



Academic Description of Postgraduate Studies MSc/ Microbiology



The educational program is a well-planned set of courses that includes procedures and experiences arranged in the form of an academic syllabus. Its main goal is to enhance and develop the skills of graduates. The program is reviewed and evaluated annually through internal or external audit procedures, including programs like the External Examiner Program. The academic program description is a summary of the main features of the program and its courses. It outlines the skills students are working to develop, based on the program's goals. This description is crucial because it serves as the primary component for obtaining program accreditation. It is written collaboratively by the teaching staff under the supervision of scientific committees in the respective academic departments.

In this context, we can only emphasize the importance of writing clear and detailed academic program and course descriptions to ensure the effective functioning of the educational process.

Postgraduate Studies Curriculum for the Department of Biology / MSc /Microbiology

First Semester

No.	Subject	Credit Hours	Units
1	Bacterial Systematics	2	2
2	Advanced Microbial Physiology	2	2
3	Advanced Classification of Fungi	2	2
5	Biostatistics	1	1
6	Advanced Biochemistry-1	2	2
7	Advanced Virology	2	2
8	English	2	2

Total: 15 hours / 15 units.

Second Semester

No.	Subject	Credit Hours	Units
1	Advanced Pathogenic Bacteriology	2	2
2	Advanced Food & Industrial Microbiology	2	2
3	Advanced Immunology	2	2
4	Medical Parasitology	2	2
5	Medical Mycology	2	2
7	Research Curriculum	2	2

Total: 13 hours / 13 units

First Semester

Bacterial Systematics

Course Name:	
Bacterial Systematics	
Course Code:	
Semester / Year:	
First semester	
Description Preparation Date:	
2025-2026	
Available Attendance Forms:	
Mandatory attendance	
Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2unit	
Course administrator's name (mention all, if more than one name)	
Name	Prof. Dr. Sareaa Maseer Gatya Al-Mayahie
:	
Email	salmayahie@uowasit.edu.iq
:	
Course Objectives	
1-	To have an idea about history of taxonomy and discovery of bacteria and

	its place into different taxonomic systems
2-	Role of phylogeny in classification of prokaryotes and eukaryotes
3-	To understand problems in bacterial taxonomy
4-	To differentiate Prokaryotes from Eukaryotes
5-	To define classification, identification, species, genus, and binomial nomenclature
6-	Differentiating different terms of Classification
7-	Student will be able to describe the fundamental concepts and terminology of taxonomic organization and parameters used in classifying bacteria, and the molecular analytic approaches used to classify diverse bacteria
8-	To apply the principles of numerical taxonomy to identify bacteria to species level
9-	Student will be able to discuss about the use of rRNA analysis as a means of developing phylogenetic relationships
10-	To learn how to use Berge's Manual of Systematic Bacteriology
11-	Understand general characters of different prokaryotic phyla

Teaching and Learning Strategies

1-	Classroom education through theoretical and practical lectures.
2-	Preparing scientific reports and research

Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2 hours	An introduction to taxonomy	History	Presentat ion by scientific power point program Discussio ns including slides, scientific videos and pictures and use of blackboa	Scientific discussio ns and reasonabl e thinking during the lecture time. Quizzes and monthly exam

				rd when in need	
2-	2 hours	Theories of evolution, discovery of archaea	The three domains	=	=
3-	2 hours	Bacteria& Archaea	Procaryotic Domains	=	=
4-	2 hours	Taxonomic ranks & phylogenetic definition of species in bacteria	Classification of Procaryotic Organisms and the Concept of bacterial Speciation	=	=
5-	2 hours	Universal & traditional Identification schemes of a pure culture. DNA Fingerprinting	Identification of Prokaryotes	=	=
6-	2 hours	Criteria for Classifying Bacteria: biochemical and molecular	Methods of Classifying and identifying Microorganisms -1	=	=
7-	2 hours	Criteria for Classifying Bacteria: biochemical and molecular	Methods of Classifying and identifying Microorganisms -2	=	=
8-	2 hours		1st. monthly exam		
9-	2 hours	Definition, logical steps	Numerical Taxonomy-1	=	=
10-	2 hours	Examples of numerical taxonomy	Numerical Taxonomy-2	=	=
11-	2 hours	Definition & genotypic and	Polyphasic Taxonomy	=	=

		Phenotypic information incorporated into polyphasic taxonomic studies			
12-	2 hours	The History and Significance of Bergey's Manual. List with brief description of prokaryotic phyla-1	The Prokaryotic Phyla-1	=	=
13-	2 hours	List with brief description of prokaryotic phyla-2	The Prokaryotic Phyla-2	=	=
14-	2 hours	Discussion of reports presented by the students about bacterial families within each phylum	Students' presentations	=	=
15-	2 hours		2nd. Monthly exam		

Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

Learning and Teaching Resources

Required textbooks (curricular books, if any)	[1]
	[2]
	[3]
	[4]
	[5]
Main references (sources)	[1] Berge's Manual of Systematic Bacteriology, 2nd. Ed., vol.1
	[2] Berge's Manual of Systematic Bacteriology, 2nd. Ed.,vol.2
	[3] Berge's Manual of Systematic Bacteriology, 2nd. Ed., vol.3
	[4] Berge's Manual of Systematic Bacteriology, 2nd. Ed., vol.4
	[5] Berge's Manual of Systematic Bacteriology, 2nd. Ed., vol.5
Recommended books and references (scientific journals, reports...)	[1] International Journal of Systematic Bacteriology
	[2] General microbiology books
	[3] Medical Microbiology books
	[4] Clinical microbiology books
	[5]
Electronic References, Websites	[1] U-tube scientific videos
	[2] Internet platforms for scientific videos and pictures

