

SCBM 341: General Pathology
1st Semester, Academic Year 2017

Department of Pathobiology
Faculty of Science
Mahidol University

Course Syllabus

(Lecture-Lab-Self-study)

SCBM 341 General Pathology

2(1-2-3)

Cell injury and cell death, Cell adaptations, Inflammation and Tissue Repair, Hemodynamic disorders and Shock, Immunopathology, Neoplasia, Pathology of Infectious diseases, Genetic Diseases, Environmental and Nutritional Pathology

Prerequisite SCBI 211 & 212 Human Structure 1 & 2

Type of Course Required course

Session 1st Semester, Third year student

Course Condition class size: None

Course Objective

At the completion of the course, students should be able to:

1. Explain the mechanism of host response to diseases.
2. Explain the organ and tissue alteration after cell death, inflammation, repair, genetic disorder.
3. Explain the mechanism of carcinogenesis.
4. Observe and practice in the pathological specimen
5. Discussion, analysis, presentation, question and answer in general pathological topics.

Course Outline

Weeks	Topic	Hour			Instructor
		Lecture/ Discussion	Lab.	Self-study	
1	L1- Cell Injury and Death	1		2	Staff of Pathobiology
	Lab 1- Cell Injury and Death		2	1	
2	L2- Adaptation	1		2	
	Lab 2- Adaptation		2	1	
3	L3- Tissue Renewal and Repair	1		2	
	Lab 3- Tissue Renewal and Repair		2	1	
4	L4- Inflammation	1		2	
	Lab 4- Inflammation		2	1	

Weeks	Topic	Hour			Instructor
		Lecture/ Discussion	Lab.	Self-study	
5	L5- Immunopathology	1		2	Staff of Pathobiology
	Lab 5- Immunopathology		2	1	
6	L6- Hemodynamic Disorders	1		2	
	Lab 6- Hemodynamic Disorders		2	1	
7	L7- Environmental Pathology	1		2	
	Lab 7- Environmental Pathology		2	1	
	Examination: Lecture	L1-7			
	Examination: Laboratory	Lab1-7			
8	L8- Genetic Disorders	1		2	
	Lab 8- Genetic Disorders		2	1	
9	L9- Metabolic Disorders	1		2	
	Lab 9- Metabolic Disorders		2	1	
10	L10- Bacterial Infection	1		2	
	Lab10- Bacterial Infection		2	1	
11	L11- Fungal Infection	1		2	
	Lab 11- Fungal Infection		2	1	
12	L12- Viral Infection	1		2	
	Lab 12- Viral Infection		2	1	
13	L13- Parasitic Infection	1		2	
	Lab 13- Parasitic Infection		2	1	
14	L14- Neoplasia	1		2	
	Lab 14- Neoplasia		2	1	
15	L15- Course summary and discussion	1		2	
	Lab 15- Course summary and discussion		2	1	
	Examination: Lecture	L8-15			
	Examination: Laboratory	Lab8-15			

Teaching methods

1. Lectures in class 15 hours.
2. Students design and carry out experiments in laboratory session 30 hours.

Teaching Media

1. Class handouts, Powerpoint presentation
2. Gross specimens and Histopathology glass slides
3. Photo album of Gross specimen and Histopathology glass slides

Measurement and Evaluation of Students Achievement

1. Examination in lecture 50%
2. Examination in laboratory 30%
3. Class participation 10 %
4. Quiz 10%
5. Student Examination Grade = A, B+, B, C+, C, D+, D, F

Course Evaluation

1. Students gain knowledge according to the course objectives.
2. Students give written course evaluation at the end of the course.
3. Evaluate students' satisfaction towards teaching and learning of the course using a questionnaire.
4. The lecturer will be notified with the result of the course evaluation from students to further improve the lecturing process.

