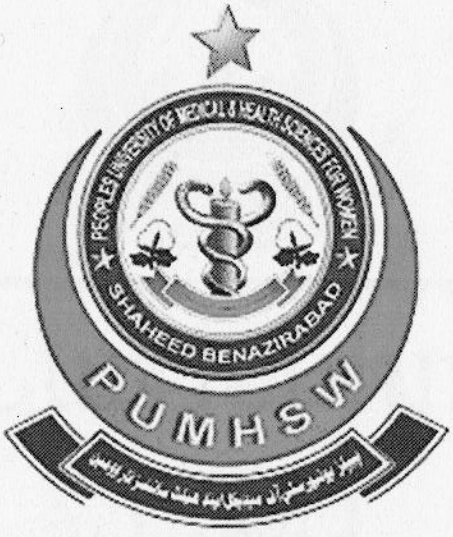
CURRICULUM



DIPLOMA IN MEDICAL JURISPRUDENCE
(D.M.J)
DEPARTMENT OF FORENSIC MEDICINE & TOXICOLOGY

Peoples University of Medical & Health Sciences,
Nawabshah, Sindh.

Peoples University of Medical & Health Sciences for Women, Shaheed Benazirabad

Curriculum

DMJ

REGULATION AND SYLLABUS RELATING

TO

THE DIPLOMA

IN

MEDICAL JURISPRUDENCE

DMJ

PREPARED AND PRESENTED BY

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PEOPLES UNIVERSITY OF MEDICAL & HEALTH SCIENCES

FOR WOMEN NAWABSHAH, SHAHEED BENAZIRABAD.

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I. Introduction:

Medicine and law are sister profession and their close associations parallels the history of mankind. Contrary to popular belief, their interests are not divergent, as both are committed to achieve a common goal in the society, that is service to humanity. Both serve by extending/submitting their acquired knowledge and experience for the administration of justice.

Virtuousness and evil actions in human behavior require careful scrutiny and strict delineation. Society always shows resentment against a wrongdoing of a person especially if such ugly action causes suffering to his fellow beings of becomes a potential danger spoiling the peaceful fabric of the society. Thus society demands timely prevention, careful observation, thorough investigation and punitive action for such eventuality with logical interpretation and correct certification of any injury caused to human body due to the act of commission or delinquency of another person, evolving the whole spectrum of human life from the time of conception till death.

Scientific innovations have revotinalized the life of the mankind. Man is being benefited by the miracles of science in all sphares of his activities and needs. The application of scientific knowledge and its principles in the field of identification and crime detection has been identified, prior to the turn of the 20th century. The knowledge accumulated and new techniques adapted, though basically not meant for the purpose of law, ultimately become the indispensable tools for the elucidation for legal quires and resolution of litigious disputes, investigation of crimes and apprehension of the criminals. The ever spreading knowledge regarding human body, function and behavior has pressed the legal fraternity to seek help of a medical man for the observation and logical interpretation of the medical facts to avert the chance of miscarriage of justice.

Only a medical man with forensic knowledge can bridge the gap of understanding between the medical and legal dictates. If the crime affects the human body, physically or mentally, the role of medical scientist is recognized globally, though ironically it was not realized by our society till yester years.

II. Training Goals/Objectives:

1. Goals:

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

- Is able to provide basic and specialized services in relation with medico-legal responsibilities in the practice of medicine and process of crime investigation.
- Has acquired competency to be teacher, trainer, researcher and leader in the field.

2. Objectives:

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

- 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.
- 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.
- 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.
- Understand the important procedures and applicability of the general principals of analytical toxicology, ballistics, and immunology, occupational and environmental hazards.

III. Manpower Utility:

Keeping in view the existing shortage and demand of medico legalists in the country, the trained personals can easily be absorbed in the health care delivery system. Further they would be able to shoulder and share the responsibilities of prosecution side in judicial proceeding. Trained professional's service can be utilized as.

