STUDY GUIDE

STUDYGUIDE FCPS HISTOPATHOLOGY

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INTRODUCTION TO THE STUDY GUIDE

This study guide has been developed to support postgraduate trainees enrolled in the FCPS Histopathology training program. It is structured in alignment with the curriculum outlined by the College of Physicians and Surgeons Pakistan (CPSP) and is intended to facilitate systematic, competency-based learning throughout the training period. FCPS Histopathology is a dynamic discipline that aims to develop diagnostic expertise in histopathology with emphasis on morphology IHC and clinic-pathological correlation. The training program is designed to equip residents with the knowledge, skills, and professional attitudes required for accurate interpretation of histopathological investigations, effective clinical–laboratory correlation, and delivery of high-quality patient care. This guide provides an organized framework of major content areas, including gross specimens evolution of frozen sections, IHC, Biopsy/Cytology reporting and recent advances in the field. Emphasis is placed on the development of higher-order diagnostic skills in diagnosing routine and complex cases, which are essential for success in Intermediate Module (IMM) and FCPS Part-II examinations. It also encourages self-directed learning and active participation in academic activities such as case based discussions, journal clubs, and tutorials. This study guide serves as a roadmap for trainees to ensure comprehensive coverage of the curriculum within the defined training period while fostering a culture of continuous learning, critical thinking, and excellence in Histopathology practice.

COLLEGE OF PHYSICIANS AND SURGEONS PAKISTAN (CPSP)

Vision

Excellence in postgraduate medical education and training, ensuring top-tier medical care, and enhancing the quality of healthcare professionals.

Mission

To establish and maintain the highest standards of postgraduate medical practice through robust training, continuous professional development, research, and international collaboration.

SAHIWAL MEDICAL COLLEGE, SAHIWAL

Vision

Sahiwal Medical College will be a state-of-the-art teaching institute and center of excellence in the medical sciences. Keeping in view the values of Islam and traditions of Pakistani culture, character building and professional training of students and professionals will be at par with international standards. Serving humanity at large, by applying the best possible practices will able the aspiration of the institution.

Mission

Sahiwal Medical College is committed to serve the ailing population of Sahiwal Division and adjoining areas by producing clinically competent medical graduates of International Standards, raising service delivery through best possible attainable bench marks in medical education, indigenous research culture and excellence in hospital care. The institution aims to inculcate leadership role in its graduates and staff. All endeavors are meant to provide a positive and meaningful influence on the public.

PROGRAM OBJECTIVES

At the end of training, trainees will demonstrate expertise in diagnostic histopathology, including interpretation of routine and complex cases, application of WHO classifications, use of IHC and molecular tools, and contribution to multidisciplinary patient care.

1. Knowledge Objectives

The trainee should be able to:

- Understand normal histology and correlate it with pathological changes
- Describe the pathogenesis, morphology, and classification of diseases
- Apply principles of general pathology (inflammation, neoplasia, degeneration, etc.)
- Interpret systemic pathology across all organ systems
- Understand basics of immunohistochemistry (IHC), molecular pathology, and cytogenetics
- Know indications and interpretation of ancillary techniques (special stains, IHC markers, molecular tests)

2. Diagnostic Skills

The trainee should:

- Accurately examine and report histopathology specimens
- Perform gross examination (grossing) with proper sampling
- Interpret microscopic findings and formulate differential diagnoses
- Integrate clinical, radiological, and laboratory data for final diagnosis
- Report common and complex cases independently by end of training
- Recognize urgent/critical diagnoses and communicate timely

3. Technical Competence

The trainee should:

- Perform and supervise:
  - Tissue processing and embedding
  - Microtomy and staining (H&E, special stains)
- Understand quality control in histopathology lab
- Use and interpret IHC panels appropriately
- Have basic exposure to molecular techniques (PCR, FISH, etc.)