References

1. Kumar V, Abbas AK, and Aster JC. 2017. Robbins Basic Pathology. 10th Edition. Elsevier. 952pp. ISBN 10: 0323353177 / ISBN 13: 9780323353175
2. Rubin E, Reisner HM. Essentials of Rubin's Pathology. 6th ed., Lippincott Williams & Wilkins, 2013, 704p.
3. Underwood JCE, Cross SS. General and Systematic Pathology. 5th ed., Churchill Livingstone, 2009, 872p.
4. The Internet Pathology Laboratory for Medical Education Florida State University College of Medicine : <http://library.med.utah.edu/WebPath/webpath.html>
5. The Pathology Guy" Ed Friedlander MD Chairman, Dept. of Pathology, University of Health Sciences, KC : <http://www.pathguy.com/>

Instructors

1. ANJ = Dr. Amornrat Naranuntarat Jensen
2. NC = Dr. Nisamanee Charoenchon
3. NK = Dr. Niwat Kangwanrangsarn
4. PC = Dr. Pornthip Chaichompoo
5. PS = Assistant Professor Dr. Prasit Suwannalert
6. SN = Somphong Narkpinit
7. WJ = Associate Professor Dr. Wannee Jiraungkoorskul
8. WP = Dr. Witchuda Payuhakrit

Scientist : Piya Kosai (Pathobiology), Suchada Gaewduanglek (MDL;Salaya)

Coordinator Somphong Narkpinit, MD.

Department of Pathobiology, Faculty of Science, Mahidol University

Tel. 02-201-5550, E-mail: somphong.nar@.mahidol.ac.th

Leading Questions

L01 Cell Injury and Death

- What are the morphological features of cell death?

L02 Adaptation

- What are the stages of the cell cycle?

L03 Tissue Renewal and Repair

- How is importance of tissue renewal and repair?

L04 Inflammation

- What are benefit functions of inflammation?
- What are the different features of acute and chronic inflammation?

L05 Immunopathology

- How immune system causes tissue injury?

L06 Hemodynamic Disorders

- What is the pathogenesis of deep vein thrombosis?

L07 Environmental Pathology

- What are the occupational lung diseases?

L08 Genetic Disorders

- What are genetic disorders and what are the causes of genetic disorders?

L09 Metabolic Disorders

- What is the pathogenesis of metabolic disorder?

L10 Bacterial Infection

- How bacteria caused pathology in human host?

L11 Fungal Infection

- What is the pathogenesis of fungal infection?

L12 Viral Infection

- Why are there new outbreaks of the virus?

L13 Parasitic Infection

- What is the pathogenesis of parasitic infection?

L14 Neoplasia

- What are characteristics of benign and malignant tumors?
- How to inhibit cancer cell invasion and metastasis?

Lesson Plan

1. Topic	L01-Cell Injury and Death
2. Name Lecturer	Dr. Wannee Jiraungkoorskul
Education	Ph.D. (Biology)
Position	Associate Professor
Contact	02-201-5571, Email: wannee.jir@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	25 August 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Explain the causes and mechanism of cell injury and death 2. Describe the reversible and irreversible injury 3. Describe the type of cellular necrosis
7. Topic Detail	
	Causes and mechanism of cell injury and death, Reversible and irreversible injury, Type of cellular necrosis
8. Learning Methods	Lecture, Laboratory and Self study
9. Teaching Media	Handout, Text book, Glass slide, Gross specimen, and CAI
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	25 July 2017

Lesson Plan

1. Topic	L02-Adaptation and Accumulation
2. Name Lecturer	Dr. Wannee Jiraungkoorskul
Education	Ph.D. (Biology)
Position	Associate Professor
Contact	02-201-5571, Email: wannee.jir@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	1 September 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Describe the cause of cellular adaptation and accumulation to injury 2. Describe the type and mechanism of cellular adaptation and accumulation to injury
7. Topic Detail	
	Cause, type and mechanism of cellular adaptation and accumulation to injury
8. Learning Methods	Lecture, Laboratory and Self study
9. Teaching Media	Handout, Text book, Glass slide, Gross specimen, and CAI
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	25 July 2017

Lesson Plan

1. Topic	L03-Tissue Renewal and Repair
2. Name Lecturer	Dr. Nisamanee Charoenchon
Education	Ph.D. (Medicine)
Position	Lecturer
Contact	02-201-5573, nisamanee.cha@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	8 September 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Describe processes of tissue repair, regeneration and their molecular mechanisms 2. Describe roles and components of the extracellular matrix (ECM) in tissue repairing processes 3. Differentiate between regeneration and healing 4. Differentiate between normal aspects of tissue and pathologic aspects of tissue repair
7. Topic Detail	
	<ol style="list-style-type: none"> 1. The processes of tissue repair, regeneration and their molecular mechanisms 2. Concepts of ECM and Cell-Matrix interactions 3. Definition and detail of regeneration and healing 4. Laboratory practice in gross and glass specimen related to tissue repair
8. Learning Methods	Lecture, Laboratory, Group discussion and Self study
9. Teaching Media	PPT, Handout, Text book, Gross specimens and Glass slides of histopathology
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	26 July 2017