- Forensic specialist / police surgeons / additional police surgeons at tertiary care establishments / district and tahsil level medico-legal centers.
- Teacher / trainer in public / private sector medical institutions upto the designation of associate professor.

IV. Admission procedure:

IV.1. ELIGIBILITY REQUIREMENTS

(a) Qualification

- MBBS or equivalent medical qualification recognized by the P.M.D.C.
- Valid registration by the P.M.D.C.

(b) Experience

- Two year teaching experience as lecturer in the department of Forensic Medicine in any medical college recognized by P.M.D.C.

OR

- Three years experience as M.O/WMO in RHC/THQ/D.H.Q/Teaching hospital/Casualty department, Police surgeons, Chemical examiner lab/Forensic lab.

OR

- Three years clinical work experience after graduation.

IV.2. ELIGIBILITY REQUIREMENTS

Selection of a candidate is subject to clearance of following tests.

1. **Entrance test:** Multiple choice (single best question). Candidate secreting passing scores on a sliding scale will be allowed to appear in interviews.
2. **Interview:** Interview for aptitude test will be held by a committee appointed by the head of the institution.
3. **Selection Priorities:**
   - Previous sound academic record.
   - Scientific papers Published in Medical Journals/Periodicals recognized by P.M.D.C.
   - Experience as a teacher / M.L.O.

V. Training Drill:

Department of Forensic Medicine (2 Years)

- Intensive Lectures.
- Seminars.
- Conference.
- Journal Club.
- Assessment.

V.1.

- Medico-legal Examination (6 Months).
- Medico-legal Clinic.
- Police Surgeon's Office.
- Civil Surgeon's Office

V.2.

- Radio – Imaging (1 month).

V.3.

- Serology (1 month).

V.4.

- Mortuary (4 months).
- Post-Mortem Laboratory.

V.5.

- Analytical Techniques (2 months).
- Biochemical Laboratory.

V.6.

- Electives (1 month).
- Forensic Science lab/Ballistic Expert.

V.7.

- Odentology (1 month).

V.8.

- Final Examination.

VI. Detail Syllabus:

Theory

D.M.J. Part 1

I. Applied Morbid Anatomy.

General:

1. Surface landmarks and regional Anatomy of Medico-legal significance.
2. Outline of body organs with their relative position in erect and supine posture.
3. Anatomy of Neck with Special reference to violent Asphyxial Death.
4. Anatomy of scalp, skull & its contents (brain & meninges).
5. Anatomy of Heart and coronaries.
6. Anatomy of male & female genitalia with developmental Anomalies.

Osteology

1. Comparative study of Anatomical features of male & female skeleton with reference to skull, pelvis, long bones, mandible, Teeth and sternum.
2. Objective (Mathematical) Methods of gender differentiation from bones.
3. Estimation of skeletal age from bones by study of location and time of appearance of ossification centers, Diphyseco-Epiphyseal union, and metamorphic changes of senility.
4. Determination of racial stock & estimation of stature from bony skeleton.

Embryology

1. Outline of Embroyic/fetal development.
2. Studies of morphological developmental features to determine the fetal age.
3. Concept about Crown-Rump length, Crown-Heal length, body weight and appearance of ossification centers in fetal life.

Odontology

1. Pre & post development of tooth.
2. Gross and sectional Anatomy of tooth.
3. Determination of age from developmental and atrophic changes in teeth.
4. Study of gender & racial characteristics.

II. Applied Physiology

1. Body water and fluid balance.
2. Physiology of menstrual cycle & pregnancy.
3. Physiology of thermoregulation.
4. Blood Sugar Regulation, Diabetic and Hypoglycemic coma.
5. Blood grouping and RH incompatibility.
6. Physiology of Musculo-skeletal system.
7. Physiology of sexual and reproductive system.