4. Cytopathology Skills

- Perform and interpret FNAC (Fine Needle Aspiration Cytology)
- Screen and report cytology slides (gynecological & non-gynecological)
- Correlate cytology with histopathology

5. Research & Academic Development

- Develop skills in:
  - Literature search and critical appraisal
  - Research methodology and biostatistics
  - Complete and submit CPSP synopsis and dissertation
  - Participate in:
  - Journal clubs
  - Case presentations
  - Academic discussions

6. Professionalism & Ethics

- Follow ethical principles and patient confidentiality
- Maintain professional behavior with clinicians and colleagues
- Understand medico-legal responsibilities in pathology reporting
- Demonstrate accountability and integrity

7. Communication Skills

- Write clear, structured, and clinically relevant reports
- Communicate effectively with clinicians for case discussion
- Present cases confidently in MDT meetings and academic forums

8. Management & Leadership

- Understand laboratory management:
- Workflow organization
- Quality assurance
- Lab safety protocols

- Supervise junior staff and technicians
- Manage workload efficiently

9. Continuous Professional Development

- Keep updated with advances in:
- Diagnostic pathology
- WHO classifications
- Molecular diagnostics
- Develop habit of lifelong learning

ROLE AND RESPONSIBILITIES OF RESIDENT

1. Diagnostic Responsibilities

- Perform gross examination (grossing) of surgical specimens with proper description and sampling
- Examine microscopic slides and formulate differential diagnoses
- Prepare accurate, structured histopathology reports under supervision
- Correlate histological findings with clinical and radiological data
- Identify and promptly communicate critical or urgent diagnoses

2. Cytopathology Duties

- Perform Fine Needle Aspiration Cytology (FNAC) under supervision
- Prepare, stain, and screen cytology smears
- Report gynecological (Pap smears) and non-gynecological cytology
- Correlate cytology with histopathology for diagnostic accuracy

3. Laboratory & Technical Responsibilities

- Ensure proper handling, fixation, and labeling of specimens
- Supervise:
- Tissue processing and embedding
- Microtomy and slide preparation
- Routine H&E staining and special stains
- Assist in selection and interpretation of Immunohistochemistry (IHC) markers
- Maintain quality control and assurance in lab procedures

4. Academic Responsibilities

- Attend and actively participate in:
- Journal clubs
- Case discussions
- Slide sessions
- Mortality & morbidity meetings
- Prepare and deliver presentations on assigned topics
- Keep updated with WHO classifications and recent advances

5. Research Responsibilities

- Develop and submit CPSP synopsis
- Conduct research and complete dissertation/thesis
- Perform literature review and apply evidence-based practice
- Present research in conferences

6. Communication Responsibilities

- Write clear, concise, and clinically relevant reports
- Communicate effectively with clinicians regarding:
- Diagnostic dilemmas
- Urgent findings
- Participate in multidisciplinary team (MDT) meetings

7. Professionalism & Ethics

- Maintain patient confidentiality at all times
- Follow ethical guidelines in reporting and research
- Demonstrate professional attitude and teamwork
- Respect hierarchy and institutional protocols

8. Administrative & Management Duties

- Maintain proper record keeping and documentation
- Assist in workload distribution in the lab
- Ensure timely reporting of cases
- Help in inventory management (reagents, stains, consumables)

9. Teaching Responsibilities

- Teach and guide:
- Junior residents
- Medical students
- Laboratory staff (basic concepts)
- Participate in departmental teaching activities

10. On-call / Duty Responsibilities

- Handle emergency specimens and urgent biopsies
- Ensure rapid processing/reporting when required
- Communicate critical results immediately

CURRICULUM:AIMS AND OBJECTIVES

1. Aims of Training

- Independently diagnose diseases through histopathology and cytopathology
- Provide accurate and timely diagnostic reports for patient management
- Integrate clinical, radiological, and laboratory data for holistic diagnosis
- Develop expertise in surgical pathology, cytology, and autopsy pathology
- Apply modern diagnostic tools including immunohistochemistry and molecular pathology
- Contribute to research, teaching, and quality assurance in pathology services
- Uphold ethical, professional, and medico-legal standards in practice

2. General Objectives

- Perform gross examination of surgical specimens with appropriate sampling
- Interpret histological and cytological slides accurately
- Issue complete and structured histopathology reports independently
- Recognize normal histology and pathological alterations across organ systems
- Understand disease mechanisms including inflammation, neoplasia, degeneration, and infections
- Correlate pathology findings with clinical presentation
- Use ancillary techniques such as:
- Special stains
- Immunohistochemistry
- Molecular diagnostic methods

