M.D. IN Pathology
CURRICULUM FOR POST GRADUATE COURSE IN PATHOLOGY

M.D. IN PATHOLOGY

GOAL :

The goal of postgraduate medical education shall be to produce competent specialist.

(i) Who shall recognize the health needs of the community and carry out professional obligation ethically and in keeping with the objectives of the national health policy;

(ii) Who shall have mastered most of the competencies, retaining to the speciality, that are required to be practiced at the secondary and tertiary levels of the healthcare delivery system.

(iii) Who shall be aware of contemporary advances and developments in the discipline concerned.

(iv) Who shall have acquired a spirit of scientific inquiry and oriented to the principles of research methodology and epidemiology ;and

(v) Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

OBJECTIVES :

At the end of the course a candidate must be able to

(i) Understand and explain about the factors in causation of disease.

(ii) Understand processes involved in the gross and microscopic changes of organs and tissues and explain these changes.

(iii) Understand and explain the basis of evolution of clinical signs and symptoms.

(iv) Should be able to perform procedures designated for laboratory detection of diseases. Should be able to process and accurately interpret the representative materials obtained from the patients in order to arrive at a correct diagnosis.

(v) Should be able to recognize and report morphological changes in cells, tissues and organs.

(vi) Should be able to plan, perform and report specific research projects.

(vii) Should be able to perform clinical autopsy and present CPC (Clinico Pathological Correlation)
METHODS OF TRAINING

Duration of course – 3 years.

1. On job training
   - Histopathology including techniques and reporting
   - Cytology including FNAC, fluid cytology, exfoliative cytology - techniques and reporting
   - Haematology including blood banking and transfusion medicine - techniques and reporting
   - Clinical pathology - techniques and reporting
   - Museum techniques
   - Autopsy techniques and interpretation
   - Serology - techniques and reporting
   - Handling of hazardous material
   - Handling, maintenance and calibration of instruments used in laboratory
   - Undergraduate teaching

2. P.G. Teaching sessions
   - Journal review
   - Subject seminar
   - Grossing discussions for autopsies and surgical material
   - Slide seminar including histopathology, haematology, and cytopathology
   - Clinical case - group discussion
   - Interdepartmental seminars

Post graduate students should be encouraged to attend CME, Workshops, Conferences & present papers.

TEACHING / LEARNING CONTENT

A. THEORY

I  BASIC SCIENCES

1. Anatomy/histology of all structures in human body/organs
2. Physiology and biochemistry - Basic aspects of various metabolism and functioning of endocrines
3. Genetics - Fundamental / applied aspects
4. Biostatistics
5. Biomedical ethics - ethical issues related to Medical practice and research

II  PATHOLOGY

1. Historical aspects
2. General pathology
3. Systemic pathology
4. Haematology
5. Blood banking and Transfusion Medicine
6. Cytopathology
7. Clinical Pathology
8. Medical autopsy: Techniques and interpretation
9. Recent advances in all fields, related to Pathology
10. Organization of laboratory including quality control
III CLINICAL BIOCHEMISTRY

Routine biochemical investigations and various organ function tests i.e. LFT, RFT etc.

B. PRACTICAL

Proficiency of technological methods should include the following:
1. Fields in which high degree of professional competence and theoretical knowledge is expected:
   a) Gross pathology and histopathology
   b) Haematology
   c) Cytopathology
   d) Clinical pathology and Blood banking

2. Fields in which student is expected to achieve reasonable working knowledge and skills to be able to run laboratory services independently
   a) Clinical chemistry
   b) Serology

3. Fields in which student is expected to achieve general acquaintance of techniques to understand and interpret data
   a) Immunopathology
   b) Histochemistry
   c) Immunohistochemistry
   d) Cytogenetics
   e) Molecular biology
   f) Medical statistics

POSTING SCHEDULE:

1) Histopathology and Autopsy : - 15 months
2) Clinical pathology
   Haematology : - 15 months
   Cytopathology
   Blood Bank
3) Biochemistry : - 1 month
4) Serology : - 15 days
5) Museum : - 15 days
6) Revision in all sections : - 4 months

