



Course Specifications

Course Title:	Basic of Immunology
Course Code:	373239-3
Program:	Bachelor in Clinical Laboratory Sciences; Level-6 (Program Code: 373000)
Department:	Clinical Laboratory Sciences Department
College:	College of Applied Medical Sciences
Institution:	Taif University

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A. Course Identification

1. Credit hours: 3 Hours (2 T + 1 P)
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 5 th Level/ Second Year
4. Pre-requisites for this course (if any): None
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3 hours /week= 30 hours/semester	50%
2	Blended	None	0%
3	E-learning	None	0%
4	Distance learning	None	0%
5	Other (Laboratory)	3 hours /week= 30 hours/semester	50%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	N/A
4	Others (specify)	NA
	Total	60 Hours

B. Course Objectives and Learning Outcomes

<p>1. Course Description</p> <p>This course provides the ground knowledge and skills to provide the student with a broad understanding of the immune system and its functions. Topics include activation and regulation of innate and adaptive immunity and the molecular basis of antigen specificity. Moreover, the course will also cover antibody structure and interaction with antigens, cytokines types, effects and complement activation pathways.</p>
<p>2. Course Main Objective</p> <p>To know the basic immunological mechanisms in human body and analyze the body response as part of human defense system.</p>

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding:	
1.1	Identify innate and acquired immunity, the cellular basis of the immune response in normal and abnormal conditions.	K1
1.2	Recognize the significance of immunological markers, antigen-antibody reactions, and appropriate equipment for analysis.	K2
2	Skills:	
2.1	Assess the suitability of specimen for each immunological method and the appropriate instrumentation requirement.	S1
2.2	Perform various laboratory procedures in immunological context in a safe and effective manner.	S1
2.3	Interpret laboratory data and correlate it with the clinical manifestation of the diseases.	S2
3	Values:	
3.1	Demonstrate proper ethics and professional attitude in immunological setting.	V1

C. Course Content (Theory)

No	List of Topics	Contact Hours
1	Introduction to Host Immune Defenses (Presentation)	3
2	Lymphatic System (Presentation)	3
3	Innate and Acquired Immunity (Lecture Notes: Immunology/Chapter1; Pages 3-51)	3
4	The Complement System (Presentation)	3
5	Cytokines (Presentation)	3
6	Cellular Basis of The Immune Response (Lecture Notes: Immunology/Chapter9; Pages 272-290)	3
7	The Major Histocompatibility Complex and Antigen Presentation to T Cells (Presentation)	3
8	Cell-Mediated Immunity (Lecture Notes: Immunology/Chapter 7; Pages 187-217)	3
9	Humoral Immunity, the Genetic Basis of Antibody Structure and Function (Presentation)	3
10	Antigens, Immunogens, and Antigen–Antibody Interactions (Lecture Notes: Immunology/Chapter 3 and 5; Pages 69 -96 and 167- 186)	3
Total		30

C. Course Content (Practical)

No	List of Topics	Contact Hours
1	Acceptance of request and samples (Lab Manual)	3
2	Introduction of Antigen-Antibody Interactions and Immunodiagnostics (Lab Manual)	3
3	Immuno-agglutination technique and Indirect hemagglutination test (Lab Manual)	3
4	Precipitation technique (Lab Manual)	3
5	ELISA technique and Serodiagnosis of Hepatitis B Virus and Hepatitis C Virus (Lab Manual)	3
6	Serodiagnosis of Human Retrovirus (Lab Manual)	3
7	Serological Diagnosis of Autoimmune Disorders and TORCH screening test (Lab Manual)	3
8	Immunofluorescent technique (Lab Manual)	3
9	Introduction of Flow cytometry and Its Application In Serology Lab (Lab Manual)	3
10	Preparation and Staining of PBMC for FACS Analysis (Lab Manual)	3
Total		30

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	Identify innate and acquired immunity, the cellular basis of the immune response in normal and abnormal conditions.	• Lectures	• Written Exam
1.2	Recognize the significance of immunological markers, antigen-antibody reactions, and appropriate equipment for analysis.	• Lectures • Practical Sessions	• Written Exam • Lab Report