3. Specific Objectives

A. Diagnostic Competence

- Diagnose common and complex surgical pathology cases
- Identify benign and malignant lesions with grading and staging principles
- Recognize urgent and critical diagnoses requiring immediate communication

B. Cytopathology Skills

- Perform and interpret Fine Needle Aspiration Cytology
- Report gynecological and non-gynecological cytology specimens
- Correlate cytology with histopathological findings

C. Laboratory Skills

- Understand and supervise:
- Tissue processing
- Microtomy
- Routine and special staining
- Ensure quality control and quality assurance in histopathology lab
- Assist in interpretation of Immunohistochemistry panels

D. Autopsy Pathology

- Perform or assist in medico-legal and clinical autopsies
- Correlate post-mortem findings with clinical diagnosis
- Document findings in structured autopsy reports

E. Academic and Research Objectives

- Participate in journal clubs, seminars, and slide discussions
- Conduct research and complete CPSP synopsis and dissertation
- Critically appraise medical literature
- Present scientific work in academic forums

F. Communication Skills

- Prepare clear and concise diagnostic reports
- Communicate effectively with clinicians regarding diagnostic issues
- Participate in MDT (Multidisciplinary Team) meetings

G. Professionalism and Ethics

- Maintain patient confidentiality and ethical standards
- Demonstrate professional behavior in workplace
- Follow medico-legal guidelines in reporting

H. Teaching and Leadership

- Teach junior trainees and medical students
- Participate in departmental academic activities
- Develop leadership skills in laboratory management

I. Continuous Professional Development

- Stay updated with:
- WHO tumor classifications
- Advances in molecular pathology
- New diagnostic techniques
- Prepare for FCPS examinations (IMM & Part II)

STRUCTURE OF 4 YEAR TRAINING IN HISTOPATHOLOGY

TOTAL DURATION OF TRAINING :4 YEARS

- Imm training: 2 years (including rotational training)
- Training in other disciplines: Chemical pathology, Haematology, Microbiology, Blood banking, Virology, Immunology,

ONE YEAR ROTATIONAL TRAINING

One year for rotational training in all branches of Pathology is reserved as under:

Specialty	Duration in weeks
Histopathology	10 weeks
Chemical Pathology	10 weeks
Haematology	10 weeks
Microbiology	10 weeks
Blood Banking	06 weeks
Virology	03 weeks
Immunology	03 weeks
Total	**52 weeks**

ILLUSTRATIVE TIME TABLE OF HISTOPATHOLOGY TRAINING

Month / year	1	2	3	4	5	6	7	8	9	10	11	12
1				Rotation 1				Rotation 2				Assessment
2	Rotation 3				Work shop	Work shop	Work shop	Work shop	Work shop			IMM
3			Clinical Rotation					Clinical Rotation				Assessment
4	Dissertation submission											Assessment

TEACHING & LEARNING STRATEGIES

1. Workplace-Based Learning (Core Strategy)

Methods include:

- Daily grossing sessions of surgical specimens under supervision
- Routine slide examination with consultant sign-out
- Case-based diagnosis during reporting sessions
- Real-time discussion of difficult cases in the laboratory
- Cytology screening and reporting under graded supervision

2. Bedside-to-Lab Clinical Correlation

- Correlation of histology with clinical history and examination findings
- Discussion with clinicians in multidisciplinary team (MDT) meetings
- Review of radiological findings where relevant

3. Microscope-Based Learning (Core Diagnostic Training)

- Daily multi-headed microscope sessions with consultants
- Guided interpretation of normal and abnormal histology
- Pattern recognition training (tumors, inflammation, infections)
- Systematic exposure to organ-based pathology

4. Case-Based Learning (CBL)

- Discussion of real diagnostic cases
- Emphasis on:
- Differential diagnosis
- Morphological patterns
- Ancillary test interpretation
- Integration of Immunohistochemistry and clinical data

