

Cairo University
Faculty of Medicine
Department of Pathology

Program of **Pathology for MD degree** **2010 /2016**

Program of the course: Doctorate degree of Pathology.
Department offering the course: Pathology Department.
Academic year/ level: MD
Allocated marks: 400 marks -
Course duration: 2 academic years
Total teaching hours: 450 hours (if including administration and teaching 674 hrs)
Lectures: 2 hrs & Interactive learning: 2hr(114hrs)- Practical 336
hrs , administrative 112 hrs & teaching 112 hrs over 2 academic
years]

Date of specification approval

A- Basic Information:

Title: Pathology for post graduates Doctorate degree

Code: PATH 908 AP & PATH 908 P

Credit Points: Total credit 282 (MD 120 + MS 162)

- **Lecture: 1hr /week & Interactive learning: 1hr once/twice/week Total: 114 hrs**
- **Practical, administrative & teaching skills: throughout the 2 years**

Total hours for practical training: 6 hrs /wk (336 hrs)

Teaching undergraduates 2hrs /wk 112 hrs total

Administrative duties 2hrs /wk 112 hrs total

B- Professional Information

I. AIMS OF THE COURSE:

- 1- To produce competent surgical pathologists, able to practice at the consultant level in their specialty of Histopathology & Cytology and to take personal responsibility for their work and diagnosis; applying the National and International standards of evidence based pathology and complying with the code of medical laboratory ethics .
- 2- To encourage Pathologists to update their knowledge in Pathology & Cytology, increase skills and develop appropriate professional attitudes.
- 3- To conduct an efficacious research according to the needs of the Egyptian community and be prepared for continuous professional development.
- 4- To demonstrate a good working relationships with colleagues and appropriate communication skills.
5. To respect confidentiality of patients and interact in an honest professional manner .

II. INTENDED LEARNING OUTCOMES:

By the end of the course, students should be able to:

II A. Knowledge and understanding:

1. **Define and discuss the main disease categories** that may affect the body (general pathology) as well as the basic mechanisms underlying these disorders (etiology, pathogenesis & natural history)
2. **Determine the fate & complications** of each particular disease.
3. **Understand the principles of laboratory processing** within Surgical pathology and Cytopathology particularly the principles of specimen dissection, macroscopic description and block selection in both neoplastic and non-neoplastic conditions.
4. **Understand the basic knowledge of preparation and staining techniques** for common specimen types as well as being able to identify principles of 'special' histochemical and immunohisto-chemical methods and principles of common molecular pathology techniques and when to resort to them. The candidate should also be able to list the panels of antibodies for particular diagnostic applications, e.g. mesothelioma etc.
5. **Describe the microscopic features** within tissues as well as the major common pathological processes and patterns of disease.
6. **Identify features of malignancy** in sites commonly investigated as well as features of specific non-malignant diagnoses, e.g. infection
7. **Recognize the principles of performing a research study**, how to use appropriate statistical methods, the principles of research ethics and the structure and function of local research ethics committees and understand the principles of research funding and how to obtain it.
8. **Understand the principles of evidence-based pathology/cytology** and display a keenness to use evidence in the support of patient care and own decisions therein.
9. **Awareness of the medico-legal aspects of the practice of pathology and autopsy**
10. **Awareness of relevant strategies** to ensure confidentiality and aware of situations when confidentiality might be broken

II B. Professional and practical skills:

- 1- **Able to diagnose malignancy with confidence** in specimens from breast, GI tract, respiratory tract, urinary tract, head and neck, lymphoreticular system, and serous fluids.
- 2- **Integrate clinical information and histology or other investigations** into diagnosis.
- 3- **Write an accurate report** that gives clinicians the information they need.
- 4- **Be able to recognize histological features of histochemical and immunohisto-chemical stains** in normal and diseased tissues in addition to being able to interpret data from molecular analyses in the context of the clinical situation and morphological appearances when undertaking diagnostic surgical pathology.
- 5- **Spreading and fixing a smear** and be able to recognize faults and artifacts of preparation of smears, e.g. air-drying.
- 6- **Possess sufficient manual dexterity to perform dissection** safely and accurately, without damage to tissues.

