



AMERICAN UNIVERSITY OF ANTIGUA COLLEGE OF MEDICINE

Course Outline for General Pathology Semester – 3 Pathology – 1 (General Pathology) January - April 2009

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Pathology is the study of changes observed in organs and tissues in disease states. Pathology also outlines the course of any disease and complications arising out of diseases. To ensure that one has a good knowledge of pathology, students are expected to have a strong basic knowledge of Anatomy, Histology, Neurosciences, Physiology, Biochemistry and Genetics.

Robbins writes that “Pathology is a bridging discipline involving both basic science and clinical practice and is devoted to the study of the structural and functional changes in cells, tissues and organs that underlie disease”

Aims and Objectives

Emphasis is to help every student understand the pathologic processes by explaining the significance of the following components

- Etiology
 - Pathogenesis
 - Morphology
 - Clinical features and course of the disease and
 - Laboratory diagnosis
- In addition, a student is taught the art of diagnosis.
- Student is taught how to interpret common laboratory values

Student is also provided an opportunity to visit hospital mortuary to watch autopsies being performed. Presently third semester students are offered this opportunity. Students registered for pathology-1 (General Pathology) are encouraged to contact faculty by email as and when they face learning difficulties/ problems.

**Course Out-line for [Pathology – I or General Pathology](#)
Lectures – (All Lectures are of 50 minutes in duration)**

Week	Month	Date	Topics
1 st Week	January	7	Introduction to Pathology
		8	Chapter- 1 Cellular Adaptations, Cell Injury and Cell Death
		9	Causes & Mechanisms of cell injury Necrosis & Apoptosis
			Sub-cellular responses, cell aging
2 nd week	January	12	Chapter- 2 : Acute and Chronic Inflammation
		13	Chemical Mediators – 1
		14	Chemical Mediators – 2
		15	Chronic inflammation
		16	Systemic effects
3 rd Week	January	19	Chapter- 3 : Tissue Renewal and Repair: Regeneration, Healing and Fibrosis
		20	Tissue repair, Stem cells - Growth Factors
		21	Healing by repair
		22	Cutaneous wound healing & Fibrosis
		23	Revision and Practice Questions
4 th Week	January	26	Review of Chapter -1
		27	Review of chapter – 2
		28	Review of Chapter – 3
		29	Mini Exam -1 Chapters – 1, 2 & 3
		30	Chapter- 4 : Hemodynamic disorders, Thromboembolic Disease and Shock Introduction
5 th Week	February	2	Edema
		3	Hemorrhage
		4	Hemostasis & Thrombosis
		5	Embolism & Infarction
		6	Shock
6 th Week	February	9	Chapter- 5 : Genetic Disorders Mendelian disorders
		10	Lysosomal storage disorders
		11	Other Disorders
		12	Disorders- Multifactorial inheritance
		13	Single Gene Disorders
7 th Week	February	16	Cytogenetic Disorders
		17	Molecular Diagnosis

Week	Month	Date	Topics
			Chapter – 6: Diseases of Immunity
	February	18	Cells of Immune system and Cytokines & HLA
		19	Hypersensitivity Reactions
		20	
8th Week	February	23	Auto-Immune Diseases- 1
		24	Auto-Immune Diseases- 2
		25	Immunologic Deficiency Syndromes-1
		26	Immunologic Deficiency Syndromes-2& Amyloidosis
		27	Mini Exam -2: Chapters - 4, 5 & 6.
9th week	March	2	Review for Mini Exam
		3	Chapter- 7 : Neoplasia Introduction and nomenclature
		4	Epidemiology and Molecular basis of cancer
		5	Oncogenes and biology of tumor growth
		6	Carcinogenic agents -1
10 th Week	March	9	Carcinogenic Agents -2
		10	Tumor markers, cachexia and Paraneoplastic syndromes
		11	Lab diagnosis of Cancer
		12	Chapter- 8 : Infectious Diseases, General Principles of Microbial Pathogenesis
		13	Viral Infections
11 th Week	March	16	Bacterial Infections
		17	Fungal Infections
		18	Parasitic Infections
		19	Chapter- 9: Environmental and Nutritional Pathology
		20	Common Envir. & Occup... Exposures -1
12 th Week	March	23	Common Envir. & Occup. Exposures -2
		24	Nutrition and Disease – 1
		25	Nutrition and Disease -2