III. General Pathology

1. Pathology of cell/tissues, degenerative changes.
2. Secondary changes
   (Atrophy, Hypertrophy, Aplasia, Hyperplasia, Ischaemia, Necrosis, Infection, Cloudy swelling, Amyloidosis, Thrombo-Embolism, Fat-embolism.
3. Body's local and systemic response to trauma.
4. Physio-Pathology of shock.
5. Outline of inflammation: acute and chronic.
6. Carcinogenic agents, Tumors: benign and malignant.
7. Histological/Histochemical determination of age of injury.

IV. Special Pathology

1. Gross and Microscopic changes in Myocardial Infarction, Congenital and Hypertensive Heart diseases, Tuberculosis, Cirrhosis.
2. Chronic industrial diseases with pulmonary manifestations.
3. Anaphylaxis and Hypersensitivity reaction.
4. Microbiology of cadavers with Special reference to CL. Welchii.
5. Trauma and its relationship with Supportive conditions, malignant growths and Stress Phenomenon.

V. Serology

1. Basic concepts of Serology and Immunology.
2. Morphology of Human Blood and its comparative study with common Domestic Animal species.
3. Laws of inheritance of blood group systems.
4. Methods of collection of blood for grouping. Its preservation and dispatch techniques.
5. Blood group systems: A.B.O, RH and others with their determination technique.
6. Constituents of Blood for grouping like Red cell enzymes, Haptoglobins, GM, Gc systems and Hemoglobin.
7. D.N.A Technology and its Forensic Application with Method of collection and preservation of specimen for D.N.A test.
8. Application of blood groups and D.N.A Technique in paternity test.

9. Forensic importance of blood stains and their study under following headings.
    a) Physical
    b) Chemical
    c) Spectroscopic
    d) Microscopic
    e) Biological/Immunological
    f) Group determination technique

10. Group specific substances and their utility.
11. Study of semen and saliva with determination of grouping and ownership
12. Principles and Techniques of various Immuno-Serological test, Precipitin Test and its application to human soluble protein material like blood, semen, bony fragments and tags of tissues. Pregnancy test.

VI. Forensic Medicine

Basic matters relevant to Forensic Medicine / Jurisprudence and Law.

1. Definition, role of Medical man in solving Forensic problems.
2. Historical background and development of the subject of Forensic Medicine.
3. Legal system in Pakistan.
4. Common legal terms/definitions.
5. Courts and their powers. Legal procedure and inquest. Systems of Medico-legal investigation in Pakistan and other Countries. Procedure of recording evidence in Courts Medical evidence, conduct and duties of Doctor towards court and while appearing in witness box. Dictums of Professional secrecy.
6. Importance of documentation in Medical Practice, Various formats of Medical documents.
7. Law, Various types. Statute Laws relevant to Medico-legal practice like Pakistan Penal Code, Criminal Procedure Code, Police rules, Qanoon-e-Shahadat (Evidence Act), Qisas and Diyat ordinance, Zina and Hudood ordinance, Workman's compensation Act, Social Security Act, child marriage restraint Act, Rules regarding admissions, treatment and discharge of mentally ill person to Mental Hospitals and Laws in relation to Drugs.
8. Regulations of Medical profession, Governing body (P.M.&D.C), its constitution and functions. Laws in relation to Medical man.
9. Duties of a Medical man as per Geneva declaration.
10. Privileges and obligations of a registered Medical practitioner.
11. Consent, its types and importance in Medical practice.
12. Medical Negligence.
13. Medical Ethics, their importance and Hippocratic oath.
14. Professional misconduct.
15. Confidentiality in Medical practice.
16. Privileged communications.
17. Ethical issue related to Therapeutic and Human experimentation, Organ Transplatation, Euthanasia, and Obstetrical procedures.

VII. Applied Pharmacology

1. Outline of Mechanism of absorption, distribution, metabolism, Biotransformation and excretion of Exotoxins (poisons) in the Biological systems.
2. Drug interaction and adverse drug reaction.
3. Concept of fatal dose.

VIII. Biochemistry

General:

Systems international (S.I), units and their conversion.