- 7- **Use computers** for producing pathology reports, data registry entries and laboratory statistics. Also search databases and access e-mail and internet services
- 8- **Able to critically appraise evidence.**
- 9- **Able to initiate and complete a research project** by the end of training
- 10- **Communicate** with other members of the pathology department, other departments and clinical teams.
- 11- **Able to perform a complete autopsy**

II C. Attitude:

1. **Understand the importance of accuracy and requirement for attention to detail** during specimen description and block selection and during surgical reporting and the need for correlation with the clinical situation.
2. **Understand the increasing need to combine morphological opinions with data from molecular analyses** in diagnostic surgical pathology
3. **Understand the importance** of ensuring that **request** form and **specimen identification** is accurate and the requirement to identify and resolve any errors or discordance.
4. **Demonstrate** an understanding of the importance of surgical pathology to clinicians and patients [e.g. timeliness and accuracy of reporting].
5. **Understand cost-benefit issues** when considering the use of additional techniques.
6. **Display a keenness to use evidence** in the support of patient care and own decisions therein.
7. **Respect the work of the technical staff** in preparing slides for viewing.
8. **Awareness of their own limitations** & be willing to consult their supervisors and to admit mistakes
9. **Develop the habit of lifelong learning** by building on previous undergraduate and general medical training experience so that relevant knowledge of disease processes is acquired and maintained at a level consistent with the requirements of independent practice in this group of medical specialties.
10. **Be aware of the requirements of the Egyptian Ministry of Health** and regulations of the **Medical syndicate**, concerning laboratory ethics and practice of the profession and **Act with honesty, sensitivity and promptly.**
11. **Communicate in an ethical manner** with patients and inform him in an honest way about the diagnosis and prognosis of the disease.
12. **Respect the confidentiality** of the patient as regard the diagnoses of the condition.

III. Academic standards

1. Academic reference standers: The academic standers of pathology program is adopted and accredited by the departmental council
2. External References for Standards:

III. REQUIREMENTS & Training Duration:

REQUIREMENTS

Applicants should have finished their MS exams & defended their thesis.

DURATION OF TRAINING 2 years

- The minimum duration of training will be two years after which the candidates are legible to defend their thesis. Training programs should include suitable rotational arrangements to cover all the necessary areas of experience.
- Trainees must choose to pursue a subspecialty in 5 months of 2nd year their training in which case they will be attached to the subspecialty unit & their second exam paper will be skewed to topics in their chosen subspeciality . Subspecialties available: Liver&GIT -Cytology – Renal , lymphoreticular and immunohistochemistry & gynecologic pathology .
- Trainees must choose three of the offered electives in last three months of the second year.(Cytogenetics, EM, tissue culture & flow cytometry, image analysis and biostatistics)

SUPERVISION & MONITORING OF PROGRAM

Training programs will be carried out and supervised by the departmental staff members on a day-to-day basis. The trainee will keep a training record (**log book**) & a portfolio of their activities which can be used to support educational planning. The educational supervisor will conduct regular supportive appraisals and liaise with the Postgraduate Dean to ensure that records of in Training Assessment will be completed annually. The training record will be used to ensure that an appropriate amount of time is spent on each activity and that appropriate specialist areas have been covered.

IV. COURSE :

Supervised experience in all three main aspects of the work; diagnostic pathology+ Autopsies (Surgical pathology), Cytopathology and Immunohistochemistry

The course has been adapted from the courses designed by the British Royal College of Pathologists & modified to suit our training requirements & facilities

COURSE CONTENTS:

1) HISTOPATHOLOGY

A- DIAGNOSTIC HISTOPATHOLOGY

- 1- Specimen reception and booking
- 2- Macroscopical examination
- 3- Microscopical examination
- 4- Frozen sections
- 5- Special techniques
- 6- Writing reports

B-AUTOPSIES

- 1- Documentation
- 2- Health and safety
- 3- Supervision
- 4- Observation of and participation in Adult, foetal and/or perinatal autopsies
- 5- Pre-examination case assessment:
- 6- Reporting
- 7- Special dissections as required.

C- PRINCIPLES OF LABORATORY PRACTICE (General aspects) Basic Health and safety aspects of working in a laboratory and postmortem room environment.

- 1- Training in the Laboratory aspects of the preparation, cutting and staining of histological sections

- 2- The use of departmental protocols for the handling; of specimens
- 3- Laboratory management:
- 4- Information technology
- 5- Quality assurance
- 6- Scientific and medical literature:
- 7- Relevant statistical methods & advances in laboratory techniques
- 8- Clinical correlations
- 9- Teaching

D- BASIC PATHOLOGY (General pathology)

E- SPECIAL PATHOLOGY (Special pathology)

2) CYTOPATHOLOGY 3 months

- General & Specimen collection and handling
- Cervical screening
- Diagnostic cytopathology

3) IMMUNOHISTOCHEMISTRY 1 month

There should be a period of at least 4 weeks protected time spent on Immunohistochemical techniques with hands on work in the lab.