		26	Review of Chapters- 7 ,8 & 9
		27	Mini Exam -3: Chapters – 7, 8 & 9.
13th Week	March	30	Chapter- 10: Diseases of Infancy and Childhood Ped. Path , Congenital anomalies-1
		31	Congenital anomalies-2
	April	1	Perinatal & Neonatal Diseases
		2	Childhood Tumors & Tumor like conditions
		3	Last Date for submitting Student write up and Log books.
14th Week	April	6	Review of Lab File
		7	Lab- Final Exam
		8	
		9	----
		10	Review for Lecture Final exam -1 (Selected topics from all the 10 chapters included for this examination)
15th Week	April	13	Review for Lecture Final exam – 2
		14	Review for Lecture Final exam - 3
		15	Review for Lecture Final exam – 4
		16	Review for Lecture Final exam -5
		17	Review for Lecture Final exam -6
16th Week	April	20	

Third Semester – Pathology Lab Schedule

Note:

1. Entire class is divided into two groups and each group reports once a week.
2. The dates and group details are yet to be announced
3. Every student has to write the lab proceedings in a 'lab note book' as this exercise carries 2 points

Week	Exercise	Content Area
1	Morphology	Interpretation of common terms in Pathology. Examples of Clinical Vignettes from Review of Robbins
2	Stains	Usage of common stains in Pathology. Few more clinical vignettes from Review of Robbins Discussion on 'Lab File' begins
3	Tumor Markers	Lab File Discussion Relevance of Lab values – A discussion on various diagnostic tools
4	Laboratory Diagnosis	Lab File Discussion
5	Case Analysis	Lab File Discussion and discussion of Simple cases and interpretation of lab values. Application of lab values in health and disease: Importance of examination of CSF
6	Tumor study -1	Discussion of Lab File and Importance of Examination of Urine:
7	Tumor study -2	Discussion of Lab File and Importance of Examination of Sputum
8	Study of Blood -1	Discussion of Lab File and Hematology: Introduction – RBC Morphology and Changes in Anemia. Sickle cells and other abnormal RBCs
9	Study of Blood -2	Discussion of Lab File and Red Blood indices: MCV: MCH: MCHC: PCV: ESR:
10	Study of Blood -3	Discussion of Lab File and White Blood Cells – Blasts and Immature cells – Classification of Leukemia
11	Lymph Node Pathology	Discussion of Lab File and explanation of the concept of Lymphoma: Types of lymphoma: Hodgkin lymphoma and non-Hodgkin lymphoma: Spleen and causes of splenomegaly
12	Review	Model Lab Exam -1 Review of Cases – USMLE Step -1 type questions
13	Review	Model Exam – 2

NOTE:

1. Topics covered under the above guidelines are **included** for all in-house examinations
2. **Autopsy:** Opportunities to view autopsies at Holberton Hospital. Interested students will be identified and 4-5 students form a team. Students have to take their own scrubs and disposable gloves and masks.

3. Students attending autopsies will have to report to Dr. Lester Simon at the appointed time. Autopsies are conducted in the Mortuary attached to the Pathology Laboratory of Holberton Hospital.

Pathology faculty is not responsible for the examination schedules of any other subjects in semester – 3.

If a student has a conflict with examination dates, please speak to the concerned Chair and not to the faculty in Pathology.