Advanced microbial physiology

Course Name:	
Advanced microbial physiology	
Course Code:	
Semester / Year:	
First semester	
Description Preparation Date:	
2025-2026	
Available Attendance Forms:	
Mandatory Attendance	
Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2unit	
Course administrator's name (mention all, if more than one name)	
Name:	Prof. Dr. Zainab Nashaat Al-Saadi
Email:	zalsaady@uowasit.edu,iq
Course Objectives	
1-	Theoretical lectures and group discussions for the purpose of facilitating the explanation of material, addition to use of diagrams and illustrations.
2-	The students should gain fundamental knowledge on various aspects of pathogenic bacteria and should get acquainted with the infrastructure required for working with pathogens and to also acquire knowledge about various safety measures.
Teaching and Learning Strategies	
1-	Classroom education through theoretical lectures
2-	Preparing scientific reports and research
Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2 hours	Introduction and History , principles of microbial physiology	Introduction	PowerPoint program	Quizzes and monthly exam
2-	2 hours	Bacterial structure and morphology	Chemical and physical properties	PowerPoint program	Quizzes, discussions and monthly exam
3-	2 hours	Cell composition	Cell wall	PowerPoint program Use of white board when in need	Oral quizzes , Quizzes and monthly exam
4-	2 hours	Cell composition	Cell membrane	PowerPoint program	Quizzes and monthly exam
5-	2 hours	Cell composition	Intracellular structures	PowerPoint program	Quizzes and monthly exam
6-	2 hours	Membrane transport	Passive and active transport systems	PowerPoint program	Oral quizzes ,discussions , Quizzes and monthly exam
7-	2 hours	Growth and cell division	growth phases and generation	PowerPoint program	Quizzes and

			time		monthly exam
8-	2 hours	Stress Responses	Influencing factors on cell growth	PowerPoint program scientific videos	Quizzes and monthly exam
9-	2 hours	Metabolism	Respiration , oxidation and reduction reactions	PowerPoint program scientific videos	Quizzes and monthly exam
10-	2 hours	Metabolism	Photosynthesis , fermentation	PowerPoint program scientific videos	Quizzes and monthly exam
11-	2 hours	Genomics contents	DNA , RNA types	PowerPoint program scientific videos	Quizzes and monthly exam
12-	2 hours	Horizontal gene transfer	Transformation ,transduction and conjugation	PowerPoint program scientific videos	Quizzes and monthly exam
13-	2 hours	Nutritional classification of bacteria	Nutrition patterns ,phototrophs ,chemotrophsetc	PowerPoint program Use of white board when in need	Quizzes and monthly exam
14-	2 hours	Calculations	Generation time and no. of cells	PowerPoint program Use of white	Quizzes and monthly exam

				board when in need	
15-	2 hours	Cell to cell communication	Quorum sensing and biofilm formation	PowerPoint program scientific videos	Quizzes and monthly exam

Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

Learning and Teaching Resources

Required textbooks (curricular books, if any)	[1]
	[2]
	[3]
	[4]
	[5]
Main references (sources)	[1] Lippincott's Illustrated Reviews: Microbiology
	[2] Prescott,Harley, and Klein's Microbiology
	[3] Jawetz, Melnick, & Adelberg's Medical Microbiology
	[4]
	[5]
Recommended books and references (scientific journals, reports...)	[1] Review of Medical Microbiology and Immunology ,Warren Levinson

[1]

Advanced fungal taxonomy

Course Name:	
Advanced fungal taxonomy	
Course Code:	
Semester / Year:	
First semester	
Description Preparation Date:	
2025-2026	
Available Attendance Forms:	
Mandatory Attendance	
Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2unit	
Course administrator's name (mention all, if more than one name)	
Name:	Prof. Dr. Mohammed jbaier
Email:	mjbaier@uowasit,edu,iq
Course Objectives	
1-	To teach fungal identification skills in the context of evolutionary biology and conservation theory and practice
2-	Study of fungal taxonomy with the study of nomenclature terms and definitions, systematic literature, taxonomic procedures, use of identification keys, diagnostic morphological features of fungal classes with brief information about their sexual and asexual fruiting bodies.
3-	To acquire proficiency in application and understanding of mycological terminology
4-	
5-	
Teaching and Learning Strategies	
1-	lectures, seminars, discussion groups
2-	Homework, Report and Assignments, Projects, Presentation
3-	

Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2 hours	Knowledge of morphology and structure of fungi	General introduction	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
2-	2 hours	Knowledge about the history of taxonomy	History aspects of fungal taxonomy	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
3-	2 hours	Knowledge about the taxonomic methods	Traditional and modern taxonomic methods	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
4-	2 hours	Knowledge of the levels of classification	Levels of classification	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
5-	2 hours	Knowledge about of different systems in taxonomy	Taxonomic System	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
6-	2 hours	Knowledge of the types of spores and sporocarps of fungi	Spores and Sporocarp of fungi	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
7-	2 hours	First exam	First exam		

8-	2 hours	Knowledge of the types of spore formation	Types of conidiogenesis	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
9-	2 hours	Knowledge of the types of keys in classification	Classification keys of fungi	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
10-	2 hours	Knowledge about the criteria that use in classification of fungi	Criteria that use in taxonomy	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
11-	2 hours	Knowledge about the classification of molds	Classification of molds	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
12-	2 hours	Knowledge about the classification of yeast	Classification of yeast	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
13-	2 hours	Knowledge about the anamorph and teleomorph	Anamorph and teleomorph	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
14-	2 hours	Knowledge about the specific and important terms	Mycological terms in mycology	PowerPoint White board Microscope	Quizzes, Discussions and monthly exam
15-	2 hours	Second Exam	Second Exam		

Course Evaluation

Daily preparation, oral exam, written exams, reports etc

Learning and Teaching Resources	
Required textbooks (curricular books, if any)	[1] Michael J. Carlile, Sarah C. Watkinson. 2000. The Fungi. 2nd Edition
	[2]
	[3]
	[4]
	[5]
Main references (sources)	[1] John Webster , Roland Weber. 2007. Introduction to Fungi 3rd Edition. 867 pages.
	[2] Constantine J. Alexopoulos, Charles W. Mims, Meredith M. Blackwell. 1996. Introductory Mycology, 4th Edition, 880 pages.
	[3] Merz, W. G. and Hay, R. J. 2005 . Medical mycology. 10th Edition .ASM Press
	[4]
	[5]
Recommended books and references (scientific journals, reports...)	[1] Journal of mycology
	[2] Sarah Kidd, Catriona Halliday, Helen Alexiou ¹ and David Ellis. Descriptions of Medical Fungi. 2016. 3th.267 pages
	[3]
	[4]
	[5]
Electronic References, Websites	[1] https://libguides.tcu.edu/environmental-science/websites