Lesson Plan

1. Topic	L04-Inflammation						
2. Name Lecturer	Dr. Prasit Suwannalert						
Education	Ph.D. (Pathobiology)						
Position	Assistant Professor						
Contact	02-201-5558, Email: prasit.suw@mahidol.ac.th						
3. Course	General Pathology (SCBM341)						
4. Program Title	B.Sc. in Biomedical Science						
5. Date and Time	15 September 2017, Time 1:30 am - 4:30 am						
6. Topic Objective	At the completion of this unit the student will be able to						
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">1. Inflammation</td> <td style="width: 50%;">2. Acute inflammation</td> </tr> <tr> <td>3. Morphological patterns of acute inflammation</td> <td>4. Chemical mediators and regulators</td> </tr> <tr> <td>5. Chronic inflammation</td> <td>6. Systemic effects of inflammation</td> </tr> </table>	1. Inflammation	2. Acute inflammation	3. Morphological patterns of acute inflammation	4. Chemical mediators and regulators	5. Chronic inflammation	6. Systemic effects of inflammation
1. Inflammation	2. Acute inflammation						
3. Morphological patterns of acute inflammation	4. Chemical mediators and regulators						
5. Chronic inflammation	6. Systemic effects of inflammation						
7. Topic Detail							
	<ol style="list-style-type: none"> 1. Inflammation 2. Acute inflammation 3. Morphological patterns of acute inflammation 4. Chemical mediators and regulators 5. Chronic inflammation 6. Systemic effects of inflammation 						
8. Learning Methods	Lecture, Topic discussions, Laboratory						
9. Teaching Media	PPT, Handout, Text book, Gross specimens, Glass slides of histopathology						
10. Teaching Equipment	Computer, LCD						
11. Examination and Evaluation	Multiple choice questions						
12. Date of Improvement	15 August 2017						

Lesson Plan

1. Topic	L05-Immunopathology
2. Name Lecturer	Dr. Witchuda Payuhakrit
Education	Ph.D. (Pathobiology)
Position	Lecturer
Contact	02-201-5572, Email: witchuda.pay@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	22 September 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Understand the etiology of immunological disorder 2. Understand the mechanism of hypersensitivity reaction 3. Understand the pathogenesis of common immunological disorder 4. Understand the pathology of immunological disorder
7. Topic Details	
	<ol style="list-style-type: none"> 1. Introduction of normal immune response 2. Mechanism of hypersensitivity reactions 3. Pathogenesis and cellular pathology of autoimmune diseases 4. Pathogenesis and cellular pathology of immunodeficiency syndromes
8. Learning Methods	Lecture, Laboratory and Self study
9. Teaching Media	Power point presentation, Handout, Text books, Laboratory material and equipment
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	4 August 2017

Lesson Plan

1. Topic	L06-Hemodynamic Disorders
2. Name Lecturer	Somphong Narkpinit
Education	MD
Position	Lecturer
Contact	02-201-5550, Email : sompong.nak@.mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	29 September 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Describe mechanism of blood and fluid circulation. 2. Describe the definition and pathogenesis of edema, hyperemia, congestion, hemorrhage, thrombosis, embolism, infarction and shock. 3. Describe the macro- and microscopic appearance of organs and tissue due to hemodynamic disorders.
7. Topic Detail	
	Mechanism of normal blood and fluid circulation; Definition and pathogenesis of edema, hyperemia, congestion, hemorrhage, thrombosis, embolism, infarction and shock; Macro- and microscopic appearance of organs and tissue due to hemodynamic disorders.
8. Learning Methods	Lecture, Laboratory and Self study
9. Teaching Media	Handout, Text book, Glass slide, Gross specimen, and CAI
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	6 August 2017