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.0	Skills		
2.1	Assess the suitability of specimen for each immunological method and the appropriate instrumentation requirement.	<ul style="list-style-type: none"> Practical Session 	<ul style="list-style-type: none"> Practical Exam
2.2	Perform various laboratory procedures in immunological context in a safe and effective manner.	<ul style="list-style-type: none"> Practical Session 	<ul style="list-style-type: none"> Practical Exam Lab Report
2.3	Interpret laboratory data and correlate it with the clinical manifestation of the diseases.	<ul style="list-style-type: none"> Lectures Problem-Based Learning 	<ul style="list-style-type: none"> Written Exam OSPE
3.0	Values		
3.1	Demonstrate proper ethics and professional attitude in immunological setting.	<ul style="list-style-type: none"> Group Discussion 	<ul style="list-style-type: none"> Activities

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid-Term Exam	5 th week	15%
2	Activity	Throughout	5%
3	Practical report	Throughout	10%
4	Final Practical Exam	11 th week	20%
5	Final Exam	12 th /13 th week	50%
	Total		100%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

- Course instructors are available for individual consultation in their free time. They are usually full-time permanent members present on-campus from 8:00 am to 2:30 pm on all working days. Appointments can be made in person with the instructor through email etc. Days and time availability of each instructor are posted on their doors. Course instructors provide a range of academic and course management advice including course planning and its progression.
- Each student at the department of Clinical Laboratory Sciences has an academic adviser who is available for individual consultation and guidance. Appointments can be made in person with the instructor through email etc. Days and time availability of each adviser are posted on their doors. The academic adviser can provide support with time management, exam preparation, clarification of subject requirements, feedback on performance and dealing with personal issues as well.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	<ul style="list-style-type: none">• Todd, I., Spickett, G., & Fairclough, L. (2015). Immunology (7th ed.). Wiley-Blackwell Publishers. ISBN: 978-1-118-45164-9
Essential References Materials	<ul style="list-style-type: none">• None
Electronic Materials	<ul style="list-style-type: none">• Saudi Digital Library, PubMed and Google Scholar
Other Learning Materials	<ul style="list-style-type: none">• Journals and Articles

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, Blackboard and A/V
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	<ul style="list-style-type: none"> • ELISA • Flowcytometry • Class 2 Biological Safety Cabinets • Antibodies and Immunological Kits.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student's feedback on effectiveness of teaching.	<ul style="list-style-type: none"> • Students 	<ul style="list-style-type: none"> • Indirect: Questionnaire Survey at the end of each semester.
Quality of learning resources (laboratory and library) related to each course.	<ul style="list-style-type: none"> • Students • Staff members 	<ul style="list-style-type: none"> • Indirect: Questionnaire Survey at the end of each semester related to learning resources.
Evaluation of teaching	<ul style="list-style-type: none"> • Peer evaluators 	<ul style="list-style-type: none"> • Indirect: Peer evaluation
Evaluation of exam quality and assessment.	<ul style="list-style-type: none"> • Exam committee • Students 	<ul style="list-style-type: none"> • Direct: Exam paper/ exam blueprint review • Indirect: Questionnaire Survey at the end of each semester.
Achievement of course learning outcomes	<ul style="list-style-type: none"> • Course Coordinators • Development and accreditation committee 	<ul style="list-style-type: none"> • Direct: Student's Performance assessed through item analysis and rubrics.

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department Council
Reference No.	Meeting Number 11
Date	19/05/2022



Course Specifications

Course Title:	Principles of Anatomy and Histology
Course Code:	373219-3
Program:	Bachelor in Clinical Laboratory Sciences; Level-6 (Program Code: 373000)
Department:	Clinical Laboratory Sciences Department
College:	College of Applied Medical Sciences
Institution:	Taif University

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A. Course Identification

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2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 5 th Level/ Second Year
4. Pre-requisites for this course (if any): Medical Biology 2 (370211-4)
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3 hours /week= 30 hours/semester	50%
2	Blended	None	0%
3	E-learning	None	0%
4	Distance learning	None	0%
5	Other (Laboratory)	3 hours /week= 30 hours/semester	50%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	N/A
4	Others (specify)	NA
	Total	60 Hours