Biostatistics

Course Name:	
Biostatistics	
Course Code:	
Semester / Year:	
Semester 1	
Description Preparation Date:	
2025-2026	
Available Attendance Forms:	
Actual mandatory attendance	
Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2 units	
Course administrator's name (mention all, if more than one name)	
Name:	Assist Prof Dr. Faik Mayah
Email:	fmayah@uowasit.edu.iq
Course Objectives	
1-	Student be able to discuss and explain what biostatistics is and how it is used in the field of Biology
2-	Student be able to understand the common statistical techniques and terminology used in Biological studies.
3-	Student be able to use and understand the principal numeric and graphical techniques to display and summarize Biological data.
4-	Qualifying and training the student and teaching him the central tendency measures for both grouped and ungrouped data.
5-	Qualifying and training the student and teaching him the measurements of variation.
6-	Demonstrate a good understanding of measures of correlations
7-	Qualifying and training the student and teaching him the statistical distributions (Normal and Binomial distributions).
8-	Qualifying and training the student and teaching him the Confidence intervals and Hypothesis testing

9-	Explain fundamental concepts of estimation and hypothesis testing and be confident when interpreting P values and confidence intervals
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10-

Teaching and Learning Strategies

1-	Explanation and clarification through lectures
2-	Self-education through homework
3-	Solving difficult problems using scientific material
4-	Use of e-learning
5-	
6-	
7-	
8-	
9-	
10-	

Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2	Definition of statistics and biostatistics with examples and Population and samples and methods of sampling; Central Tendency measurements (Mean, Median, and Mode)	Descriptive Statistics: Chapter 1	Lecturebased instruction	
2-	2	Display biological data as Pie Charts, Bar Graphs, Histograms, Stemand-Leaf Plots and	Descriptive Statistics: Chapter 2	Lecturebased instruction	Assignment

		Boxplot with analysis.			
3-	2	Measurements of variations (Mean deviation, standard Deviation and Variance); Case Study: effects of Lead exposure on neurological and Psychological Function in Children	Descriptive Statistics: Chapter 2	Lecturebased instruction	
4-	2	Definition of Probability; Some Useful Probabilistic notation; The Multiplication Law of Probability; The Addition Law of Probability; Conditional Probability	Probability: Chapter 3	Lecturebased instruction	Assignment
5-	2	Bayes' Rule and Screening tests; Bayesian inference; ROC Curves; Prevalence and incidence	Probability: Chapter 3	Lecturebased instruction	

6-	2	Random variables; The Probability Mass Function for a discrete Random variable; The expected value of a discrete Random variable; The variance of a discrete Random variable; The Cumulative distribution Function of a discrete Random variable; Permutations and Combinations.	Discrete Probability Distributions: Chapter 4	Group learning	Report
7-	2	Test			Examination
8-	2	The Binomial distribution; expected value and variance of the Binomial distribution; The Poisson distribution; Computation of Poisson Probabilities; Expected value and variance of the Poisson distribution; Poisson Approximation to the Binomial distribution.	Discrete Probability Distributions: Chapter 4	Lecture based instruction	

9-	2	The normal distribution; Properties of the Standard normal distribution; Linear Combinations of Random variables; Normal Approximation to the Binomial distribution; Normal Approximation to the Poisson distribution.	Continuous Probability Distributions: Chapter 5	Lecturebased instruction	Assignment
10-	2	The Relationship Between Population and Sample; Random-number tables; Randomized Clinical trials; Estimation of the Mean of a distribution; Case Study: effects of tobacco Use on BoneMineral density (BMd) in Middle-Aged Women; Estimation of the variance of a distribution; Estimation for the Binomial distribution; Estimation for the Poisson distribution; One-Sided CIs.	Estimation: Chapter 6	Lecturebased instruction	

11-	2	One-Sample test for the Mean of a normal distribution: one-Sided Alternatives; OneSample test for the Mean of a normal distribution: twoSided Alternatives; The Power of a test; Sample-Size determination; The Relationship Between hypothesis testing and Confidence intervals; Bayesian inference.	Hypothesis Testing: OneSample Inference: Chapter 7	Lecturebased instruction	Assignment
12-	2	One-Sample chi square test for the variance of a normal distribution; OneSample inference for the Binomial distribution; OneSample inference for the Poisson distribution.	Hypothesis Testing: OneSample Inference: Chapter 7	Lecturebased instruction	

13-	2	The Paired t test; Interval estimation for the Comparison of Means from two Paired Samples; Two-Sample t test for independent Samples with equal variances; Interval estimation for the Comparison of Means from two independent Samples (equal variance Case); Testing for the equality of two variances; TwoSample t test for independent Samples with Unequal variances.	Hypothesis Testing: TwoSample Inference: Chapter 8	Group learning	Report
14-	2	Case Study: effects of Lead exposure on neurologic and Psychological Function in Children; The treatment of outliers; Estimation of Sample Size and Power for Comparing two Means; Sample-Size estimation for Longitudinal Studies.	Hypothesis Testing: TwoSample Inference: Chapter 8	Lecturebased instruction	
15-	2	Test			Examination
Course Evaluation					

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc The final exam is worth 60% of the total grade and other 40% is divided into 30% for two tests (each 15 marks) and 8 marks for participation, activities and homework and 2 marks for attendance.

Learning and Teaching Resources

Required textbooks (curricular books, if any)	[1] Bernard Rosner, Fundamentals of Biostatistics, Seventh Edition, Duxbury Press, 2011. ISBN-13: 978-0-538-73349-6.
	[2]
	[3]
	[4]
	[5]
Main references (sources)	[1]
	[2]
	[3]
	[4]
	[5]
Recommended books and references (scientific journals, reports...)	[1]
	[2]
	[3]
	[4]
	[5]
Electronic References, Websites	[1]
	[2]
	[3]
	[4]
	[5]

Biochemistry

1. Course Name:		Biochemistry				
2. Course Code:						
3. Semester/Year:		Semester 1				
4. Description Preparation Date:		2025-2026				
5.Available Attendance Forms:		Theoretical				
6.Number of Credit Hours (Total)/Number of Unit s (Total):		30 hours / 2unit				
7.Course administrator's name (mention all,if more than one name)						
Name: Dr. Suhad Falih Hasson Alomari						
8. Course Objectives						
Course Objectives						
9. Teaching and Learning Strategies						
Strategy	ectures and discussions on advanced protein chemistry The course includes l and different protein structures. Studying the effect of changes in protein structure and its relationship to diseases and its impact on genetic mutations. Identifying the techniques used to separate and estimate proteins and knowing their specifications to increase students' information and increase their skills in applied fields. Explaining enzymes and their .kinetics as one of the most important proteins in the body					
10. Course Structure						
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method	
1	2 hours	Introduction About the protein chemistry	Introduction, Classification of proteins in different methods	Data show		
2	2hours	Protein Structure	Amino acids , (definition,structur e,	Data show	Quizzes and monthly exam.	