5. Grossing Training (Hands-on Learning)

- Stepwise supervised gross examination of specimens
- Teaching of:
- Specimen orientation
- Tumor measurement and mapping
- Proper sampling techniques
- Feedback-based improvement sessions

6. Cytopathology Learning

- Supervised screening of cytology smears
- Training in Fine Needle Aspiration Cytology technique
- Morphological pattern recognition in cytology
- Correlation with histopathology findings

7. Structured Academic Activities

Regular departmental teaching includes:

- Journal clubs (critical appraisal of literature)
- Slide seminars (unknown case discussions)
- Mortality & morbidity meetings
- Short lectures by faculty and trainees
- Topic presentations (system-based pathology)

8. Self-Directed Learning

- Reading standard pathology textbooks (WHO, Robbins, Rosai)
- Review of digital slides and virtual microscopy
- MCQs and SEQs practice for IMM and FCPS Part II
- Literature review for research work

9. Simulation & Skill-Based Learning

- Practice of:
- Gross specimen handling
- Slide preparation techniques
- Staining procedures
- Mock slide exams and viva sessions
- Diagnostic algorithm training

10. Research-Based Learning

- CPSP synopsis development and approval
- Dissertation writing under supervision
- Data collection, analysis, and interpretation
- Presentation of research findings

11. Small Group Teaching

- Consultant-led group discussions
- Peer-to-peer learning sessions
- Interactive slide quizzes
- Problem-based learning (PBL) discussions

12. Digital and Visual Learning Tools

- Virtual microscopy platforms
- Digital pathology image libraries
- Online atlases and WHO classification resources
- Recorded lectures and webinars

13. Feedback and Assessment-Driven Learning

- Regular formative feedback from supervisors
- Monthly and quarterly evaluations
- Slide tests and viva practice exams
- Logbook-based competency tracking

14. Professional and Reflective Learning

- Case reflection discussions (diagnostic errors and learning points)

- Ethical case discussions
- Communication skill development with clinicians
- Team-based decision making

LEARNING OUT COMES

1. Knowledge (Cognitive Domain)

The trainee will be able to:

- Explain normal histology and correlate it with pathological alterations
- Describe pathogenesis and morphology of diseases across all organ systems
- Apply principles of general pathology (inflammation, neoplasia, degeneration, immunopathology)
- Understand tumor classification, grading, and staging systems
- Demonstrate knowledge of ancillary techniques including special stains and Immunohistochemistry
- Understand basics of molecular pathology and its diagnostic applications

2. Diagnostic Skills (Psychomotor Domain)

The trainee will be able to:

- Perform accurate gross examination (grossing) and appropriate tissue sampling
- Interpret histopathological slides and provide differential diagnoses
- Report routine and complex surgical pathology cases independently
- Recognize urgent/critical diagnoses and communicate promptly
- Correlate histopathology with clinical and radiological findings

3. Cytopathology Competence

The trainee will be able to:

- Perform and interpret Fine Needle Aspiration Cytology
- Screen and report gynecological and non-gynecological cytology
- Correlate cytology findings with histopathology for accuracy

4. Laboratory & Technical Skills

The trainee will be able to:

- Supervise tissue processing, embedding, microtomy, and staining
- Apply routine (H&E) and special staining techniques
- Select and interpret appropriate IHC panels
- Maintain quality control and assurance in the histopathology lab

5. Research & Academic Skills

The trainee will be able to:

- Conduct literature search and critically appraise scientific articles
- Design and execute research projects (CPSP synopsis & dissertation)
- Analyze data and present findings scientifically
- Participate in academic activities (journal clubs, seminars, conferences)

6. Communication Skills

The trainee will be able to:

- Write clear, concise, and clinically relevant pathology reports
- Communicate effectively with clinicians regarding diagnosis and management
- Present cases confidently in academic and multidisciplinary meetings

7. Professionalism & Ethics (Affective Domain)
The trainee will demonstrate:

- Ethical practice and patient confidentiality
- Professional behavior and teamwork
- Awareness of medico-legal responsibilities in pathology
- Accountability and integrity in diagnostic work

8. Teaching & Leadership Skills
The trainee will be able to:

- Teach junior trainees, medical students, and lab staff
- Lead academic sessions (journal club, slide discussions)
- Participate in laboratory management and supervision