Lesson Plan

1. Topic	L07-Environmental Pathology
2. Name Lecturer	Dr. Wannee Jiraungkoorskul
Education	Ph.D. (Biology)
Position	Associate Professor
Contact	02-201-5571, Email: wannee.jir@.mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	6 October 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Describe the definition of environmental pathology. 2. Identify, classification and describe the pathogenesis due to environmental pathology. 3. Explain and evaluate the sign, symptom, diagnosis and laboratory investigation i.e., heavy metal analysis in urine, due to environmental pathology. 4. Describe the macro- and microscopic appearance of organs and tissue due to environmental pathology.
7. Topic Detail	
	<p>Definition, identify, classification and pathogenesis due to environmental pathology; Explain and evaluate the sign, symptom, diagnosis and laboratory investigation i.e., heavy metal analysis in urine; Describe the macro- and microscopic appearance of organs and tissue due to environmental pathology.</p>
8. Learning Methods	Lecture, Laboratory and Self study
9. Teaching Media	Handout, Text book, Glass slide, Gross specimen, and CAI
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	25 July 2017

Lesson Plan

1. Topic	L08-Genetic Disorders
2. Name Lecturer	Amornrat Naranuntarat Jensen
Education	Ph.D. (Toxicology)
Position	Lecturer
Contact	02-201-5579, Email : amornrat.nar@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	27 October 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Explain how the genetic mutations can lead to the diseases 2. Define different classifications of genetic disorders as well as give examples of the disorder in each category 3. Explain transmission patterns of genetic disorders
7. Topic Detail	
	<p>Underlying causes of genetic diseases</p> <p>Classification of genetic disorders and their examples</p> <ul style="list-style-type: none"> - Single gene disorders - Chromosomal disorders - Multifactorial disorders - Mitochondrial disorders
8. Learning Methods	Lecture and Self study
9. Teaching Media	Handout and Text book
10. Teaching Equipment	Computer and LCD
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	1 August 2017

Lesson Plan

1. Topic	L08-Metabolic Disorders
2. Name Lecturer	Somphong Narkpinit
Education	MD
Position	Lecturer
Contact	02-201-5550, Email: sompong.nar@.mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	10 November 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Describe the definition of metabolic disorders. 2. Identify, classification and describe the pathogenesis due to metabolic disorders. 3. Explain and evaluate the sign, symptom, diagnosis and laboratory investigation, due to metabolic disorders. 4. Describe the macro- and microscopic appearance of organs and tissue due to metabolic disorders.
7. Topic Detail	
	Definition, identify, classification and pathogenesis due to metabolic disorders; Explain and evaluate the sign, symptom, diagnosis and laboratory investigation; Describe the macro- and microscopic appearance of organs and tissue due to metabolic disorders.
8. Learning Methods	Lecture, Laboratory, Self study, Presentation, Group discussion
9. Teaching Media	Handout, Text book, Publications
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	25 July 2017

Lesson Plan

1. Topic	L10-Bacterial Infection
2. Name Lecturer	Dr. Witchuda Payuhakrit
Education	Ph.D. (Pathobiology)
Position	Lecturer
Contact	02-201-5572, Email: witchuda.pay@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	17 November 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Understand the principles of bacterial infection and diseases caused by bacteria 2. Understand the pathogenesis of diseases caused by bacterial infection 3. Understand pathology of bacterial infection 4. Understand the host responses to bacterial infection
7. Topic Details	
	<ol style="list-style-type: none"> 1. Introduction to bacteria and virulence factors 2. Pathogenesis of diseases caused by bacterial infection 3. Pathology of bacterial infection 4. Host immune response to bacterial infection
8. Learning Methods	Lecture, Laboratory and Self study
9. Teaching Media	Power point presentation, Handout, Text books, Laboratory material and equipment
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	4 August 2017