4) CME COURSES(throughout the 2 years): 24 monthly courses . A minimum of 15 should be completed and certified

5) Elective courses: Cytogenetics, EM, tissue culture & flow cytometry, image analysis and biostatistics

V. TEACHING PLAN:

V-A Teaching & learning methods

- 1) Lectures & interactive learning: 1 hours each, once /twice weekly in Dept Post Grad auditorium over the 2 years
- 2) Practical: Biopsy : 2hrs/ week Tissue cutting 2hrs/week *Autopsy 2hrs/week*
- 3) Administrative work : 2hrs/week
- 4) Teaching undergraduates according to undergraduate schedule 2hr/wk
- 5) Assignment 2 assignments & 2 presentations in National/international / clinicopathologic meetings /workshops

V- B Time plan:

Item:	Time schedule	plan
Autopsy	All through the 2 yrs Prof Fahima Habib Prof. Soliman Saba Prof Badawya Bayoumi	Autopsy (10 adult & 10 neonatal /perinatal) 1Xweek
General aspects (principles of lab practice)	All through the 2 yrs Prof. A Hennawy	Lectures& IL: 2 hour 1Xweek Administrative duty 1Xwk Safety measures Techniques Documentation Information technology Quality assurance Laboratory management
Immunopathology & IHistochemistry	1month Profs Samia Gabal & Sahar Talaat	Lectures& IL: 2 hour 1Xweek Basic principles hands on laboratory work daily
Basic & Surgical Pathology	10 months (5 months /yr) See lecture table	Lectures& IL: 2 hour 1Xwk

Program: PATHOLOGY

including Pediatric, & Neuropathology		Biopsy examination 1Xwk Autopsy 1Xwk
Cytopathology	3 months Prof. S. Mahfouz Prof. Gina Assad Prof M. Ayoub	Lectures& IL: 2 hour 1Xweek Slide examination Techn & processing FNAC ----daily

	Sept	Oct	Nov	Dec	Jan	Feb	March-July	
MD yr 1	1)G.Principles of lab practice 2)Surgical pathology 3)Teaching 4)Administrative duties	1) Surgical pathology, Basic pathology & autopsy 2)Surgical pathology 3)Teaching 4)Administrative duties				1)Immunopath & Histochem 2)Teaching 3)Administrative duties	1)Cytopathology 2)Teaching 3)Administrative duties	
MD yr 2	1)Subspecialty of choice 2)Teaching 3)Administrative duties					Elective	Elective	Elective

Lecture Topics	% total hours	Number of hours	
		Lectures	Lecturer
General Pathology	51%	58 hrs	
1. Orientation	2%	2	Head of Dept Sept 28
2. TECHNICAL POINTERS ON SAMPLE HANDLING, SENDING, PROCESSING & REPORTING & quality control of surgical biopsy material	4%	4	Ahmed Hennawy Oct 26-Oct 12
3. INFLAMMATION & REPAIR	4%	4	Magdy Morad Oct 19-Oct26
4. CELL INJURY, ACCUMULATIONS DEPOSITIONS & diseases of AGEING	4%	4	Nour El Hoda Nov 2-Nov 9
5.GROWTH DISTURBANCES & NEOPLASIA	5%	6	Mona Anwar Hany Khattab Manar Ayoub Nov16-Dec 7
6. FLUID & HEMODYNAMIC DISTURBANCES	4%	4	Badawya Dec 14- Dec 21
7. IMMUNE RESPONSE & NON SPECIFIC & VIRAL INFECTION	4%	4	Hany Khattab -Dec28-Jan 4
8.SPECIFIC INFECTIONS- GRANULOMA, & MYCOTIC DISEASES	4%	4	Naema Marie Jan11 –Jan 18
9. GENETIC, ENVIROMENTAL, NUTRITIONAL DISORDERS & IONIZING RADIATION EFFECTS	5%	6	Aly El Hindawy Fahima Habib Yehia Fayed