Enzymology:

1. General concepts, classification, Mechanism of action of Enzymes.
2. Role of enzymes in inflammatory conditions and death.
3. Acid Base balance, general consideration, buffer system of plasma, interstitial fluids and cells, Hydrogen Ion Hemostastis, Mechanisms involved in the regulation of normal PH.
4. Water and Electrolyte Balance, general considerations. Body fluid compartments, regulation of body water balance and the electrolytes of body fluids.

Analytical techniques:

Principles of stass-otto process, Colorimetery, Photoelectric Colorimetery, Flame Photometery Atomic Absorption-Spectro-photometery, Chromatography various types, Electrophoresis, ELISA.

Practical work

- Determination of age & sex from bones.
- Serology Laboratory for examination of Biological material for trace evidence.
- Examination of Pathological specimens with reference to forensic aspect
- Court evidence / attendance.

Posting:

The postgraduate student shall rotate through the following department and acquire the relevant knowledge as follows for 04 (four) months

- Anatomy.
- Physiology.
- Biochemistry.
- Pharmacology.
- Pathology.
- Dentistry.
- Radiology.
- Forensic Science Laboratory.

Note: -

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

D.M.J Part II

A. Forensic Sciences:

Introduction, Historical development, scope and importance of various disciplines in Crime detection and personal identity, especially Photography, Photo-fit and Identikit techniques. Dactylography, Poroscopy, Dentistry, Anthropometry, Questioned documents, Criminalistics, Ballastics, Lie detection, D.N.A technique. Forensic Aspects of Radiology, Anesthesiology and Obstetrics.

B. General Forensic Medicine:

1. **Personal Identity:** Importance, problems in living and dead, various objective methods of identification, determination of Race, Sex, Age, by using clinical and objective methods. Specific identification by observation of Moles, Birth arks, Scars, Occupation marks, Body measurements, Footprints, Superimposition Photographic and Para-Nasal Sinuses technique. Evaluation of evidence from examination of skeleton and fragmentary remains.

2. **Trace evidence:** Definition, Classification and types. Locard's Principle of exchange with its application in Criminal cases. Study of scene of Crime. Methods of recovery, collection, preservation and dispatch of Trace evidence to laboratory.

3. **Thanatology:** Definition, concepts about death and their evolution. Diagnosis of death and factors responsible for uncertainty in diagnosing death. Suspended animation, U.K code as diagnostic criterion for death. Mode, Cause, Manner and Mechanism of death. Physical changes in the various body structures after death and their importance. Importance of death certification and notification. International format of death certificate with illustrations and its importance.

   Post Mortem Chemistry of body fluids like Blood. C.S.F and Vitreous Humour, their methods of collection, importance and interpretation of result.

C. Special Forensic Medicine:

1. Autopsy:

Definition, Types, Objectives, Rules and Techniques with procedural details. Autopsy protocol. Negative Autopsy and Post-Mortem artifacts, Requirements of a modern Mortuary with preventive strategy against potential risks and hazards of autopsy. Determination of fatal period & post mortem interval.

Autopsy on Exhumed Bodies, Legal Procedure, Technique and validity.

2. Sudden deaths

Unexpected Sudden Natural deaths, Causes with emphasis on Ischemic Heart diseases, Vasovagal Shock and Thrombo-Embolic Phenomenon.

3. Traumatology

(a) **General aspects:**

Definitions of wound, injury and Hurt. Mechanism of production of wound. Clinical and legal classification of wounds and Hurts. Clinical examination and certification of an injured person, Assessment of disability, methods of determination of Age of wound.

Study of types of wounds According to causative agents. Firearms and ammunition. Types, effects of firearm projectile and other components discharged during firing on human body Proportionate to type of projectile and Muzzle target distance. Study of gun shot residue, study of crime scene in shooting.

