

Republic of Yemen
Ministry of Higher Education & Scientific Research
21 SEPTEMBER UNIVERSITY of MEDICALS & APPLIED
SCIENCES



Faculty of Laboratory medicine..

Department of Biochemistry and Molecular biology

Course Specification of Research Methodology

Course No. (03.11. 322)

2023/2023

Prepared by:	Reviewed by:	Head of the Department:	Vice Dean for Quality affairs	Dean of College:
Dr. Nawal Al-Henhena	Ass.Pr. Dr. Ebtesam Al-Zabedi	Dr. Nawal Al-Henhena	Dr Gamil Taher Abdul Mughni	Ass.Pr. Dr. Ebtesam Al-Zabedi

I. Course Identification and General Information:					
1	Course Title:	Research Methodology			
2	Course Code & Number:	03.11. 322			
3	Credit Hours:	Theory Hours			
		Lecture	Exercise	Practical	Credit Hours
		2	0	0	2
4	Study Level/ Semester at which this Course is offered:	1 st Level / 2nd Semester			
5	Pre –Requisite (if any):	None			
6	Co –Requisite (if any):	None			
7	Program (s) in which the Course is Offered:	Master degree of microbiology & immunology			
8	Language of Teaching the Course:	English			
9	Study System:	Semester			
10	Mode of Delivery:	Regular			
11	Location of Teaching the Course:	University Campus			
12	Prepared by:				
13	Date of Approval:	2022-2023			

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II. Course Description:

This course is an advanced study of research methods and scientific writing. Students will learn about more complex research designs, statistical analysis, and writing for a scholarly audience. The course will also cover ethical issues in research.

III. Alignment Course Intended Learning Outcomes with program outcomes

III. Course Intended Learning Outcomes (CILOs)		Referenced PILOs
A. Knowledge and Understanding: <i>Upon successful completion of the course, students will be able to:</i>		
a1	Understand specialized research methods	A1
B. Intellectual Skills: <i>Upon successful completion of the course, students will be able to:</i>		
b1	Explain scientific writing and research methodology in the writing scientific reports	B1
b2	Design advanced research project autonomously synthesizing the various ethical, statistical, and reporting methods	B3
C. Professional and Practical Skills: <i>Upon successful completion of the course, students will be able to:</i>		
c1	Demonstrate mastery in advanced research methods when write clear and concise research reports.	C1
c2	Applied advanced ethical issues in research	C 3
D. Transferable Skills: <i>Upon successful completion of the course, students will be able to:</i>		
d1	Communicate effectively about Research Methods and Scientific Writing to a variety of audiences	D1

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IV. Alignment Course Intended Learning Outcomes with Teaching Strategies and Assessment methods :			
(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1	Understand specialized research methods	Lectures	Exam
(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1	Explain scientific writing and research methodology in the writing scientific reports	Lectures	Exam
B2	Design advanced research project autonomously synthesizing the various ethical, statistical, and reporting methods	Lectures	Exam
C Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c1	Demonstrate mastery in advanced research methods when write clear and concise research reports.	Lectures	Exam
C2	Applied advanced ethical issues in research	Lecture Research proposal Research report	Exam Research proposal Research report
(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1	Communicate effectively about Research Methods and Scientific Writing to a variety of audiences	Lectures Research proposal Research report	Exam Research proposal Research report

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Course Content:					
A – Theoretical Aspect:					
Order	Units/Topics List	Sub Topics List	Number of Weeks	contact hours	Learning Outcomes
1	Introduction to advanced research methods	What is research? The different types of research The research process	1	2	a1,b1,b2,c1,c2,d1
2	Research questions and hypotheses	Developing a research question, designing a study, data collection methods, and statistical analysis.	1	2	a1,b1,b2,c1,c2,d1
3	Literature review and research design	Presenting research results in written and oral formats, creating effective visual aids, and responding to questions from an audience.	1	2	a1,b1,b2,c1,c2,d1
4	Data collection and analysis	Sampling Survey research Experimental research Descriptive statistics Inferential statistics Critiquing Research: Evaluating scientific literature, reviewing peer-reviewed articles, and providing constructive feedback to peers	1	2	a1,b1,b2,c1,c2,d1
5	Writing research proposals	The structure of a research paper, academic writing conventions, scientific language, and citation formats.	1	2	a1,b1,b2,c1,c2,d1

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6	Ethical issues in research	<p>Scientific Writing</p> <p>The elements of scientific writing</p> <p>Writing a research proposal</p> <p>Writing a research report</p> <p>Scientific Writing (cont.)</p> <p>Reviewing and editing scientific writing</p> <p>Presenting research findings</p>	1	2	a1,b1,b2,c1,c2,d1
7	Midterm exam		1	2	a1,b1,b2,c1,c2,d1
8	Research paper proposal	The structure of a research paper, academic writing conventions, scientific language, and citation formats	1	2	a1,b1,b2,c1,c2,d1
9	Research paper draft	The structure of a research paper, academic writing conventions, scientific language, and citation formats	1	2	a1,b1,b2,c1,c2,d1
10	Research paper final draft	The structure of a research paper, academic writing conventions, scientific language, and citation formats	1	2	a1,b1,b2,c1,c2,d1
11			1	2	a1,b1,b2,c1,c2,d1
12	Scientific Writing	<p>The elements of scientific writing</p> <p>Writing a research proposal</p> <p>Writing a research report</p>	1	2	a1,b1,b2,c1,c2,d1
13	Scientific Writing (cont.)	<p>Reviewing and editing scientific writing</p> <p>Presenting research findings</p>	1	2	a1,b1,b2,c1,c2,d1

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14	Final exam		1	2	a1,b1,b2,c1,c2,d1
Number of Weeks /and Units Per Semester			16	32	

V. Teaching Strategies of the Course:

1-	Lectures
2-	Practical session
3-	Research proposal
4-	Research report

VI. Assessment Methods of the Course:

No	Assignment	
1	Written Exams (Short Essays) and Quizzes	A1,b3,b4,C1
2	Written Exams(MCQ)	A1,b3,b4,C1
3	Structured Oral Exams	A1,b3,b4,C1
4	Objective Structured Practical Exams (OSPE)	A1,b3,b4,C1
5	Student presentation	A1,b3,b4,C1

VII. Assignments:

No.	Assignments	Week Due	Mark	Proportion of Final Assessment	Aligned CILOs (symbols)
1	Midterm Exam	7	15	15%	a1,b3,b4,c1
2	Activity	Throughout the semester	5	5%	A1,b3,b4,C1
3	Practical Report	Throughout the semester	10	10 %	A1,b3,b4,C1
4	Practical exam	12	20	20%	A1,b3,b4,C1
5	Final Exam	14	50	50%	A1,b3,b4,C1
Total					

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Learning Resources:
<ul style="list-style-type: none"> Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).
1- Required Textbook(s) (maximum two).
1-Research Methods: A Process for Scientific Investigation, 11th Edition by John W. Creswe 2-Research Methods: A Process for Scientific Investigation, 8th Edition by David L. Stufflebeam and Charles W. Shinkfield.
2- Essential References.
1-Research Methods: A Structured Inquiry, 12th Edition by John W. Creswell and -Vicki L. Plano Clark
2- Research Design, John W. Creswell's 3rd Ed
3- Electronic Materials and Web Sites etc.
The American Psychological Association (APA) Style Guide. The Publication Manual of the American Sociological Association (ASA).

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

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