

Republic of Yemen

Ministry of Higher Education & Scientific Research

21 SEPTEMBER UNIVERSITY of MEDICALS & APPLIED
SCIENCES



Faculty of Medicine

Bachelor Program of Medicine and Surgery

Course Specification of

Introduction to Pathology

Course Code. (A21P127)

2023



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:	Reviewed by:	Head of department	Quality Unit:	Dean of Medicine Faculty	Center of Development and Quality Assurance Dean
Assoc Prof. Mogahid Nassar	Dr. Waleed Al-thahbi	Dr. Waleed Al-thahbi	Dr. Fadhl Shujaa Al-deen	Dr. Salwa Al-Ghomeri	

I. General Information:

1.	Course Title:	Introduction to Pathology				
2.	Course Code:	A21P127				
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/ Seminar	Lab	Clinical
		3	2	--	2	--
4.	Level/ Semester at which this Course is offered:	1 st Level / 2 nd Semester				
5.	Pre –Requisite :	Non				
6.	Co –Requisite :	Introduction to Physiology, Introduction to Anatomy & Embryology				
7.	Program (s) in which the Course is Offered:	Bachelor of Medicine and Surgery				
8.	Language of Teaching the Course:	English				
9.	Location of Teaching the Course:	Faculty of Medicine				
10.	Prepared by:	Associate Prof. Mogahid Yahya Hassan Nassar				
١١	Date and Number of Approval by Council:	2023				

II. Course Description:

The course allows students to learn basic concept of the various disease processes in the body as well the basic molecular, cellular and reactions to various injurious agents. General topics covered includes cell injury including adaptations, necrosis & apoptosis. Pathology and types of Inflammation and hemodynamic disturbances as thrombosis and ischaemia are also discussed. The course also emphasizes neoplasia

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including classification, epidemiology, and characteristics of benign and malignant tumors. The principles of medical genetic disorders are also covered. In addition to lectures, the teaching & learning strategies also include practical lessons, seminars, case study and self-learning.

III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:		Referenced PILOs		
A. Knowledge and Understanding:		I, P or M/A		
a1	Describe the terminology and divisions in the field of general pathology correctly and contextually.	M	A1	Describe the general and basic sciences related to human body structure and functions with emphasis on normal and abnormal conditions.
a2	Explain essential basic pathological processes including cell death and injury, inflammation, circulatory disturbances ,genetic disorders and neoplasia.	M	A3	Explain the pathological and pathogenesis changes in various diseases, and their etiological triggers including genetic, developmental, infectious, metabolic, endocrinal, autoimmune, neoplastic, traumatic, degenerative and occupational factors.
a3	Demonstrate an understanding of the predisposing factors, causes, morphological changes in cells, and tissue of the body , cellular responses and potential complications of such pathological disorders.			
B. Intellectual Skills:				
b1	Compare the pathologic picture of a disorder with the normal cells and tissues based on gross or microscopic morphology.	A	B1	Compare between normal and abnormal conditions and predict the appropriate treatment or intervention.
b2	Correlate clinical manifestations with the causes, pathological changes and	A	B2	Analyze and interpret the finding from history, clinical examination

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	laboratory findings to reach into a provisional diagnosis.			and investigations to propose a diagnosis and develop a shared management plan for common acute, chronic and urgent physical and mental health presentations.
C. Professional and Practical Skills:				
c1	Use light microscope effectively in examination of the pathological specimen.	P	C1	Perform complete clinical examination and precise investigations to reach the final diagnosis
c2	Examine macroscopically and microscopically various disorders in cell death and injury, inflammation, circulatory disturbances ,genetic disorders and neoplasia			
D. Transferable Skills:				
d1	Work effectively in groups and individually through the laboratory procedures and dealing with pathology specimen using up to date technology that help in understanding the diseases. in the pursuit of scientific knowledge.	I	D2	Work individually or in a team and develop lifelong learning using up to date technology that help in understanding the diseases and its control and prevention

I= Introduced, P=Practiced or M/A= Mastered/Advanced.