(b) **Special Traumatology:**

Wounds and their effect on various body structures and viscera's like Scalp, Skull, Meninges, Brain, Spinal cord, Pelvis, Neck, Chest, Abdomen, Limbs, Bones including Teeth.
Accidents, Industrial, Domestic, Road, Railway and Aviation. Mass disaster, methods of investigation. Explosions.
Torture, pattern and effects, Custodial deaths.
Presumption of death and survivor ship, complications and causes of death following wounds.
Distinction between wounds caused by using Criminal force, Self-infliction and Accidents.
Distinction between Suicidal, Homicidal & Accidental Traumatic lesion.
Distinction between wounds caused during life and after death.

Deaths in police custody.

Thermal injuries, burns, Electrocution, lighting, starvation, hypothermia & their medico-legal aspects. Explosions & its medico-legal importance.

4. Violent asphyxial deaths.

Introduction, Specific and non-specific signs of asphyxia, Suffocation (Smothering, Gagging) Hanging, Strangulation (Ligature, throttling), Choking, Traumatic asphyxia Hog tie , Drowning & there medico-legal importance,

5. Forensic Gynae: / Obs:

Virginity, Pregnancy, Abortion, Delivery, Infanticide (Battered baby syndrome, cot death), Violence against women & its medico-legal importance.

6. Sexual offences:

- **Natural sexual offences:** Rape, Zina, Incest, Adultery
- **Unnatural sexual offences:** Sodomy, Bestiality, Tribadism, buccol coitus.
- **Sexual perversions:**

7. **Forensic Psychiatry:**

Classification of mental disorders & abnormal human behavior, medica-legal aspects of substance use, Feigned insanity, juvenile delinquency.

8. Importance, sterility, sterilization & Artificial insemination

9. General Toxicology

- Basic concepts about poisons, Science of poisons its sub disciplines.
- Factors that influence Toxicology in Biological system.
- Various methods of classification of poisons.
- General principles of Diagnosis, removal, management of a case of poisoning.
- Additional therapy. – Non specific Antidotes.
- Identification, methods of collection, preservation of Biological material for Chemical Analysis with maintenance of chain of custody.
- Duties of Doctor in case of poison.

10. Special Toxicology:

- Corrosives.
- Irritants.
- Neurotics.
- Asphyxiants.
- Cardiacs.
- Insecticides.
- Miscellaneous.
- Industrial poisons.
- Radio-active substances.
- Garden poisons.

Practical: -

1. Exhumations (legal requirements, procedure, autopsy, opinion)
2. Autopsy (Legal requirements, procedure, examination of dead body, opinion)
3. Examination of injured person
4. Examination of victim & assailant in sexual offences
5. Examination of intoxicated person.

Posting:

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

- Casualty.
- Mortuary
- Museum.
- Radiology department.
- Gynae / Obs: department.

VII. Skills Learning:

At the end of course, the candidate is able to:

- Identify, describe and note marks of identification of an examinee.
- Record Dying Declaration.
- Perform Clinical examination and reports regarding:
    - Exhumations (legal requirements, procedure, autopsy, opinion).
    - Autopsy (Legal requirements, procedure, examination of dead body, opinion).
    - Examination of injured person.
    - Examination of victim & assailant in sexual offences.
    - Examination of intoxicated person.
    - Determination of age.
    - Potency, sterility.

- Prepare Blood film for Microscopy.
- Prepare and stain a Slide of Semen for Microscopy.
- Perform Diatom test.
- Perform Gastric Lavage.
- Perform Endotracheal tube.

VIII. Teaching Program:

Teaching Program

General Principles

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

Teaching Sessions

In addition to undergraduate teaching by postgraduate students, there are daily sessions of formal teaching. Each DMJ student has to present Seminars, perform medico-legal autopsies, and prepare medico-legal reports.

The postgraduate student shall be required to actively participate in the Teaching / Training programs 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 audio-visual aids in the same. Candidates must actively participate in Postmortem Examination, Clinical Medico- legal cases, Laboratory work, Clinico-pathological Conferences, Seminars, Group Discussions, Visit to Scene of crime, Court Evidence. The facilities offered by other Clinical & Basic Science Departments are made available to them.