TOTAL 36 months

RECOMMENDED MINIMUM TEXT BOOKS AND JOURNALS
**BOOKS:**

5. Juan Rosai, Ackerman’s Surgical Pathology, published by C.V. Mosby Company.
22. Elder D.E, Lever’s Histopathology of the skin – Published by J.B. Lippincott Company.
25. Recent advances in Histopathology, Haematology, Blood coagulation etc.
27. Interpretation of Breast Biopsies - Carter
30. Epstein Prostate Biopsy Interpretation, published by Lippincott- Raven
32. Foster C.R, Pathology of the Urinary Bladder, published by Saunders
33. Fox H, Wells M, Haines & Taylor - Obstetric and Gynaecological Pathology, published by Churchill Livingstone
34. Ioachim H.L, Lymphnode Pathology, published by Lippincott
35. Kilpatrick, Renner, Diagnostic Musculoskeletal Surgical Pathology, Clinicoradiologic & cytologic correlations, published by Saunders
36. Kurman R.J, Blaustein’s pathology of the female genital tract, published by Springer
38. MacSween, Butt, Portman et al, Pathology of the liver- published by Churchill
Livingstone
   Lippincott Williams and Wilkins
   by Lippincott Williams and Wilkins
41. Odze R.D, Surgical pathology of the GI Tract, Liver, Biliary Tract and Pancreas,
   published by Saunders
42. Owen D, Pathology of the Gall Bladder, Biliary Tract, and Pancreas, published by
   Saunders
43. Pilch B.Z, Head and Neck surgical pathology, published
   by Lippincott Williams and Wilkins
44. Rosen P, Pathology of Breast, published by Lippincott Williams and Wilkins
46. Weedon, Skin Pathology, published by Churchill Livingstone
47. Wickremasinghe, Blood and Bone marrow pathology, published by Churchill Livingstone
49. Cibas E.S, Cytology: Diagnostic principles and clinical correlates, published by Saunders
50. Geiinger, Modern cytopathology
53. Miettinen M, Diagnostic soft tissue pathology, published by Churchill Livingstone
55. Collins R.D, Paediatric Haematopathology, published by Churchill Livingstone
56. Hoffman, Benz, Shattil, Haematology: Basic principles and practice, published by
   Churchill Livingstone
59. WHO Classification of tumours, published by IARC Press.
60. Mollison P.L, Blood transfusion in clinical medicine, published by Oxford, ELBS &
   Blackwell Scientific Publication
61. Chitale A, Pathology of urinary & male genital system for urologists, general surgeons &
   Pathologists published by B.I. Publications
JOURNALS:
3. Journal of Clinical Pathology, published by B.M.J.
5. American Journal of Surgical Pathology, published by Lippincott & Raven
6. Indian Journal of Pathology & Microbiology, published by IAPM.
8. Indian Journal of Cytology, published by IAC.
9. LANCET published by Elsevier
11. Histopathology, journal of the British Division of the International Academy of Pathology-Published by Blackwell Science
13. Archives of Pathology and Laboratory Medicine-Published by American Medical Association
14. Human Pathology- Published by W.B. Saunders & Company.
15. American Journal of Clinical Pathology published by ASCP
16. Indian Journal of Cytology
17. WHO Bulletin published by WHO
18. Indian Journal of Urology
19. Modern Pathology
20. Indian journal of Leprosy published by Indian Leprosy Association

ADDITIONAL READINGS:

3. ICMR, Policy, Statement of ethical considerations involved in research on Human subjects, 1982 ICMR, New Delhi.
4. Code of Medical Ethics framed under Section- 33 of Indian Medical Council Act, 1956. MCI, Kotla road, New Delhi.
5. Santosh Kumar, The elements of Research, writing and editing 1994, Dept. of Urology, JIPMER, Pondicherry.
8. Indian National Science Academy, Guidelines for care and use of animals in scientific research, New Delhi, 1994.
ABOUT THE LOG BOOK:

The log book has been prepared to maintain a record of academic and service activities of postgraduates and to provide an account of progress made by him/her. Maintenance of such log books will also allow a review of training programme and incorporation of improvements in the programme.