9. Management & Organizational Skills
The trainee will be able to:

- Manage workload efficiently and prioritize cases
- Ensure timely reporting and proper documentation
- Participate in laboratory administration and resource management

TECHICAL COMPETENCIES

1. Specimen Handling & Gross Examination
The trainee should be able to:

- Receive, identify, and label specimens correctly
- Ensure proper fixation and preservation
- Perform gross examination (grossing) of:
- Small biopsies
- Large resection specimens (e.g., breast, GIT, uterus)
- Describe specimens accurately (size, shape, margins, lesions)
- Select appropriate sections for histological processing
- Perform tumor sampling and margin assessment

2. Tissue Processing & Histotechnology
The trainee should be able to:

- Understand and supervise:
- Tissue processing cycles
- Paraffin embedding
- Microtomy (section cutting)
- Ensure proper slide preparation and labeling
- Troubleshoot common technical issues (poor fixation, artifacts)

3. Staining Techniques
The trainee should be able to:

- Perform and interpret routine Hematoxylin & Eosin (H&E) staining
- Apply and interpret special stains, such as:
- PAS

- Ziehl-Neelsen
- Reticulin
- Masson trichrome
- Understand indications and limitations of each stain

4. Immunohistochemistry (IHC)

The trainee should be able to:

- Select appropriate Immunohistochemistry markers based on differential diagnosis
- Understand antigen retrieval and staining principles
- Interpret staining patterns (nuclear, cytoplasmic, membranous)
- Use IHC panels in tumor diagnosis and classification
- Recognize pitfalls and false positives/negatives

5. Cytopathology Techniques

The trainee should be able to:

- Perform Fine Needle Aspiration Cytology
- Prepare smears (air-dried and alcohol-fixed)
- Perform rapid stains (e.g., Giemsa, Pap stain)
- Assess specimen adequacy
- Correlate cytology with histopathology

6. Microscopy & Slide Interpretation

The trainee should be able to:

- Use light microscope efficiently
- Identify normal and abnormal histology
- Recognize patterns of disease (inflammatory, neoplastic, degenerative)
- Formulate differential diagnoses based on morphology

7. Frozen Section Technique

The trainee should be able to:

- Handle fresh specimens for frozen section
- Prepare cryostat sections
- Provide rapid intraoperative diagnosis

8. Molecular & Advanced Diagnostic Techniques (Basic Competence)

The trainee should:

- Understand principles of:
- PCR
- FISH
- Cytogenetics
- Know indications for molecular testing

9. Quality Assurance & Laboratory Safety

The trainee should be able to:

- Implement quality control (QC) in staining and reporting
- Participate in quality assurance (QA) programs
- Maintain laboratory safety protocols
- Handle hazardous materials safely

10. Documentation & Reporting Systems

The trainee should be able to:

- Maintain proper specimen records and registers
- Use laboratory information systems (LIS)
- Ensure traceability of specimens and reports
- Follow standardized reporting formats (e.g., CAP/WHO-based templates)

ASSESSMENT

1. Formative Assessment(Ongoing)

Conducted throughout training to provide feedback and guide learning:

- Mini-CEX:Clinical–laboratory correlation and interpretation
- DOPS:Technical skills (instrument handling,QC,procedures)
- Case-Based Discussion(CBD):Analytical reasoning and problem-solving
- OSPE:Practical and data interpretation skills
- Logbook Review: Documentation of competencies

Frequency: Weekly / Monthly

Feedback:Immediate and structured

Summative Assessment

Conducted periodicallyto evaluate competency attainment:

- Written Examination: MCQs (knowledge+interpretation)
- Practical Examination: TOACS stations SAAS,QADIS,QA
- Viva Voce: Conceptual understanding and clinical application

✓Frequency: Postrotation/Annual/CPSP Exams

ASSESMENTMETHODS/TOOLS

Formative Assessment

- Assignments
- quizzes(face-to-face/online)
- Student presentations
- Participation in small group discussions
- Journal club
- TOACS
- DOPS
- MCQs
- Viva
- QADIS
- 360degreeevaluation
- Portfolio