Faculty:

1. Dr. B. R. Krishnanand B.Sc., MBBS .,MD
Professor and Chair & Course Director for Semester – 3 (Pathology – 1)
2. Dr Ramadas Naik , MBBS .,MD
Professor Semester – 3 (Pathology – 1)

Visiting Professor

Dr. Lester Simon MD.
Chief Pathologist, Holberton Hospital, St. John's - Antigua

Recommended Books:

Robbins and Cotran -Pathologic Basis of Disease: Kumar, Abbas and Fausto: - 7th Edition:Saunders/Elsevier

Robbins and Cotran: Review of Pathology: 2nd Edition: Klatt and Kumar: Elsevier/Saunders

Suggested Reading:

Rubin's Pathology: Clinicopathologic Foundations of Medicine: Raphael Rubin and David S strayer: Lippincott Williams and Wilkins

Lippincott's Review of Pathology: Illustrated Interactive Q & A: Bruce A Fenderson and Raphael Rubin

Teaching Modules:

It is known fact that didactic teaching can turn out to be a monotonous experience for students who spend the entire day inside a classroom. Hence in addition to lectures, this course director employs role playing, student presentations, small group discussions and other modalities as deemed appropriate to create a friendly and lively ambience.

These changes add variety and enhance the quality of learning. The objective is to offer a 'Total Learning Experience'. Where possible a quick link to Anatomy, Histology, Physiology, Biochemistry and or Genetics is attempted simulating a modified 'McMaster' style of teaching. The recommended text book is put to good use during lectures to encourage student participation as a part of learning.

A few *Quiz* form of examinations will be held to help a student to build up confidence levels.

Examinations – How they are conducted:

A total of four examinations are being held providing students ample opportunities of getting thoroughly exposed to MCQs (Single BEST response type) of Shelf and Step -1 type of questions. 'Quizzes; and 'minis' are the common patterns.

In addition, a Lab Final Examination also will be held. All examinations are reviewed subsequently for the benefit of all students. No student is allowed to miss an examination. **No examination will be given at a earlier or a later date.** Only in cases of extreme emergency will the final lecture exam be conducted at the **END** of the **NEXT** semester, if justification with documentary evidence is provided to the course director.

Answer keys and spread sheets with student's secret numbers are posted as soon as possible to keep the whole process extremely transparent. All questions are of objective type and there is no scope for a subjective assessment of any student.

The syllabus for each examination is announced a **week earlier**. All class lessons in Pathology – 1 are also made available to students free of cost on the school server.

The examinations are conducted in multiple choice formats. Each question will be assigned 72 seconds. Exams (MINI'S) 1, 2 and 3 will have 30, 45 or 50 questions depending on the volume of topics covered.

The lab exam will have 40 questions. In The final Lab Exam, the questions are based on Visuals that appear in a separate study file provided. This visual file is made up of gross, microscopic, radiologic and hematologic pictures.

A **SEPARATE STUDY FILE** is provided for students to study for their Lab final examination. The duration of Lab exam is 48 minutes.

The final lecture examination has 60 questions and is of 72 minutes duration. Date will be confirmed by the administrators during the second or third week of February 2009. Please note that the Chair of Pathology does not fix the date for the final lecture examination.

This examination is likely to be held on the last day of the semester or as informed by the administrators.

Distribution of Cumulative Points:

Mini – 1 = 15%

Mini – 2 = 15%

Mini – 3 = 15%

Lab Final = 20%

Final Lecture Examination = 30%

Pathology write up* and the Log Book = 5%

***Pathology write up** is an assigned exercise. Every student will have a different topic to write on. Details will be provided later.

Total Points = 100

Shelf Examination:

This will be offered only at the end of **Semester – 4** when teaching of Systemic Pathology and Hematology also get completed.

Note:

1. All the dates provided for holding examinations are tentative and are likely to be changed.
2. Course outline shown is indicative. Certain changes may have to be made due to several constraints.

3. On an average, an entire chapter gets taught in 5-6 working days.
4. If you want to meet / discuss with the course director, please fix up an appointment with the departmental secretary.
5. *PowerPoint* slides are made available on the school server. This helps you to prepare well for the class.
6. Attend all lectures and lab sessions.
7. If you are leaving the island temporarily, please inform the course director and the registrar clearly stating the reasons for leaving the island.