [06x10=60]

3. Medico legal questions in relation to burns.
4. Consent to Medical treatment.
5. Preservation of Tissue/Material for DNA analysis.

Paper 3: Forensic Toxicology & Medical Jurisprudence

Time: 3 Hours M.M.: 100

Note: Attempt all questions.

Long answer [20X2=40]

1. What do you understand by 'Hooch Tragedy'? Describe the signs and symptoms, fatal dose and period, postmortem finding and method of sending Viscera and treatment of poisoning by 'Wood Alcohol'.
[20]
2. Discuss the question of Ethical and Medical negligence during the practice of Medical profession. . [20]

Write short notes on

[06x10=60]

6. Section 53 of CrPC.
7. Donation of Cornea.
8. Insulin poisoning
9. Battered baby syndrome.
10. Res ipsa loquitur.
11. Professional death sentence.

Paper 4:Forensic Pathology including Forensic immunology & Recent advances

Time: 3 Hours

M.M.: 100

Note: Attempt all questions.

Long answer

[20X2=40]

1. Discuss the pathology of 'Coronary Heart Disease' and discuss its medicolegal importance in sudden death. [20]
2. Discuss the Forensic application of Immunology. [20]

Write short notes on

[06x10=60]

3. Brain Mapping.
4. Date Rape drugs.
5. Pre-natal Sex determination.
6. Forensic photograph.
7. Evidentiary value of polygraph.
8. Salient features of POCSO Act

MD

Suggested books-

Core books-Name of book & author

1. Modi's Text book of medical Jurisprudence & Toxicology.
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2. The essentials of forensic medicine & toxicology. K.S.N. Reddy.
 3. The textbook of Forensic Medicine. J.B. Mukharjee, Vol. 1 & 2.
 4. Principles of Forensic Medicine. A. Nandy.
 5. A Textbook of Forensic Medicine & Toxicology, Principles & Practice. Krishan Vij
 6. Textbook of Forensic Medicine & Toxicology V.V. Pillay.
 7. Modern Medical Toxicology. V.V. Pillay
 8. Forensic Pathology. Bernard Knight
 9. Handbook of Forensic Pathology. Vincent J.M. Di Maio & Suzzanna E. Dana.

Reference Books

1. Bernard Knight et.al: Cox's Medical Jurisprudence & Toxicology.
 2. Russel S. Fisher & Charles S. Petty: Forensic Pathology.
 3. Keith Simpson's Forensic Medicine.
 4. Jurgen Ludwig, Current methods of autopsy practice.
 5. Camps F.E. Gradwohls- Legal Medicine, Bristol Wright.
 6. Simpson's: A Doctors guide to Court.
 7. Polson C.J.: The essentials of Forensic Medicine.
 8. Adelson L.: The pathology of Homicide.
 9. Atlas of Legal Medicine: Tomio Watanabe.
 10. Spitz W.U., & Fisher R.S. , Medici Legal Investigation of Death.
 11. A. Keith Mant, Taylor's principles & practice of Medical Jurisprudence. Churchill Livingstone.
 12. Justice Hidayatullah & V.R. Manohar , Ratanlal & Dhirajlal : The Indian Penal Code.
 13. Justice Hidayatullah & S.P. Sathe : Ratanlal & Dhirajlal ; The Code of Criminal Procedure code.
 14. Justice Hidayatullah & V.R. Manohar , Ratanlal & Dhirajlal : The Law of Evidence.
 15. H.S. Mehata: Medical Law & Ethics in India.
 16. Code of Medical Ethics, Medical Council of India , approved by Central Govt. U/S 33(m) of IMC Act 1956 (Oct. 1970).
 17. Krogman W.M. : The Human Skeleton in Legal Medicine.
 18. F.E. Camps, J.M. Cameren , David Lanham : Practical Forensic Medicine.
 19. Dr. B.V. Subrahmanyam , Textbook of Forensic Medicine & Toxicology.
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20. The Medical Profession & Law, Dr.R.D.Lele.(IMA , Mumbai Publication).

Journals

1. Journal of Forensic Sciences.
 2. Journal of Legal Medicine (Of American College Medicine.).
 3. Journal of Forensic Science Society.
 4. Medico-legal Journal.
 5. American Journal of Of Law & Medicine.
 6. American Journal of Forensic Medicine.
 7. Forensic Science International.
 8. Journal of Clinical Forensic Medicine.
 9. Medicine Science & Law.
 10. Science & Justice.
 11. Journal of Indian Academy of f Forensic Medicine. Journal of Punjab Academy of Forensic Medicine and Toxicology
 12. Journal of Forensic Medicine & Toxicology, (Medico-legal Society.)
 13. Medico-legal Update, An International Journal.
 14. Journal of Clinical Forensic Medicine. Journal of Forensic and Legal Medicine
- Standard question papers. there are various views regarding setting of question papers.