B. Course Objectives and Learning Outcomes

<p>1. Course Description This course details the anatomical and histological study of the human body structure and the relationship between its parts.</p>
<p>2. Course Main Objective Recognize the normal anatomy and histology of various regions of the human body (different tissues, organs and systems), describe and identify the normal structure of cells, tissues, organs and systems and their relationship.</p>

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Recognize normal tissue types of the human body.	K1
1.2	Explain normal anatomical structure of all body systems.	K1
2	Skills:	
2.1	Interpret important anatomical and histological features in all body systems.	S2
2.2	Assess gross morphological anatomy of body systems.	S2
2.3	Demonstrate effective communication and problem-solving skills in relation to the course.	S4
3	Values:	
3.1	Display professional and responsible attitude while performing tasks related to the course.	V1

C. Course Content (Theory)

No	List of Topics	Contact Hours
1	Introduction (Presentation) <ul style="list-style-type: none"> Define anatomy as a basic medical science. Describe various common anatomical planes. Describe various common positions. Define histology and differentiate between different types of tissue. 	3
2	Skin & Fasciae (Presentation) <ul style="list-style-type: none"> Describe briefly the skin and its components. Recognize different types of epithelial and connective tissues Define different types of fasciae 	3
3	Bones (Presentation) <ul style="list-style-type: none"> Define bone as a living tissue. Describe briefly different types of bones. Enumerate different parts of the body skeleton. 	3
4	Digestive system (Presentation) <ul style="list-style-type: none"> Identify component parts of the digestive system and its histological pattern. Describe general features of mouth, teeth, tongue and salivary glands Describe briefly different parts of pharynx, stomach and intestine Describe shape, position and main relations of the liver, gall bladder and pancreas. 	3

5	Respiratory system (Presentation) <ul style="list-style-type: none"> Identify component parts of the respiratory system and its lining epithelium. Describe the location of the nasal cavities. Describe briefly main components of the larynx. Name the air passage of the tracheobronchial tree in descending order of size. Describe the location and general features of the right and left lungs. Describe parts, boundaries and reflections of the pleura. 	3
6	Cardiovascular system (Presentation) <ul style="list-style-type: none"> Identify chambers, valves and main vessels that attached to the heart. Describe the pericardium. Describe the blood supply of the heart. Identify the principle blood vessels of the body. Describe the histological features of the cardiac muscle. Describe the histological pattern of the blood vessels. 	3
7	Urinary system (Presentation) <ul style="list-style-type: none"> Describe position & gross anatomical features of the kidney. Identify the course of the ureter. Describe the position, shape and main relations of the urinary bladder. Identify the male urethra. Describe the different epithelial lining of the different parts of the urinary system. 	3
8	Male genital system (Presentation) <ul style="list-style-type: none"> Identify component parts of the male genital system. Describe general structure of the testis. Describe briefly the prostate gland. Identify the course of the spermatic cord. 	3
9	Female genital system (Presentation) <ul style="list-style-type: none"> Identify component parts of the female genital system and its histological pattern. Describe position, parts and relations of the uterus. Describe briefly the ovaries, uterine tubes and vagina. 	3
10	Nervous system and Endocrine system (Presentation) <ul style="list-style-type: none"> Classify the nervous system anatomically into central and peripheral. Classify the nervous system functionally into somatic and visceral (autonomic). Identify different parts of the brain. Demonstrate general structure of the cerebral hemisphere. Describe the general plan of the cerebellum and spinal cord. Identify different types of glial cells and structures of neurons Describe different layers of the meninges. List the cranial nerves and define their main functions. 	3
Total		30

Course Content (Practical)

No	List of Topics	Contact Hours
1	Introduction (Lab Demonstration)	3
2	Skin & Fasciae (Lab Demonstration)	3
3	Bones (Lab Demonstration)	3
4	Digestive system (Lab Demonstration)	3
5	Respiratory system (Lab Demonstration)	3
6	Cardiovascular system (Lab Demonstration)	3
7	Urinary system (Lab Demonstration)	3
8	Male genital system (Lab Demonstration)	3
9	Female genital system (Lab Demonstration)	3
10	Nervous system and Endocrine system (Lab Demonstration)	3
Total		30

A. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	Recognize normal tissue types of the human body.	<ul style="list-style-type: none"> Lectures 	<ul style="list-style-type: none"> Written Exam
1.2	Explain normal anatomical structure of all body systems.	<ul style="list-style-type: none"> Lectures 	<ul style="list-style-type: none"> Written Exam Assignments
2.0	Skills		
2.1	Interpret important anatomical and histological features in all body systems	<ul style="list-style-type: none"> Lectures Practical Sessions 	<ul style="list-style-type: none"> Written Exams OSPE
2.2	Assess gross morphological anatomy of body systems.	<ul style="list-style-type: none"> Lectures Practical Sessions 	<ul style="list-style-type: none"> Written Exams OSPE
2.3	Demonstrate effective communication and problem-solving skills in relation to the course.	<ul style="list-style-type: none"> Group Discussion 	<ul style="list-style-type: none"> Scientific Activities
3.0	Values		
3.1	Display professional and responsible attitude while performing tasks related to the course.	<ul style="list-style-type: none"> Practical Sessions 	<ul style="list-style-type: none"> Practical Exam

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid-Term Exam	5 th week	15%
2	Activity	Throughout	5%
3	Practical report	Throughout	10%
4	Final Practical Exam	11 th week	20%
5	Final Exam	12 th /13 th week	50%
	Total		100%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

B. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

- Course instructors are available for individual consultation in their free time. They are usually full-time permanent members present on-campus from 8:00 am to 2:30 pm on all working days. Appointments can be made in person with the instructor through email etc. Days and time availability of each instructor are posted on their doors. Course instructors provide a range of academic and course management advice including course planning and its progression.
- Each student at the department of Clinical Laboratory Sciences has an academic adviser who is available for individual consultation and guidance. Appointments can be made in person with the instructor through email etc. Days and time availability of each adviser are posted on their doors. The academic adviser can provide support with time management, exam preparation, clarification of subject requirements, feedback on performance and dealing with personal issues as well.

C. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	<ul style="list-style-type: none">• Snell's clinical anatomy, 10th Edition, Lippincott Williams and Wilkins Publishers, 2018, ISBN-10:1496345649• Last's anatomy, 12th Edition, Chummy S. Sinnatamby, 2011, Churchill-Livingstone Publishers. ISBN-10:0702033944• Junqueira, L. Carneiro, J., Basic Histology; 12th edition, McGraw-Hill Medical Division, ISBN-10:0071271902
Essential References Materials	<ul style="list-style-type: none">• None
Electronic Materials	Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar) <ul style="list-style-type: none">• https://www.pinterest.com/RYourPower/show-me-whatcha-working-with-muscles-anatomy-etc/• http://www.innerbody.com• http://www.anatomyzone.com/3d_atlas
Other Learning Materials	<ul style="list-style-type: none">• Saudi Digital Library

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, Blackboard and A/V
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	<ul style="list-style-type: none"> Histology slides teaching sets for normal tissue types Cadaver, plastination models or plastic models show human body structure

D. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student's feedback on effectiveness of teaching.	<ul style="list-style-type: none"> Students 	<ul style="list-style-type: none"> Indirect: Questionnaire Survey at the end of each semester.
Quality of learning resources (laboratory and library) related to each course.	<ul style="list-style-type: none"> Students Staff members 	<ul style="list-style-type: none"> Indirect: Questionnaire Survey at the end of each semester related to learning resources.
Evaluation of teaching	<ul style="list-style-type: none"> Peer evaluators 	<ul style="list-style-type: none"> Indirect: Peer evaluation
Evaluation of exam quality and assessment.	<ul style="list-style-type: none"> Exam committee Students 	<ul style="list-style-type: none"> Direct: Exam paper/ exam blueprint review Indirect: Questionnaire Survey at the end of each semester.
Achievement of course learning outcomes	<ul style="list-style-type: none"> Course Coordinators Development and accreditation committee 	<ul style="list-style-type: none"> Direct: Student's Performance assessed through item analysis and rubrics.

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

E. Specification Approval Data

Council / Committee	Department Council
Reference No.	Meeting Number 11
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