Program: PATHOLOGY

			Jan 25 –Feb 8
10. IMMUNOHISTOCHEMISTRY	7%	8	Samia Gabal- Sahar Talaat Feb 15-March 8
11. HOW TO RESEARCH A TOPIC	4%	4	Sahar Talaat March 15-29
12. Autopsy	7%	8	Badawya 3 hrs Fahima 1hr Soliman 4 hrs April 7-28
Special Pathology	49%	56	
1.CARDIOVASCULAR(heart & blood vessels	2%	2	Samia Gabal Sept 30
2. RESPIRATORY	4%	4	Fahima Oct 7-Oct14
3.GASTROINTESTINAL	4%	4	Dalal Elwi Oct 21-Oct 28
4.HEPATOBIILIARY & PANCREATC	4%	4	Bahaa Nov 4-Nov 11
5.URINARY TRACT & KIDNEY	5%	6	Magdy Francis- Sawsan Fada Nov18-Dec 2
6.MALE GENITAL	2%	2	Ilia Dec 9
7.FEMALE GENITAL & BREAST	5%	6	Mohamed Eissa Mona Anwar Nevine Dec 16-Jan 6
8.ENDOCRINE	2%	2	Essam Jan 13
9.BLOOD&LYMPHORETICULAR	4%	4	Naema Marie- Jan 20 -Jan27
10.SKELETAL SYSTEM ,SOFT TISSUE, JOINTS	4%	4	Aly Hindawy Feb 3 –Feb 10
11.PERIPHERAL & CENTRAL NERVOUS SYSTEMS	4%	4	Ahmed Aziz Feb 17-Feb 24
12. Head & neck	2%	2	Magdi Morad March 3
13. Dermatopathology	5%	6	Maha Mossaad- Gina Assaad March10-24
14. CYTOLOGY	5%	6	Soheir Mahfouz- Manar Ayoub March 31- April 14
TOTAL	100%	114 hrs	

V-C: ASSESSMENT TOOLS:**1. Log book**

2. Written test of knowledge (6 hours). It comprises general Laboratory principles- Surgical pathology –cytology & Immunohistochemistry/pathology
1 essay question – 8 short questions – 1 problem (ethical/technical/research)-
20 MCQ - true & false etc..... per paper

3. Practical slides & gross

Slides 2 1/2hrs: 8 glass slides 1hour - data show 1hr histopath, cytology & IH slides with questions

Gross 1 hour: 4 gross samples for description & discussion with examiner

4. Oral

5. Dissertation: Topics will be chosen according to the research protocol of the department and defended after passing the exam

V-D: ASSESSMENT SCHEDULE:

May & November

Followed by the dissertation, when candidate is ready and research is approved by all supervisors

V-E: WHEIGHTING OF ASSESSMENT:

	Course	Code	Credit points	Total CP
MD		PATH 908		282(120 MD + 162 MS)
				120
	Pathology Lectures		10	
	Electives, activities & CME		3	
	Practical skills + autopsy + Cytology Immunohistochemistry		27	
	Thesis		80	
MS				162

Credit points 120 (total MD + MS=282) exam 400 marks
Written 200

Each paper will be 100 marks (The subspecialty will be included in the second paper) and divided into:

1 essay question (15 marks) – 8 short questions (50 marks) – 1 problem (case/ethical/technical/research) (5 marks)-20 MCQ - true & false etc.....(30 marks)

Oral 100

Practical (Gross & microscopic) 100

Slides 2hrs (80 marks): 8 glass slides 1hour (56 marks) - data show 1hr histopath, cytology & IH slides with questions (24 marks)

Gross (20 marks)1 hour: 3 gross samples : description (15 marks) discussion (5 marks)

Thesis Formative (acceptance) accepted to have the degree (80 CP)

Log book Formative (pre requisite to sitting for exam at least 75 of all categories should be fulfilled)

Total Credit points120 400 marks 100%

Pass mark: 60% + fulfillment of log book requirements &

Acceptance of thesis by the examiner panel

VI. LEARNING AND REFERENCE MATERIALS:

VI-A SUGGESTED MATERIAL

- ☒ Department tutorials & practical data shows, available in the department:
- ☒ Textbooks and atlases: Available at faculty bookshops & main library
 - Aspiration cytology a pattern recognition approach Andrew Renshaw Elsevier Saunders 2005
 - Atkinsons atlas of cytology
 - Rosai and Ackerman's Surgical Pathology Juan Rosai, Mosby 2004
 - Sternberg's Diagnostic surgical Pathology 4th edition, Lippincott Williams and Wilkins
 - Basic Pathology by Kumar, Cotran & Robbins
- ☒ Lecture CDs available in the department on request
- ☒ Periodicals of interest
 - Histopathology –Blackwell publishing
 - Human Pathology- Elsevier
 - Cancer research - American Association for Cancer Research
 - Acta Cytologica- official Periodical of The International Academy of Cytology
 - Diagnostic Cytopathology- Interscience Wiley
- ☒ Important web sites