IV- (A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:		
Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
a1	- Interactive lectures, - Self learning	-Quizzes - Written Exam - Assignment
a2		
	Explain essential basic pathological processes including cell death and injury, inflammation,	

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	circulatory disturbances ,genetic disorders and neoplasia.		
a3	Demonstrate an understanding of the predisposing factors, causes, morphological changes in cells, and tissue of the body , cellular responses and potential complications of such pathological disorders.		

(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
b1	Compare the pathologic picture of a disorder with the normal cells and tissues based on gross or microscopic morphology.	-Interactive lectures. - Seminars	-Written Exam -Quizzes -Final Oral Exam
b2	Correlate clinical manifestations with the causes, pathological changes and laboratory findings to reach into a provisional diagnosis.	- Discussion - Self Learning	Assignment: - Report & presentation evaluation

(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
c1	Use light microscope effectively in examination of the pathological specimen.		
c2	Examine macroscopically and microscopically various disorders in cell death and injury, inflammation, circulatory disturbances ,genetic disorders and neoplasia	-Practical session. - Demonstration -Case Study	- Practical Exam - Report evaluation - Assignment

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(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
d1 Work effectively in groups and individually through the laboratory procedures and dealing with pathology specimen using up to date technology that help in understanding the diseases. in the pursuit of scientific knowledge.	- Seminars - Discussion - Case Study - Self Learning	Assignment : - Presentation evaluation - Supervisor evaluation - Report evaluation

– IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Introduction and cell injury	- Definition - Causes of cell injury - Mechanism - Types of cell injury	1	2	a1,a2,a3, b1,b2,d1
2	Adaptation	- Atrophy - Hypertrophy - Hyperplasia - Metaplasia - Dysplasia & Carcinoma in-situ	1	2	a1,a2,a3, b1,b2,d1
3	Necrosis & apoptosis	- Definition - Causes - Types - apoptosis	1	2	a1,a2,a3, b1,b2,d1
4	Abnormal accumulation	- Abnormal calcification - Fatty changes - Pigments - Amyloidosis	1	2	a1,a2,a3, b1,b2,d1

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No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
5	Inflammation	<ul style="list-style-type: none"> - Acute inflammation - Suppurative inflammation. - Chronic inflammation 	3	6	a1,a2,a3, b1,b2,d1
6	Healing and Repair	<ul style="list-style-type: none"> - Types - Fibrosis - Wound healing - Bone healing 	1	2	a1,a2,a3, b1,b2,d1
7	Mid Exam		1	2	a1,a2,a3, b1,b2
8	Circulatory disturbance	<ul style="list-style-type: none"> - Thrombosis - Clot - Embolism - Ischaemia - Infarction - Congestion - Oedema - Haemorrhage - Shock 	3	6	a1,a2,a3, b1,b2,d1
9	Neoplasia	<ul style="list-style-type: none"> - Definition - Classification - Characters - Benign tumors - Malignant tumors - Examples 	3	6	a1,a2,a3, b1,b2,d1
10	Final Theoretical Exam	...	1	2	a1,a2,a3, b1,b2
Number of Weeks /and Units Per Semester			16	32	

B. Practical Aspect (Lab/Clinical) :

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No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	- Tissue processing	1	2	c1, d1
2	- How to use the microscope	1	2	c1, d1
3	- - Cell injury, necrosis	1	2	c1,c2 d1
4	- Fatty changes, pigments, calcification.	1	2	c1,c2 d1
5	- - Acute inflammation	1	2	c1,c2 d1
6	- - chronic inflammation	1	2	c1,c2 d1
7	- - Granulation tissue, wound healing.	1	2	c1,c2 d1
8	- Mid-term practical exam	1	2	c1,c2
9	- Thrombosis, embolism, infarction.	1	2	c1,c2 d1
10	- -Pulmonary edema, brain edema. - -Congestive heart, liver congestion - -Hemorrhage, brain hemorrhage.	1	2	c1,c2 d1
11	- Benign tumors	1	2	c1,c2 d1
12	- Malignant tumors ,Carcinoma, sarcoma.	2	2	c1,c2 d1
13	- Final practical Exam	1	2	c1,c2
Number of Weeks /and Units Per Semester		14	28	

VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	Assignment 1:	2 nd	Formative	a1,b1,c1,d1
2	Assignment 2:	6 th	Formative	a2,b2,c2,d1
3	Assignment 3:	12 th	Formative	a3,b2,c1,c2,d1
Total				

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VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Assignments	2 nd ,6 th ,12 th	Formative	-	a1,a2,a3,b1,b2,c2,d1
2	Quizzes 1 & 2	5 th ,13 th	10	10%	a1,a2,a3,b1,b2
3	Mid-Term Theoretical Exam	9 th	20	20%	a1,a2,a3,b1,b2
4	Mid-Term Practical Exam	9 th	5	5%	b1,b2,c1,c2
5	Final Practical & Oral Exam including Project Presentation & Evaluation	15 th	15	15%	b1,b2,c1,c2,d1
6	Final Theoretical Exam	16 th	50	50%	a1,a2,a3,b1,b2
Total			100	100%	

IX. Learning Resources:

1- Required Textbook(s):

1. Kumar V, Abbas AK, Fausto N, Aster JC (2014). Robbins & Cotran Pathologic Basis of Disease. 9th ed. Cambridge: Elsevier; USA.
1. Levison D, Reid R, Burt a D, Harison D J (2008). Muir's Textbook of Pathology. 14th ed. CRC press: UK.

2- Essential References:

- 1- Kumar V, Abbas A K, Aster J C.(2014)..Robbins and Cotran Pathologic basis of disease. Professional edition, Elsevier USA.
- 2- Rubin's Pathology(2011). Clinicopathologic Foundations of Medicine, 6th edition edited by Rubin, Strayer, and Rubin (Lippincott Williams and Wilkins).
- 3- Robin Reid and Fiona Robert, (2008). Pathology Illustrated. 6th edition. Elsevier Churchill Livingstone, USA.
- 4- Harsh Mohan,(2005). Text book of pathology. 5th edition. Jaypee Brothers, India.

3- Electronic Materials and Web Sites etc.:

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Websites:

1. <http://www.medicine.cu.edu.eg/beta/en/jcalpro/2428.html>
2. <http://www.pathmax.com/>
3. <http://www-medlib.med.utah.edu/WebPath/LABS/LABMENU.html#2>
4. <http://www.med.uiuc.edu/PathAtlasf/titlePage.html>
5. [http:// WWW.pathomicro.med.sc.edu/booth](http://WWW.pathomicro.med.sc.edu/booth)

X. Course Policies: (Based on the Uniform Students' By law (2007))

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

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Faculty of Medicine

Program of Medicine and Surgery

Course Plan (Syllabus) of Introduction to Pathology

Course Code. A21P١٢7

I. Information about Faculty Member Responsible for the Course:							
Name of Faculty Member:	Mogahid Yahya Nassar	Office Hours					
Location & Telephone No.:	771341873						
E-mail:	mogahidnassar@yahoo	SAT	SUN	MON	TUE	WED	THU

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2023

II. Course Identification and General Information:

Course Title:	Introduction to Pathology				
Course Code:	A21P127				
Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
		Lecture	Tutorial/Seminar	Lab	Clinical
	3	2	--	2	-
Level/ Semester at which this Course is offered:	1st Level / 2nd Semester				
Pre –Requisite :	Non				
Co –Requisite :	Introduction to Physiology, Introduction to Anatomy & Embryology				
Program (s) in which the Course is Offered:	Bachelor of Medicine and Surgery				
Language of Teaching the Course:	English				
Location of Teaching the Course:	Faculty of Medicine				
Prepared by:	Associate Prof. Mogahid Yahya Hassan Nassar				
Date and Number of Approval by Council:	2023				

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III. Course Description:

The course allows students to learn basic concept of the various disease processes in the body as well the basic molecular, cellular and reactions to various injurious agents. General topics covered includes cell injury including adaptations, necrosis & apoptosis. Pathology and types of Inflammation and hemodynamic disturbances as thrombosis and ischaemia are also discussed. The course also emphasizes neoplasia including classification, epidemiology, and characteristics of benign and malignant tumors. The principles of medical genetic disorders are also covered. In addition to lectures, the teaching & learning strategies also include practical lessons, seminars, case study and self-learning.

IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

A. Knowledge and Understanding:	
a1	Describe the terminology and divisions in the field of general pathology correctly and contextually.
a2	Explain essential basic pathological processes including cell death and injury, inflammation, circulatory disturbances ,genetic disorders and neoplasia.
a3	Demonstrate an understanding of the predisposing factors, causes, morphological changes in cells, and tissue of the body , cellular responses and potential complications of such pathological disorders.
B. Intellectual Skills:	
b1	Compare the pathologic picture of a disorder with the normal cells and tissues based on gross or microscopic morphology.
b2	Correlate clinical manifestations with the causes, pathological changes and laboratory findings to reach into a provisional diagnosis.
C. Professional and Practical Skills:	
c1	Use light microscope effectively in examination of the pathological specimen.

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c2	Examine macroscopically and microscopically various disorders in cell death and injury, inflammation, circulatory disturbances ,genetic disorders and neoplasia
D. Transferable Skills:	
d1	Work effectively in groups and individually through the laboratory procedures and dealing with pathology specimen using up to date technology that help in understanding the diseases. in the pursuit of scientific knowledge.

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction and cell injury	<ul style="list-style-type: none"> - Definition - Causes of cell injury - Mechanism - Types of cell injury 	1	2
2	Adaptation	<ul style="list-style-type: none"> - Atrophy - Hypertrophy - Hyperplasia - Metaplasia - Dysplasia & Carcinoma in-situ 	1	2
3	Necrosis& apoptosis	<ul style="list-style-type: none"> - Definition - Causes - Types - apoptosis 	1	2
4	Abnormal accumulation	<ul style="list-style-type: none"> - Abnormal calcification - Fatty changes - Pigments - Amyloidosis 	1	2
5	Inflammation	<ul style="list-style-type: none"> - Acute inflammation - Suppurative inflammation. - Chronic inflammation 	3	6

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No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
6	Healing and Repair	<ul style="list-style-type: none"> - Types - Fibrosis - Wound healing - Bone healing 	1	2
7	Mid Exam		1	2
8	Circulatory disturbance	<ul style="list-style-type: none"> - Thrombosis - Clot - Embolism - Ischaemia - Infarction - Congestion - Oedema - Haemorrhage - Shock 	3	6
9	Neoplasia	<ul style="list-style-type: none"> - Definition - Classification - Characters - Benign tumors - Malignant tumors - Examples 	3	6
10	Final Theoretical Exam	...	1	2
Number of Weeks /and Units Per Semester			16	32
No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction and cell injury	<ul style="list-style-type: none"> - Definition - Causes of cell injury - Mechanism - Types of cell injury 	1	2

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No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
2	Adaptation	<ul style="list-style-type: none"> - Atrophy - Hypertrophy - Hyperplasia - Metaplasia - Dysplasia & Carcinoma in-situ 	1	2
3	Necrosis & apoptosis	<ul style="list-style-type: none"> - Definition - Causes - Types - apoptosis 	1	2
4	Abnormal accumulation	<ul style="list-style-type: none"> - Abnormal calcification - Fatty changes - Pigments - Amyloidosis 	1	2
5	Inflammation	<ul style="list-style-type: none"> - Acute inflammation - Suppurative inflammation. - Chronic inflammation 	3	6
6	Healing and Repair	<ul style="list-style-type: none"> - Types - Fibrosis - Wound healing - Bone healing 	1	2
7	Mid Exam		1	2
8	Circulatory disturbance	<ul style="list-style-type: none"> - Thrombosis - Clot - Embolism - Ischaemia - Infarction - Congestion - Oedema - Haemorrhage - Shock 	3	6