Teaching Schedule

The suggested departmental teaching schedule is as follows:

1. Seminar	Once a week
2. Theory test	Once a month
3. Grand viva	Once a month

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

IX. Examinations

- Ratio of marks in theory and practical will be equal
- The pass percentage will be 60% (minimum 50% in each paper (I BCQs) & (II SEQs)
- Candidate will have to pass theory and practical examination separately.

TABLE OF SPECIFICATION

DMJ Part – I, EXAMINATION

Theory Papers Contain:

- **Paper – I, SBQs** (Single Best Questions) 75 Questions

Sr. #	Subject	Qs %
i.	Applied Morbid Anatomy	15 %
ii.	Applied Pharmacology	05 %
iii.	General Pathology	10 %
iv.	Special Pathology	05 %
v.	Forensic Medicine	45 %
vi.	Forensic Serology	10 %
vii.	Applied Pharmacology	05 %
viii.	Biochemistry	05 %

- **Paper – II, SEQs** (Short Essay Questions) 10 Questions

Sr. #	Subject	Qs %
i.	Applied Anatomy	10 %
ii.	General Pathology	10 %
iii.	Pathology	10 %
iv.	Forensic Medicine	40 %
v.	Forensic Serology	10 %
vi.	Applied Pharmacology	10 %
vii.	Biochemistry	10 %

- **Examination: DMJ - I**
- **Theory.**

Title	Marks
Paper 1: BCQs (75 in number)	100
Paper 2: SEQs (10 in number)	100

- **Practical**

Title	Marks
Grand Viva	160
Spotting:- (Bones, Slides, Stains on clothes) (05 marks on each spot)	40
Total:	200

Table of Specification (BCQs) for D.M.J – II

S. No:	Topics	Number & (%)
01	Forensic Sciences	02 (2%)
02	Personal Identity	08 (8%)
03	Thanatology	10 (10%)
04	Medico-legal Autopsy	10 (10%)
05	Sudden Deaths	02 (2%)
06	Traumatology	25 (25%)
07	Violent asphyxial deaths	15 (15%)
08	Forensic Gynae / Obs:	08 (8%)
09	Sexual Offences	04 (4%)
10	Special Toxicology.	
	• Corrosives	03 (3%)
	• Irritants	04 (4%)
	• Neurotics	04 (4%)
	• Asphyxiants	02 (2%)
	• Cardiacs	01 (1%)
	• Miscellaneous	02 (2%)
		100 (100%)

Table of Specification (SEQs) for D.M.J – II

S. No:	Topics	Number & (%)
01	Personal Identity	01 (10%)
02	Thanatology	01 (10%)
03	Medico-legal Autopsy	01 (10%)
04	Traumatology	02 (20%)
05	Violent asphyxial deaths	01 (10%)
06	Forensic Gynae / Obs:	01 (10%)
07	Sexual Offences	01 (10%)
08	Special Toxicology	02 (20%)
		10 (100%)

- **Examination: DMJ – II**
- **Theory**

Title	Marks
Paper 1: BCQs (75 in number)	100
Paper 2: SEQs (10 in number)	100

A. Practical

Title	Marks
Grand Viva	160
Spots (Poisons, Bones, Slides, X-ray films) (05 marks on each spot)	40
Total:	200

X. Recommended Books:

Core books

- Textbook of Forensic Medicine & Toxicology, Principles & Practice Kirshan VIJ.
- Forensic Pathology Bernard Knight.
- Textbook of Medical Jurisprudence and Toxicology C.K Parikh.

Reference Books

• The pathology of Trauma.	J.K Mason
• Taylor's Principles & Practice of Medical Jurisprudence.	A.Keith Mant
• Forensic Pathology.	Vincent J Di Maio
• Principles & Practice of Forensic Medicine.	Gordon & Shaperio
• Forensic Medicine.	Keith Simpson
• The Essentials of Forensic Medicine.	Polson C.J
• Human Anatomy Text book	Koragman

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