



**YENEPOYA**

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade

## **YENEPOYA MEDICAL COLLEGE**

**PROGRAM AND PROGRAM SPECIFIC/COURSE OUTCOMES**

**POSTGRADUATE PROGRAM**

**MD PATHOLOGY**

**ATTESTED**

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**PROGRAM OUTCOMES**  
**POSTGRADUATE PROGRAM**  
**MD PATHOLOGY**

The learning objectives in the cognitive, psychomotor and affective domains are:

**A. Cognitive Domain**

- PO1 Diagnose routine and complex clinical problems on the basis of histopathology (surgical pathology) and cytopathology specimens, blood and bone marrow examination and various tests of Laboratory Medicine (clinical pathology, clinical biochemistry) as well as Blood Banking (Transfusion Medicine).
- PO2 Interpret and correlate clinical and laboratory data so that clinical manifestations of diseases can be explained.
- PO3 Advise on the appropriate specimens and tests necessary to arrive at a diagnosis in a problematic case.
- PO4 Correlate clinical and laboratory findings with pathology findings at autopsy, identify miscorrelations and the causes of death due to diseases (apart from purely metabolic causes).
- PO5 Should be able to teach Pathology to undergraduates, postgraduates, nurses and paramedical staff including laboratory personnel.
- PO6 Plan, execute, analyse and present research work.
- PO7 Make and record observations systematically and maintain accurate records of tests and their results for reasonable periods of time. Identify problems in the laboratory, offer solutions thereof and maintain a high order of quality control.
- PO8 Capable of safe and effective disposal of laboratory waste.
- PO9 Able to supervise and work with subordinates and colleagues in a laboratory.

**B. Affective Domain**

1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

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### C. Psychomotor Domain

1. Able to perform routine tests in a Pathology Laboratory including grossing of specimens, processing, cutting of paraffin and frozen sections, making smears, and staining.
2. Able to collect specimens by routinely performing non-invasive out-patient procedures such as venipuncture, finger-prick, fine needle aspiration of superficial lumps and bone-marrow aspirates, and provide appropriate help to colleagues performing an invasive procedure such as a biopsy or an imaging guided biopsy.
3. Perform an autopsy, dissect various organ complexes and display the gross findings.
4. Should be familiar with the function, handling and routine care of equipments in the laboratory.

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## PROGRAM SPECIFIC/COURSE OUTCOME

### POSTGRADUATE PROGRAM MD PATHOLOGY

#### A. Cognitive domain

A post graduate student upon successfully qualifying in the MD (Pathology) examination should have acquired the following broad theoretical competencies and should be:

1. Capable of offering a high quality diagnostic opinion in a given clinical situation with an appropriate and relevant sample of tissue, blood, body fluid, etc. for the purpose of diagnosis and overall wellbeing of the ill.
2. Able to teach and share his knowledge and competence with others. The student should be imparted training in teaching methods in the subject which may enable the student to take up teaching assignments in Medical Colleges/Institutes.
3. Capable of pursuing clinical and laboratory based research. He/she should be introduced to basic research methodology so that he/she can conduct fundamental and applied research.

#### B. Affective domain

1. The student will show integrity, accountability, respect, compassion and dedicated patient care. The student will demonstrate a commitment to excellence and continuous professional development.
2. The student should demonstrate a commitment to ethical principles relating to providing patient care, confidentiality of patient information and informed consent.
3. The student should show sensitivity and responsiveness to patients' culture, age, gender and disabilities.

#### C. Psychomotor domain:

At the end of the course, the student should have acquired skills, as described below:

##### Surgical pathology Skills

- Given the clinical and operative data, the student should be able to identify, and systematically and accurately describe the chief gross anatomic alterations in the

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surgically removed specimens and be able to correctly diagnose at least 80% of the lesions received on an average day from the surgical service of an average teaching hospital.

- A student should be able to demonstrate ability to perform a systematic gross examination of the tissues including the taking of appropriate tissue sections and in special cases as in intestinal mucosal biopsies, muscle biopsies and nerve biopsies, demonstrate the orientation of tissues in paraffin blocks.
- The student should be able to identify and systematically and accurately describe the chief histo-morphological alterations in the tissue received in the surgical pathology service. He/she should also correctly interpret and correlate with the clinical data to diagnose at least 90% of the routine surgical material received on an average day.
- Be conversant with automatic tissue processing machine and the principles of its running.
- Process a tissue, make a paraffin block and cut sections of good quality on a rotary microtome.
- Stain paraffin sections with at least the following:
  - (i) Haematoxylin and eosin
  - (ii) Stains for collagen, elastic fibers and reticulin
  - (iii) Iron stain
  - (iv) PAS stain
  - (v) Acid fast stains
  - (vi) Any other stains needed for diagnosis.
- Demonstrate understanding of the principles of:
  - (i) Fixation of tissues
  - (ii) Processing of tissues for section cutting
  - (iii) Section cutting and maintenance of related equipment
  - (iv) Differential (special) stains and their utility
- Cut a frozen section using cryostat, stain and interpret the slide in correlation with the clinical data provided.
- Demonstrate the understanding of the utility of various immuno-histochemical stains especially in the diagnosis of tumour subtypes.

 ATTESTED