			properties,classification,analysis), Peptide, polypeptide,proteins		
3	2 hours	The order of protein structure	Primary(sequence), Secondary(local foldind), tertiary(overall folding), and quaternary(multi chains associations).	Data show	Quizzes and monthly exam.
4	2hours	Correlation between protein structure & some diseases.	Several neurologic & heamatological diseases result from altered protein structure.	Data show	Quizzes and monthly exam.
5	2 hours	Protein characterization	Determination of amino acids composition & sequence of protein by different reactions	Data show	Quizzes and monthly exam.
6	2 hours	Techniques in protein Purification &protein analysis	Protein extraction,Protein purification.	Data show	Quizzes and monthly exam.
7	2 hours	Explain the purification method	Differential precipitation, gel filtration Chromatography.	Data show	Quizzes and monthly exam.
8	2 hours		Reversed Phase HPLC, Affinity chromatography, ion exchange chromatography,	Data show	Quizzes and monthly exam.

9	2 hours	General Technique in biochemistry	Spectrophotometry (method of using & application), Centerfuge.	Data show	Quizzes and monthly exam.
10	2 hours	Advance analytical technique in protein determination	Electrophoresis (basic concepts , definitions,& theory, types) & Immun-fixation.	Data show	Quizzes and monthly exam.
11	2 hours	Introduction about the Enzymes	General Knowledge of enzymes,nomenclature, Properteisof enzymes.	Data show	Quizzes and monthly exam.
12	2 hours	Enzyme Kinetics	How enzymes work, mechanisms of enzyme catalysis, factors affecting reaction velocity.	Data show	Quizzes and monthly exam.
13	2 hours		Clinical application of enzyme reactions	Data show	Quizzes and monthly exam.
14	2 hours	Calculation in biochemistry	Quantification of total protein,	Data show	Quizzes and monthly exam.
15	2 hours	Exam	Exam	Data show	Quizzes and monthly exam.

Advanced virology

Course Name:		Advanced virology			
Course Code:					
Semester / Year:		Semester	Semester 1		
Description Preparation Date:					
2025-2026					
Available Attendance Forms:					
Number of Credit Hours (Total) / Number of Units (Total)					
30 hours / 2unit					
Course administrator's name (mention all, if more than one name)					
Nam:		Professor :Khairi Jameel Wahed			
Emai:		Khairi2009jamel@gmail.com			
Course Objectives					
1-	Knowing the types of viruses prevalent in the world and their effects on humans and animals				
2-	Study of the pathogenesis of viruses and methods of prevention of infection and knowledge of the vaccines available against these viruses				
Teaching and Learning Strategies					
1-	Classroom education through theoretical lectures				
2-	Preparing scientific reports and research				
Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluati on method
1-	2 hours	Introduction and History , principles of viruses	Introduction	PowerPoint program	Quizzes and monthly exam

2-	2 hours	Molecular Structure of Viruses	Virus components	PowerPoint program	Quizzes, discussions and monthly exam
3-	2 hours	Classification System	Type of Classification Virus	PowerPoint program Use of white board when in need	Oral quizzes , Quizzes and monthly exam
4-	2 hours	Crimean-Congo Hemorrhagic Fever Virus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program	Quizzes and monthly exam
5-	2 hours	Rotavirus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program	Quizzes and monthly exam
6-	2 hours	Measles virus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program	Oral quizzes ,discussions , Quizzes and monthly exam

7-	2 hours	Human Cytomegalovirus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program	Quizzes and monthly exam
8-	2 hours	Rabies Virus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program scientific videos	Quizzes and monthly exam
9-	2 hours	Hepatitis A Virus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program scientific videos	Quizzes and monthly exam
10-	2 hours	Hepatitis C virus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program scientific videos	Quizzes and monthly exam
11-	2 hours	Influenza A virus	Genome .Epidemiology	PowerPoint	Quizzes

			, Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	program scientific videos	and monthly exam
12-	2 hours	Polio Virus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program scientific videos	Quizzes and monthly exam
13-	2 hours	Japanese Encephalitis (JE) Virus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program Use of white board when in need	Quizzes and monthly exam
14-	2 hours	Human papillomavirus	Genome .Epidemiology , Transmission, Replication, Pathogenesis , Diagnosis , Treatment and Prevention and control of virus	PowerPoint program	Quizzes and monthly exam
15-		Respiratory Syncytial Virus	Genome .Epidemiology , Transmission, Replication,	PowerPoint program	Quizzes and monthly

			Pathogenesis , Diagnosis , Treatment and Prevention and control of virus		exam
Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc					
Learning and Teaching Resources					
Required textbooks (curricular books, if any)	[1] medical virology				
	[2] virology				
	[3]				
	[4]				
	[5]				
Main references (sources)	Nasir, A., Romero-Severson, E., & Claverie, M. (2020). ١. Investigating the Concept and Origin of Viruses. Trends in Microbiology, 28(12), 959-967. https://doi.org/10.1016/j.tim.2020.08.003				
	Mirza, A. Z., Shamshad, H., Osra, F. A., Habeebullah, T. M., & Morad, M. (2020). An overview of viruses discovered over the last decades and drug development for the current pandemic. European Journal of Pharmacology, 890, 173746. https://doi.org/10.1016/j.ejphar.2020.173746				
	Bell, P. J. L. Viral eukaryogenesis: Was the ancestor of the ٢. nucleus a complex DNA virus? Journal of Molecular Evolution 53, 251–256 (2001) doi:10.1007/s002390010215.				
	Wessner, D. R. (2010) The Origins of Viruses. Nature Education ٣. 3(9):37				
	[5]				
Recommended books and references (scientific journals,	[1]				

reports...)	
Electronic References, Websites	[1] https://www.google.com/search?q=https%3A%2F%2Fmicrobenotes.com%2F&oq=h&aqs=chrome.1.69i60j69i59j69i57j35i39j0j46j69i60l2.5842j0j7&sourceid=chrome&ie=UTF-8
	[2]
	[3]
	[4]
	[5]