PATHOLOGY

<http://www.pathmax.com/>

<http://www-medlib.med.utah.edu/WebPath/LABS/LABMENU.html#2>

<http://www.med.uiuc.edu/PathAtlas/titlePage.html>

<http://www.medscape.com/pathologyhome>

<http://www.gwumc.edu/dept/path/2F.HTM>

<http://path.upmc.edu/cases/index.html>

<http://tray.dermatology.uiowa.edu/DPT/DPTutor.htm>

<http://web.med.unsw.edu.au/pathology/Pathmus/pathmus.htm#InteractiveImages>

http://www.hopkinsbreastcenter.org/library/educational_information/benign.shtml

<http://www.thedoctorsdoctor.com/diseases/liposarcoma.htm#histo>

<http://www.vh.org/adult/provider/radiology/LungTumors/CaseStudies/Patient005/Text/Patient005.html>

<http://www.path.uiowa.edu/virtualslidebox/>

<http://www.pathguy.com/>

<http://www.emedicine.com/oncology/>

CYTOLOGY

http://pathology2.jhu.edu/cyto_tutorial/Index.cfm

<http://www.cytopathnet.org/tiki-index.php>

<http://www.thieme.com/SID2210556846782/ebooklibrary/flexibook/pubid1010744645/index.html>

<http://dpalm.med.uth.tmc.edu/cytopath/cytologyimages.htm>

<http://www.hoslink.com/cytology.htm>

http://www.path.uiowa.edu/cgi-bin-pub/vs/fpx_search.cgi

<http://pathology2.jhu.edu/cytopath/welcome.cfm>

<http://www.bccancer.bc.ca/HPI/Education/CytoSleuthQuiz/default.htm>

<http://pathed.upstate.edu:8080/cytology/frame.htm>

<http://pathology2.jhu.edu/cytopath/masterclass/Homepage.htm>

<http://www.gotpath.com/>

http://www.geocities.com/jcprolla/cytopathology_diagnoses.html

http://images.google.com/imgres?imgurl=http://www.images.md/intermedia/imgagent/media/get/getwatermarked/ACNCR01-09-55-001&imgrefurl=http://www.images.md/users/explore_chapter.asp%3FID%3DACNCR01-09-55%26colID%3DACNCR01-09%26coltitle%3DBreast%2BCancer&h=80&w=120&sz=11&tbnid=EZu7ubDWDdUUIM:&tbnh=55&tbnw=83&hl=en&start=67&prev=/images%3Fq%3DFine%2BNeedle%2BAspiration%2Bof%2BBreast%26start%3D60%26svnum%3D10%26hl%3Den%26lr%3D%26sa%3DN
<http://screening.iarc.fr/index.php>

TEXT

<http://129.240.38.9/norcyt/index4.html>
<http://jcp.bmjournals.com/cgi/collection/cytopathology>
<http://www.sh.lsuhs.edu/fammed/OutpatientManual/PapSmear.htm>
<http://www.gla.ac.uk/faculties/medicine/teaching/MedCALlist.htm>

Thyroid

<http://mosolysis.freeweb.hu/pajzsmirigy/thyrocd/book/v-1-4.htm>

PAP

<http://www.cytopathology.org/NIH/>
<http://www.ec.upstate.edu/cyto/index.html>
<http://homepages.ed.ac.uk/duvall/eqa/intro.htm>

Breast

<http://endeavor.med.nyu.edu/path-cases/breast/home/breastfnahome.html>
<http://www.diseasesdatabase.com/result.asp?qlngUserChoice=23444&bytRel=2&blnBW=False&strBB=RL&blnClassSort=True>
http://images.google.com/imgres?imgurl=http://www.hopkinsbreastcenter.org/pathology/benign/1j.jpg&imgrefurl=http://www.hopkinsbreastcenter.org/library/educational_information/benign.shtml&h=380&w=492&sz=289&tbnid=NTEcMCp3mRuZbM:&tbnh=98&tbnw=127&hl=en&start=1&prev=/images%3Fq%3DFine%2BNeedle%2BAspiration%2Bof%2BBreast%26svnum%3D10%26hl%3Den%26lr%3D

VII. FACILITIES REQUIRED FOR TEACHING & LEARNING:

- 1- Data show
- 2- Overhead projector
- 3- 2 Multiheaded microscopes
- 4- 2 computers with internet access

**Head of Department & Course Coordinator: Prof Ahmed AbdelaAziz
Prof Samia Gabal**

2016