Summative Assessment

IMM

Theory
ExamPaper1:100M
CQs
Paper2:100MCQs

Clinical Exam:
Component1:TOACS(16 Stations)

FCPS EXAMINATION

Theory Exam:
Paper1 MCQS=100
Paper2MCQS=100

Clinical Exam:

Component-2: Analytical Techniques and Instrumentation
Component-3:Structured Assessment of Analytical Skills(SAAS)
Component-4: Quality Assurance
Component-5:Quick Assessment of Data Interpretation Skills(QADIS)

MANDATORYWORKSHOPS/COURSES

For Residents, following workshops are mandatory before IMM:

1. Introduction to Computer & Internet
2. Research Methodology & Biostatistics
3. Communication Skills
4. Basic Life Support(BLS)
5. Advance Cardiac Life Support (ACLS)

RESEARCH PUBLICATION

One of the requirement of the residency program is the Research Publication by the end of residency, on a topic related to the field of specialization

- Topic will be selected within first 6 months of residency.
- Residents will prepare & submit their synopsis by the end of Second Year of Training, before IMM Exam, as per guidelines of Advance Studies & Research Board of the university.
- Synopsis should be duly approved by the Institutional Ethical Review Committee.
- It should have adequate sample size and sufficient number of variable stogive training to the candidate to conduct research, to collect & analyze the data Thesis shall be submitted by the candidate duly recommended by the Supervisor.
- The minimum duration between approval of synopsis and submission of thesis shall be One Year.
- There search thesis must be compiled and bound in accordance with the Thesis Format Guidelines approved by the University.
- There search thesis will be submitted along with the fee prescribed by the University.

LEARNING RESOURCES

1. Core Textbooks (Primary Resources)

Trainees are expected to use standard international textbooks for conceptual and diagnostic learning:

- Robbins and Cotran Pathologic Basis of Disease – for general pathology and disease mechanisms
- Rosai and Ackerman's Surgical Pathology – for surgical pathology diagnosis
- Sternberg's Diagnostic Surgical Pathology – detailed diagnostic reference
- WHO Classification of Tumours – tumor classification (essential for exams and reporting)

2. Subspecialty & Supplementary Books

- Diagnostic Cytopathology by Winifred Gray – for cytology
- Koss' Diagnostic Cytology – comprehensive cytology reference
- Histological Typing of Tumours – tumor typing
- Atlases of histopathology and cytology for image-based learning

3. Journals & Scientific Literature

Regular reading of peer-reviewed journals is essential:

- American Journal of Surgical Pathology
- Modern Pathology
- Histopathology
- Archives of Pathology and Laboratory Medicine

4. Digital & Online Learning Resources

- PathologyOutlines.com – quick reference for diagnosis, IHC panels
- WebPath – histology and pathology tutorials
- Libre Pathology
- Virtual microscopy platforms and digital slide libraries

5. Laboratory-Based Learning

- Daily grossing sessions
- Routine slide examination and reporting
- Exposure to:
- Special stains
- Immunohistochemistry
- Frozen section (where available)
- Cytology practice including Fine Needle Aspiration Cytology

6. Academic Activities

- Journal clubs (critical appraisal)
- Slide seminars (unknown cases)
- Case discussions and MDT meetings
- Workshops and hands-on training sessions
- Conferences and symposia

TIME TABLE

Day	Time	Topic
Monday (once a month)	8:00 am to 2:00 pm	Journal Club discussion/Presentation
As per roster daily	8:00 am to 2:00 pm	Grossing + Sign-out
As per roster daily	8:00 am to 2:00 pm	Undergraduate students teaching/Practical
Thursday	8:00 am to 2:00 pm	Cases-Slide presentation
Saturday of every month	8:00 am to 2:00 pm	Written assessment
1st Tuesday of every month	8:00 am to 2:00 pm	Slides
Thursday (Twice a month)	8:00 am to 2:00 pm	MDDT Meeting
Wednesday of every month	8:00 am to 2:00 pm	FNAC

Routine working schedule

- Grossing
- Sign-out
- FNAC
- Undergraduate students (Teaching and Practicals)