English

Course Name:	
English	
Course Code:	
Semester / Year:	
First semester	
Description Preparation Date:	
2025-2026	
Available Attendance Forms:	
Mandatory Attendance	
Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2unit	
Course administrator's name (mention all, if more than one name)	
Name:	Assoc. Prof. Dr. Ahmed E. Dhamad
Email:	adhamad@uowasit.edu.iq
Course Objectives	
1-	Offering resources to help students learn how to pronounce English sounds, read, write, and understand the foundational rules of English grammar and vocabulary.
2-	To improve students reading abilities so they can scan a text that has been modified for the main concept, go through it for particular information, and evaluate it for conclusions.
3-	To improve students' listening abilities so they can comprehend and use certain information from the input (within the parameters of Breakthrough level).
4-	To advance students' general proficiency (within the parameters of Breakthrough level) to a point where they are able to use English in their professional and academic environments
5-	
Teaching and Learning Strategies	
1-	In person and group discussion
2-	Homework and Reports
3-	Written tests and tasks
4-	Live Listening and discussion
5-	

Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2	Introduction	General introduction	PowerPoint White board Participation	In person discussion
2-	2	Speaking individually and in groups	Speaking skills	PowerPoint White board Participation	In person and group discussion
3-	2	How to be a good listener	Listening strategies	Videos PowerPoint Participation	In person and group discussion
4-	2	Listening skills	Listening strategies	Videos PowerPoint Participation	In person and group discussion
5-	2	Simple Tenses	Grammar/ Tenses	PowerPoint White board Participation	In person and group discussion; Quiz
6-	2	Polite request and offers	Grammar/ Request	PowerPoint White board Participation	In person and group discussion; Quiz
7-	2	First exam	First exam		
8-	2	Active Voice	Grammar	PowerPoint White board Participation	In person and group discussion; Quiz
9-	2	Passive Voice	Grammar	PowerPoint White board Participation	In person and group discussion; Quiz
10-	2	Countable nouns	Grammar	PowerPoint White board Participation	In person and group discussion; homework
11-	2	Uncountable nouns	Grammar	PowerPoint White board Participation	In person and group discussion; Quiz

12-	2	How to read a scientific paper	Reading	PowerPoint White board Participation	In person and group discussion; homework
13-	2	How to write a paragraph	Writing	PowerPoint White board Participation	In person and group discussion; homework
14-	2	Writing skills	Writing	PowerPoint White board Participation	In person and group discussion; Homework; Quiz
15-	2	Second Exam	Second Exam		

Course Evaluation

Homework, quizzes, reports, oral exam, and written exams

Learning and Teaching Resources

Required textbooks (curricular books, if any)	[1] Understanding and using English grammar 4th edition.
	[2] New Headway 4th Edition Intermediate
	[3] New Headway 4th Edition advanced
Main references (sources)	[1] Teaching English as a Foreign Language
	[2] The Blue Book of Grammar and Punctuation: An Easy-to-Use Guide with Clear Rules, Real-World Examples, and Reproducible Quizzes 12th Edition
Recommended books and references (scientific journals, reports...)	[1] Perfect English Grammar: The Indispensable Guide to Excellent Writing and Speaking
	[2] Advanced English Writing Skills
Electronic References, Websites	[1] British Council: Learn English Online
	[2] TED Talks
	[3] YouTube

Second Semester

Advanced pathogenic bacteriology

Course Name	
Advanced pathogenic bacteriology	
Course Code:	
Semester / Year:	
Second semester	
Description Preparation Date:	
2025-2026	
Available Attendance Forms:	
Mandatory Attendance	
Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2unit	
Course administrator's name (mention all, if more than one name)	
Name:	Prof. Dr. Zainab Nashaat Al-Saadi
Email :	zalsaady@uowasit,edu,iq
Course Objectives	
1-	Theoretical lectures and group discussions for the purpose of facilitating the explanation of material, addition to use of diagrams and illustrations.
2-	The students should gain fundamental knowledge on various aspects of pathogenic bacteria and should get acquainted with the infrastructure required for working with pathogens and to also acquire knowledge about various safety measures.
Teaching and Learning Strategies	
1-	Classroom education through theoretical lectures
2-	Preparing scientific reports and research
Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2 hours	Introduction and History , principles of bacteriology	Introduction	PowerPoint program	Quizzes and monthly exam
2-	2 hours	Medical terms used in medical bacteriology	Medical terminology	PowerPoint program	Quizzes, discussions and monthly exam
3-	2 hours	Medical importance of bacteria	Importance of microbiology	PowerPoint program Use of white board when in need	Oral quizzes , Quizzes and monthly exam
4-	2 hours	Bacterial Virulence factors	virulence	PowerPoint program	Quizzes and monthly exam
5-	2 hours	Bacterial Virulence factors	virulence	PowerPoint program	Quizzes and monthly exam
6-	2 hours	Regulation of virulence factors	virulence	PowerPoint program	Oral quizzes ,discussions , Quizzes and monthly exam
7-	2 hours	Bacterial grouping	classification	PowerPoint program	Quizzes and monthly

					exam
8-	2 hours	Bacterial grouping	classification	PowerPoint program scientific videos	Quizzes and monthly exam
9-	2 hours	How bacteria cause disease	Bacterial disease	PowerPoint program scientific videos	Quizzes and monthly exam
10-	2 hours	Mode of disease transmission and routs of infection	Infection and infectious process	PowerPoint program scientific videos	Quizzes and monthly exam
11-	2 hours	Mode of diseases transmission and routs of infection	Infection and infectious process	PowerPoint program scientific videos	Quizzes and monthly exam
12-	2 hours	Bacterial epidemiology	Epidemiology and nosocomial infection	PowerPoint program scientific videos	Quizzes and monthly exam
13-	2 hours	Antibiotics and drugs	Antibacterial agents	PowerPoint program Use of white board when in need	Quizzes and monthly exam
14-	2 hours	Normal flora of human body	Microbiota	PowerPoint program Use of white board when in need	Quizzes and monthly exam
15-	2 hours	Bio dynamic of	Bacterial	PowerPoint	Quizzes

		disinfection	control	program scientific videos	and monthly exam
Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc					
Learning and Teaching Resources					
Required textbooks (curricular books, if any)	[1]				
	[2]				
	[3]				
	[4]				
	[5]				
Main references (sources)	[1] Lippincott's Illustrated Reviews: Microbiology				
	[2] Prescott, Harley, and Klein's Microbiology				
	[3] Jawetz, Melnick, & Adelberg's Medical Microbiology				
	[4] BERGEY'S MANUAL_ OF Systematic Bacteriology				
	[5]				
Recommended books and references (scientific journals, reports...)	[1] Review of Medical Microbiology and Immunology ,Warren Levinson				
	[2] Antibiotics Current Innovations and Future Trends				
	[3]				
	[4]				
	[5]				
Electronic References, Websites	[1]				