Lesson Plan

1. Topic	L11-Fungal Infection
2. Name Lecturer	Dr. Niwat Kangwanrangsak
Education	Ph.D (Medical Sciences)
Position	Lecturer
Contact	02-201-5563, Email: niwat.kan@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	24 November 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Describe the principle and etiology of human important fungal infectious diseases. 2. Explain the major host responses to fungal infection and associated diseases. 3. Differentiate and explain the characteristics of cellular and tissue alterations of fungal infectious diseases.
7. Topic Detail	
	<ol style="list-style-type: none"> 1. Classification and nomenclature of fungi and related infectious diseases. 2. Characteristic of common fungal infectious diseases. 3. Pathological changes of human important fungal infectious diseases. 4. The mechanism and cause of changes of infectious fungal diseases that are common in immunocompromised host.
8. Learning Methods	Lecture, Laboratory and Self study
9. Teaching Media	Handout, Text book, Glass slide, Gross specimen, and CAI
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	25 July 2017

Lesson Plan

1. Topic	L12-Pathology of Viral Infection
2. Name Lecturer	Dr. Pornthip Chaichompoo
Education	Ph.D. (Immunology)
Position	Lecturer
Contact	Email: pornthip.chh@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	29 November 2017, Time 1:30 am - 4:30 am
6. Topic Objective	
<p>At the completion of this unit the student will be able to;</p> <ol style="list-style-type: none"> 1. Explain viral pathogenesis 2. Explain host defense mechanisms to viral infection 3. Explain cellular pathology of viral infection 4. Explain pathology of viral infection 5. Analyze diagnostic techniques for viral infection 6. Illustrate pathogenesis, pathology and diagnostic technique of dengue infection 	
7. Topic Detail	
<ol style="list-style-type: none"> 1. General properties and mechanisms of viral injection 2. Host defense mechanisms to viral injection 3. Immune evasion and pathogenesis of viral injection 4. Cellular pathology and pathophysiology of viral infection 5. Diagnosis of pathogenic viral infection 6. Pathogenesis, pathology and diagnostic technique of dengue infection 	
8. Learning Methods	Lecture, Presentation and Group discussion
9. Teaching Media	Power point presentation, Handout, Text book
10. Teaching Equipment	Computer, LCD
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	20 July 2017

Lesson Plan

1. Topic	L13-Parasitic Infection
2. Name Lecturer	Dr. Niwat Kangwanrangsak
Education	Ph.D (Medical Sciences)
Position	Lecturer
Contact	02-201-5563, Email: niwat.kan@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	1 December 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Describe the principle and etiology of human important parasitic infectious diseases. 2. Explain the major host responses to parasitic infection and associated diseases. 3. Differentiate and explain the characteristics of cellular and tissue alterations of parasitic infectious diseases.
7. Topic Detail	
	<ol style="list-style-type: none"> 1. Classification and nomenclature of parasitic and related infectious diseases. 2. Characteristic of common parasitic infectious diseases. 3. Pathological changes of human important parasitic infectious diseases. 4. The mechanism and cause of changes of parasitic infectious diseases that is common in immunocompromised host.
8. Learning Methods	Lecture, Laboratory and Self study
9. Teaching Media	Handout, Text book, Glass slide, Gross specimen, and CAI
10. Teaching Equipment	Computer, LCD, Microscope
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	25 July 2017

Lesson Plan

1. Topic	L14-Neoplasia
2. Name Lecturer	Dr. Prasit Suwannalert
Education	Ph.D. (Pathobiology)
Position	Assistant Professor
Contact	02-201-5558, Email : prasit.suw@mahidol.ac.th
3. Course	General Pathology (SCBM 341)
4. Program Title	B.Sc. (Biomedical Science)
5. Date and Time	6 December 2017, Time 1:30 am - 4:30 am
6. Topic Objective	At the completion of this unit the student will be able to
	<ol style="list-style-type: none"> 1. Terminology and classification of neoplastic cells 2. Invasion, metastasis, grading, and staging of tumors 3. Cell and molecular biology for cancer development 4. Host defense against tumors 5. Cancer epidemiology
7. Topic Detail	
	<ol style="list-style-type: none"> 1. Terminology and classification of neoplastic cells 2. Invasion, metastasis, grading, and staging of tumors 3. Cell and molecular biology for cancer development 4. Host defense against tumors 5. Cancer epidemiology
8. Learning Methods	Lecture, Topic discussions, Laboratory
9. Teaching Media	PPT, Handout, Text book, Gross specimens, Glass slides of histopathology
10. Teaching Equipment	Computer, LCD
11. Examination and Evaluation	Multiple choice questions
12. Date of Improvement	15 August 2017