Postgraduates are required to carry the log book and get the entries made regularly. Faculty is requested to countersign. Log books have to be submitted to the head of the department before submitting the final examination form.
PERSONAL BIO-DATA

Name of the Student: ____________________________

Date of joining: _______________________________

Probable date of appearing for Examination: _______________________________

Date of Birth: ________________________________

M.B.B.S from: ________________________________

Year of passing MBBS: __________________________

Name of the State Medical Council: __________________________

Registration No. with date: _______________________________

Permanent Address: _______________________________

PIN-___________________________

Phone No.: (_______) ___________________________

Local Guardian’s Address: _______________________________

PIN _____________________________

Phone No.: (_______) ___________________________

_______________________________
<table>
<thead>
<tr>
<th>SECTION</th>
<th>MONTH &amp; YEAR</th>
<th>REMARKS</th>
<th>SIGNATURE OF SECTION I/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Pathology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cytopathology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haematology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Banking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Histopathology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autopsy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biochemistry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Museum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revision in all sections</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# ATTENDANCE AT P.G. TEACHING SESSIONS:

<table>
<thead>
<tr>
<th>Month &amp; Year</th>
<th>No. of Teaching Programmes held</th>
<th>No. of Teaching Programmes attended</th>
<th>Remarks</th>
<th>Signature of P.G. Teaching I/C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PARTICIPATION IN P.G. TEACHING ACTIVITY

Subject Seminars presented:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Remarks</th>
<th>Signature of faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Journal Articles presented:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Remarks</th>
<th>Signature of faculty</th>
</tr>
</thead>
</table>
Group discussion of clinical cases:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Remarks</th>
<th>Signature of faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Slide Seminars presented/participated:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Remarks</th>
<th>Signature of faculty</th>
</tr>
</thead>
</table>
**SCIENTIFIC CONTRIBUTIONS**

CME/ Workshops attended:

<table>
<thead>
<tr>
<th>SN</th>
<th>Name of CME/ Workshop</th>
<th>Held at</th>
<th>Dates</th>
</tr>
</thead>
</table>

Conferences attended:

<table>
<thead>
<tr>
<th>SN</th>
<th>Name of Conference</th>
<th>Paper presented Yes/No</th>
<th>If yes, title of paper</th>
</tr>
</thead>
</table>

Publications:
1. 
2. 

Awards:
CERTIFICATE

This is to certify that Dr……………………………………………………………….

has completed the tenure for M.D. satisfactorily .

P.G.Teacher.                    P.G.Teaching                                Professor & Head.
Programme Incharge                  Department of pathology

Department of pathology
EVALUATION SYSTEM

A. DISSERTATION

a) Thesis / Dissertation is compulsory. Every candidate is required to carry out the work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such work shall be submitted in the form of a Dissertation.

b) The Dissertation is aimed at training the candidate in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of relevant literature, getting acquaintance with recent advances, designing of research study, collection of data, critical analysis of results and drawing conclusions.

c) The title of the topic along with the plan of work not exceeding 500 words in prescribed proforma should be submitted to the University with the recommendation of guide through proper channel within a period of 3 months from the date of registration for the postgraduate course. There should not be an overlap of topic, cases, material or the related data among the candidates within the department during the period of actual Dissertation work. Prior approval by the local Ethical Committee is essential.

Unless communicated otherwise within a period of 2 months from the date of receipt of plan of work by University, it shall be assumed that topic of Dissertation is approved and no communication is necessary in this regard. The last date for submission will not be extended without prior permission from the University. In case of delay in submission of topic of Dissertation and plan of work, the period of training of the candidate will be proportionately extended for which the entire responsibility shall be upon the candidate.

d) The volume of the Dissertation should be reasonable and may vary depending on the topic. The bibliography should be as per Vancouver system.

e) Four copies of the Dissertation complete in all respect certified by the guide should be submitted to the University through proper channel 6 months before the final examinations to the registrar (evaluation).

f) The identity of the candidate/ teacher/ Department /College / Place should not be disclosed in the Dissertation. Acknowledgement should not be included in the Dissertation.

g) Certificates issued by guide, countersigned by Head of the Department and the Dean certifying therein that the work done by the candidate has been carried out under the supervision of the guide to his/her entire satisfaction, should be submitted separately to the University.
h) Dissertation approval is a prerequisite for appearing at the University exam. In case the Dissertation is not accepted, the same shall be communicated to the candidate along with reasons for rejection at least 2 months prior to the commencement of theory exam.
i) The candidate may make necessary corrections and resubmit the Dissertation at least 1 month prior to the commencement of theory exam.

B. LOG BOOK (Work diary)

The postgraduate students should include all their activities in the log book. The annual assessment based on the work diary shall be done by the guide, teacher in charge of postgraduate teaching programme and HOD.

C. UNIVERSITY EXAMINATION (As per Direction No. 01/2008 dtd. 26/05/2008)