Advanced Food and Industrial Microbiology

Course Name:	Advanced Food and Industrial Microbiology
Course Code:	
Semester / Year:	Semester 2
Description Preparation Date:	2025-2026
Available Attendance Forms:	Actual mandatory attendance
Number of Credit Hours (Total) / Number of Units (Total)	30 hours / 2unit
/	
Course administrator's name (mention all, if more than one name)	
Name	Assist Prof Dr. Jawad Kadhim Isa
:	
Email	jalzubeidy@uowasit.edu.iq
:	
Course Objectives	
1-	Teaching students the basics of food and Industrial microbiology
2-	Acquire theoretical knowledge in the field of food microbiology
3-	acquire practical skills through training in laboratories and research centers.
4-	Teaching students the modern developments of food industrial microbiology
5-	Teaching students the modern developments of food preservation
Teaching and Learning Strategies	
1-	Teaching and learning strategies and methods adopted in implementing the program in general.
2-	Style of thinking and discussion
3-	Practical tests used in laboratories
4-	Teaching through exploratory lecture
5-	Lecture, use of the blackboard, and delivery.
6-	Illustrative presentations (using diagrams, pictures, and educational films) Interactive discussion - Self-education)

Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2	Referred to in the previous axis and each according to the content	A brief history of food and industrial microbiology	A brief history of food microbiology	Daily preparation and oral exam and Discussion
2-	2	=	Daily preparation and oral exam and Discussion	Lecture based instruction	Daily preparation and oral exam and Discussion
3-	2	=	The advanced in sources of food contamination with microorganisms	Daily preparation and oral exam and Discussion	=
4-	2	=	The advanced in General base in food preservation and factors affecting microorganisms	Lecture based instruction	=
5-	2	=	The advanced in Food preservation methods and their effect on microorganisms	The advanced in Food preservation methods and their effect on microorganisms	=
6-	2	=	The advanced in food preservation	Lecture based instruction	=

			methods A- Using high temperature B-Using low temperature		
7-	2	=	The advanced in chemical food preservatives	Lecture based instruction	=
8-	2	=	The advanced in A. Food preservation using irradiation B. Food preservation using heating	Lecture based instruction	=
9-	2	=	The advanced in Microbiology of fruits and vegetables and their products	Lecture based instruction	=
10-	2	=	The advanced in food poisoning and contamination	Lecture based instruction	=
11-	2	=	The advanced in A. Food preservation using drying B. Food preservation using preservatives	Lecture based instruction	=
12-	2	=	Food specification	Lecture based instruction	=
13-	2	=	Downstream processing	Lecture based instruction	=
14-	2	=	Microbial biomass production	Lecture based instruction	=

15-	2	Exam			examination
Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc					
Learning and Teaching Resources					
Required textbooks (curricular books, if any)	[1] Modern Food Microbiology .James M.Jay, Martin J. Loessner,David A.Golden. Seventh Edition. 2007				
	[2] <i>Industrial Microbiology: An Introduction</i> Michael J. Waites , Neil L. Morgan,John S. Rockey andGary Higton © 2001 by Blackwell Science Ltd				
	[3] Modern Industrial Microbiology and Biotechnology,© 2007, Nduka Okafor				
	[4]				
	[5]				
Recommended books and references (scientific journals, reports...)	[1]				
Electronic References, Websites	[1]				

Advanced Immunology

Course Name:	
Advanced Immunology	
Course Code:	
Semester / Year:	
Second semester	
Description Preparation Date:	
2025-2026	
Available Attendance Forms:	
Mandatory attendance	
Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2unit	
Course administrator's name (mention all, if more than one name)	
Name:	Prof. Dr. Sareaa Maseer Gaty Al-Mayahie
Email	salmayahie@uowasit.edu.iq
:	
Course Objectives	
1-	The student will be able to explain the immunological terms.
2-	The student will be able to explain the immune system.
3-	The student will be able to discuss immune response mechanisms.
4-	The student can explain how the immune system discriminates between self, non-self and altered self
5-	The student will have advanced knowledge of the main mechanisms and consequences of inflammation
6-	The student will have a broad knowledge of central processes in innate and adaptive immunity at a cellular and molecular level
7-	The student can explain the basis of immunological tolerance & autoimmunity
8-	The student can outline key events and cellular players governing mucosal immunity
9-	
10-	
Teaching and Learning Strategies	
1-	Classroom education through theoretical and practical lectures
2-	Preparing scientific reports and research
3-	
4-	

5-	
6-	
7-	
8-	
9-	
10-	

Course Structure

We ek	Ho urs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2	How to differentiate terms of immunology. Main properties of innate and adaptive immunity	Introduction to the immune system-1	Presentation by Scientific Power Point program Discussions including slides, scientific videos and pictures.and Use of blackboard when in need	Scientific Discussions and reasonable thinking during the lecture time. Quizzes and monthly exam
2-	2	Cells & tissues of the immune system	Introduction to the immune system-2	=	=
3-	2	Main functions of innate Immunity: • General features and specificity of innate immune responses. • Cellular receptors for microbes and damaged cells	Innate Immunity-1	=	=
4-	2	• Components of innate immunity. • Innate Immune Reactions	Innate Immunity-2	=	=
5-		Antigens recognized by T &	Antigen capture and	=	=

	2	B lymphocytes. • Capture of protein antigens by antigen-presenting cells • Structure and function of major histocompatibility complex molecules	presentation to lymphocytes		
6-	2	• Structure of lymphocyte antigen receptors. • Properties of antibodies and T cell antigen receptors	Antigen recognition in the adaptive immune system	=	=
7-	2	• Lymphocyte development. • Production of diverse antigen receptors.	Development of immune repertoires	=	=
8-	2		1st. monthly exam		
9-	2	• Activation of T lymphocytes by cell-associated antigens • Antigen recognition and Costimulation. • Migration of T lymphocytes in cell-mediated immune reactions	T cell-mediated immunity	=	=
10-	2	Types of T cell-mediated immune reactions. • Development and functions of CD4+ effector T lymphocytes. • Development and functions of CD8+ cytotoxic T lymphocytes. • Resistance of pathogenic microbes to cell-mediated immunity	Effector mechanisms of T cell-mediated immunity	=	=
11-		Activation of B lymphocytes	Humeral immune	=	=

	2	and productio of antibodies. •Functional consequences of B Cell activation by antigen. •Functions of helper T lymphocytes in humoral immune responses. •Regulation of humoral immune responses	responses		
12-	2	• Effector functions of antibodies. • Functions of antibodies at special anatomic sites. • Evasion of humoral immunity by microbes	Effector mechanisms of humoral immunity	=	=
13-	2	• Pathways of complement activation. • Functions of the complement system. • Regulation of complement activation.	The complement system	=	=
14-	2	• Central & peripheral T lymphocyte tolerance. • Central & peripheral B lymphocyte tolerance. • • utoimmunity.	Immunologic al tolerance and autoimmunity	=	=
15-	2		2nd. monthly exam.		

Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

Learning and Teaching Resources

Required textbooks (curricular books, if any)	[1]
	[2]
	[3]
	[4]
	[5]

Main references (sources)	[1] Really Essential Medical Immunology.
	[2] Riott's Essential Immunology
	[3] BASIC IMMUNOLOGY: Functions and Disorders of the Immune System
	[4] Cellular and Molecular Immunology
	[5]
Recommended books and references (scientific journals, reports...)	[1]
Electronic References, Websites	[1] U-tube scientific videos
	[2] Internet platforms for scientific videos and pictures
	[3]
	[4]
	[5]

Medical Parasitology

Course Name:	
Medical Parasitology	
Course Code:	
Semester / Year:	
Semester 2	
Description Preparation Date:	
2025-2026	
Available Attendance Forms:	
Actual mandatory attendance	
Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2 units	
Course administrator's name (mention all, if more than one name)	
Name	Prof. Dr. Abdulkareem Aakool Altamemy
:	
Email	abdulkareem@uowasit.edu.iq
:	
Course Objectives	
1-	To transfer knowledge about the importance of parasites that that infect Human
2-	Enabling the student to acquire skills in investigating the origin of common parasitic causes
3-	Introducing the student to the effects resulting from common infections with medical parasites
4-	Enhance students' ability to understand the relationship between the parasite and the host for the purpose of avoiding infection by the parasite
5-	Enabling the student to acquire the knowledge necessary to design vaccines against common parasitic infections
6-	
7-	
8-	
9-	
10-	
Teaching and Learning Strategies	
1-	Through teaching theoretical material by the instructor
2-	Making the students involved in various activities
3-	Use the posters and video to consolidate the shapes and types of parasites in

	the student's mind
4-	Showing and discuss the pathological effects of parasites species that causes life threatening
5-	
6-	
7-	
8-	
9-	
10-	

Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2	Pathogenesis of direct and indirect parasitic disease (epidemiology)	Principles and practice of clinical parasitology- Edited by S. Gillespie and Richard D. Pearson- John Wiley and Sons Ltd- Print -section:2	Lecture based instruction	
2-	2	Protozoa: Structure, Classification, Growth, and Development	Protozoa: Structure, Classification, Growth, and Development Medicine Microbiology Chapter: Protozoa	Lecture based instruction	Report
3-	2	Class: Sarcodina: Entamoeba histolytica	Protozoa: intestinal Protozoa - Medicine Microbiology	Lecture based instruction	Assignment

			Chapter: intestinal Protozoa		
4-	2	Class: Sarcomastigophora: Giardia lamblia, Trichomonas vaginalis, Trichomonas intestinalis	Protozoa: intestinal Protozoa - Midicin Microbiology Chapter: intestinal Protozoa	Lecture based instructio n	
5-	2	Leishmania: Visceral and cutaneous leishmaniasis	Protozoa - Midicin Microbiology Chapter: Hemoflagellate s Leishmania	Lecture based instructio n	Assignment
6-	2	American Trypanosomiasis (Chaga's Disease)	Protozoa - Midicin Microbiology Chapter: Hemoflagellate s Protozoa	Lecture based instructio n	
7-	2	Test			Examinatio n
8-	2	African Trypanosomiasis (Sleeping Sickness)	Protozoa - Midicin Microbiology Chapter: Hemoflagellate s Protozoa	Lecture based instructio n	
9-	2	Toxoplasma Gondii	Protozoa - Midicin Microbiology Chapter: Hemoflagellate s Protozoa: Toxoplasma	Lecture based instructio n	Assignment
10-	2	Plasmodium; Pneumocystis carinii	Protozoa - Midicin Microbiology	Lecture based instructio	

			Chapter: Hemoflagellates Protozoa: Malaria Pneumocystis carinii	n	
11-	2	Helminths: Pathogenesis and Defenses ; Enterobius vermicularis; Trichuris	Helminths - Midicin Microbiology Chapter: Pathogenesis and Defenses	Lecture based instruction	Assignment
12-	2	Platyhelminthes; Taeniasis and Cysticercosis; Hymenolepis nana; Echinococcosis and hydatidosis; Diphyllobothriasis	Cestodes - Midicin Microbiology Chapter: Cestodes	Lecture based instruction	Report
13-	2	Platyhelminthes; Trematoda: Intestinal, Liver, Lung Flukes	Trematoda - Midicin Microbiology Chapter: Trematoda	Lecture based instruction	
14-	2	Filariae: Lymphatic Filariae Wuchereria bancrofti and Brugia malayi	Filarial Nematodes- Midicin Microbiology Chapter: Filarial Nematodes	Lecture based instruction	
15-	2	Test			Examination

Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc. The final exam is worth 60% of the total grade and other 40% is divided into 32% for two tests (each 16 marks) and 6 marks for participation, activities and homework and 2 marks for attendance

Learning and Teaching Resources

Required textbooks (curricular books, if any)	[1] Principles and practice of clinical parasitology-Edited by S. Gillespie and Richared D.Pearson-John Wiley and Sons Ltd-Print ISBN 0-471-97729-2
	[2] Microbiology and Immunology Notes
	[3]
	[4]
	[5]
Main references (sources)	[1] Midicin microbiology - Baron's Medical Microbiology - 4th edition
	[2]
	[3]
	[4]
	[5]
Recommende d books and references (scientific journals, reports...)	[1] Methods in Molecular Biology - PCR cloning protocol 2nd Edition
	[2]
	[3]
	[4]
	[5]
Electronic References, Websites	[1] https://www.academia.edu/34520513/PARASITOLOGY_reviewer
	[2] https://journals.asm.org/doi/full/10.1128/cmr.15.4.595-612.2002
	[3] https://journals.asm.org/doi/full/10.1128/cmr.15.4.595-612.2002
	[4] Clinical Parasitology Finals Transes or Reviewer
	[5] Research and Reviews in Clinical Microbiology: Parasitology - A Book