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No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
9	Neoplasia	<ul style="list-style-type: none"> - Definition - Classification - Characters - Benign tumors - Malignant tumors - Examples 	3	6
10	Final Theoretical Exam	...	1	2
Number of Weeks /and Units Per Semester			16	32

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	Tissue processing	1	2
2	How to use the microscope	1	2
3	- Cell injury, necrosis	1	2
4	Fatty changes, pigments, calcification.	1	2
5	- Acute inflammation	1	2
6	- chronic inflammation	1	2
7	- Granulation tissue, wound healing.	1	2
8	Mid-term practical exam	1	2
9	Thrombosis, embolism, infarction.	1	2
10	<ul style="list-style-type: none"> - -Pulmonary edema, brain edema. - -Congestive heart, liver congestion -Hemorrhage, brain hemorrhage. 	1	2
11	Benign tumors	1	2

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No.	Tasks/ Experiments	Number of Weeks	Contact Hours
12	Malignant tumors ,Carcinoma, sarcoma.	2	2
13	Final practical Exam	1	2
Number of Weeks /and Units Per Semester		14	28

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	- Tissue processing	1	2
2	- How to use the microscope	1	2
3	- - Cell injury, necrosis	1	2
4	- Fatty changes, pigments, calcification.	1	2
5	- - Acute inflammation	1	2
6	- - chronic inflammation	1	2
7	- - Granulation tissue, wound healing.	1	2
8	- Mid-term practical exam	1	2
9	- Thrombosis, embolism, infarction.	1	2
10	- -Pulmonary edema, brain edema. - -Congestive heart, liver congestion - -Hemorrhage, brain hemorrhage.	1	2
11	- Benign tumors	1	2
12	- Malignant tumors ,Carcinoma, sarcoma.	2	2
13	- Final practical Exam	1	2
Number of Weeks /and Units Per Semester		14	28

خطأ! لم يتم العثور على مصدر المرجع.

VI. Teaching Strategies of the Course:

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VII. Assessment Methods of the Course:

خطأ! لم يتم العثور على مصدر المرجع.

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VIII. Assignments:

No.	Assignments	Week Due	Mark
1	Assignment 1:	2nd	Formative
2	Assignment 2:	6th	Formative
3	Assignment 3:	12th	Formative
Total			

IX. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Assignments	2nd,6th, 12th	Formative	-
2	Quizzes 1 & 2	5th ,13th	10	10%
3	Mid-Term Theoretical Exam	9th	20	20%
4	Mid-Term Practical Exam	9th	5	5%
5	Final Practical & Oral Exam including Project Presentation & Evaluation	15th	15	15%
6	Final Theoretical Exam	16th	50	50%
Total			100	100%

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Assignments	2 nd ,6 th ,12 th	Formative	-
2	Quizzes 1 & 2	5 th ,13 th	10	10%
3	Mid-Term Theoretical Exam	9 th	20	20%
4	Mid-Term Practical Exam	9 th	5	5%

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No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
5	Final Practical & Oral Exam including Project Presentation & Evaluation	15 th	15	15%
6	Final Theoretical Exam	16 th	50	50%
Total			100	100%

IX. Learning Resources:

1- Required Textbook(s):

1. Kumar V, Abbas AK, Fausto N, Aster JC (2014). Robbins & Cotran Pathologic Basis of Disease. 9th ed. Cambridge: Elsevier; USA.
2. Levison D, Reid R, Burt a D, Harison D J (2008). Muir's Textbook of Pathology. 14th ed. CRC press: UK.

2- Essential References:

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3- Electronic Materials and Web Sites etc.:

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2. <http://www.pathmax.com/>
3. <http://www-medlib.med.utah.edu/WebPath/LABS/LABMENU.html#2>
4. <http://www.med.uiuc.edu/PathAtlasf/titlePage.html>
5. [http:// WWW.pathomicro.med.sc.edu/booth](http://WWW.pathomicro.med.sc.edu/booth)

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XI. Course Policies: (Based on the Uniform Students' Bylaw (2007))

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

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