Medical mycology

Course Name:		Medical mycology
Course Code:		
Semester / Year: Semester		
Description Preparation Date:		
2025-2026		
Available Attendance Forms:		
Number of Credit Hours (Total) / Number of Units (Total)		
30 hours / 2unit		
Course administrator's name (mention all, if more than one name)		
Name		Professor :Khairi Jameel Wahed
:		
Email		Khairi2009jamel@gmail.com
:		
Course Objectives		
1-	Knowing the types of medical fungus prevalent in the world and their effects on humans	
2-	Study of the pathogenesis of fungus and methods of prevention of infection and knowledge of the treatment.	
Teaching and Learning Strategies		
1-	Classroom education through theoretical lectures	
2-	Preparing scientific reports and research	

Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-	2 hours	Introduction and History , medical fungus	Introduction	PowerPoint program	Quizzes and monthly exam
2-	2 hours	Classification of Medically Important Fungi	Superficial, Cutaneous, Subcutaneous mycoses	PowerPoint program	Quizzes, discussions and monthly exam
3-	2 hours	<i>Piedraia hortae</i>	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program Use of white board when in need	Oral quizzes , Quizzes and monthly exam
4-	2 hours	<i>Trichosporon</i>	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program	Quizzes and monthly exam
5-	2 hours	Mucormycosis	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program	Quizzes and monthly exam
6-	2 hours	<i>Sporothrix schenckii</i>	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program	Oral quizzes , discussions , Quizzes and

					monthly exam
7-	2 hours	Candida tropicalis	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program	Quizzes and monthly exam
8-	2 hours	<i>Candida glabrata</i>	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program scientific videos	Quizzes and monthly exam
9-	2 hours	<i>Candida albicans</i>	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program scientific videos	Quizzes and monthly exam
10-	2 hours	Rhizopus spp	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program scientific videos	Quizzes and monthly exam
11-	2 hours	Microsporum spp	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program scientific videos	Quizzes and monthly exam
12-	2 hours	Aspergillus	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program scientific videos	Quizzes and monthly exam
13-	2 hours	Fusarium	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program Use of white board when in need	Quizzes and monthly exam

14-	2 hours	Cryptococcus spp	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program	Quizzes and monthly exam
15-	2hours	<i>Blastomyces dermatitidis</i>	Transmission, Pathogenesis , Diagnosis , Treatment and Prevention	PowerPoint program	Quizzes and monthly exam

Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports ... etc

Learning and Teaching Resources

Required textbooks (curricular books, if any)	[1] medical mycology
	[2] Oxford Textbook of Medical Mycology (Oxford Textbooks in Infectious Disease and Microbiology) 1
	[3]
	[4]
	[5]
Main references (sources)	ille PM (2014) , Bailey and Scott's Diagnostic Microbiology, 13th edition, Mosby Elsevier
	https://quizlet.com/124260723/microbiology-ch-26-the-fungi-flash-cards/
	https://www.enotes.com/homework-help/what-scientific-study-fungi-called-286365
	https://www.coursehero.com/file/p2au82p/environment-in-response-to-changes-in-various-environmental-factors-nutrients/
	1. https://catalog.hardydiagnostics.com/cp_prod/Content/hugo/LactophenolCottonBlStn.htm
Recommended books and references (scientific journals, reports...)	2. http://www.himedialabs.com/TD/S016.pdf
	3. https://en.wikipedia.org/wiki/Lactophenol_cotton_blue
	4. microbe online/lactophenolcottonblue
Electronic References, Websites	

Research Methodology

Course Name:
Research Methodology
Course Code:
Semester / Year:
Description Preparation Date:
2025-2026
Available Attendance Forms:
Number of Credit Hours (Total) / Number of Units (Total)
1-Jan
Course administrator's name (mention all, if more than one name)

Name: Assist Prof Dr. Mahdi Ahmed Mohammed

Email : mahmed@uowasit.edu.iq

Course Structure					
Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hours	Week
Tests	Lecture + discussion	What is Journals? - Publishing Company	Knowing scientific journals and publishing company	1	1-
Tests	Lecture + discussion	Review, Peer Review	Knowing peer review and blind peer review	1	2-
Tests	Lecture + discussion	Open, close, and hybrid access journals	Identify the open, closed, and hybrid access journals	1	3-
Tests	Lecture + discussion	Classification of Journal in SJR and	Ability to see the rank of journals	1	4-

		Scopus			
Tests	Lecture + discussion	Practicing	Doing practice of the previous lecture	1	5-
Tests	Lecture + discussion	Cite Score & Impact factor	Knowing the calculation of the cite score and impact factor and compare between them	1	6-
Tests	Lecture + discussion	1- Steps to know predatory journals	Ability to know 5 steps to discover predatory journals	1	7-
Tests	Lecture + discussion	2- Steps to know predatory journals	Ability to know the other 4 steps to discover predatory journals	1	8-
Tests	Lecture + discussion	Practicing	Doing practice of the previous two lectures	1	9-
Tests	Lecture + discussion	Steps to know hijacked journals	Ability to know steps to discover hijacked journals	1	10-
Tests	Lecture + discussion	Practicing	Doing practice of the previous lecture	1	11-
Tests	Lecture + discussion	How to choose the right journal for your article	Steps to choose a suitable journal	1	12-
Tests	Lecture + discussion	Practicing	Doing practice of the previous lecture	1	13-
					14-
					15-

Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

Learning and Teaching Resources

[1]	Required textbooks (curricular books, if any)
[2]	
[3]	
[4]	
[5]	
[1]	Main references (sources)
[2]	
[3]	

[4]	Recommended books and references (scientific journals, reports...)
[5]	
[1]	
[2]	
[3]	
[4]	Electronic References, Websites
[5]	
[1] https://jor.rdd.edu.iq/	
[2] https://www.scimagojr.com/journalrank.php	
[3] https://www.scopus.com/sources.uri?zone=TopNavBar&origin=sourceinfo	
[4] https://portal.issn.org/	
[5] https://beallslist.net/	