

**Ministry of Higher Education and Scientific Research  
Scientific Supervision and Scientific Evaluation Apparatus  
Directorate of Quality Assurance and Academic Accreditation  
Department**



# **Academic Program and Course Description Guide**

**3<sup>rd</sup> stage Research Methodology and  
Medical Biostatistics 2025-2026**

## Academic Program Description Form

**University Name:** University of Al-Qadisiyah

**Faculty/Institute:** College of medicine

**Scientific Department:**

**Academic or Professional Program Name:** General Medicine and Surgery

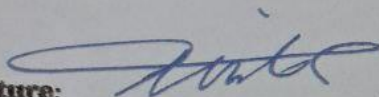
**Final Certificate Name:** Bachelor's degree in General Medicine and Surgery

**Academic System:** Annual year / 2 semester

**Description Preparation Date:** 10/9 /2025

**File Completion Date:** 16/9/2025

**Signature:**



**Head of Department Name:**

**Prof Dr. Nael Mohammed**

**Signature:**



**Scientific Associate Name:**

**Prof. Dr. Ali albrakeem**

**The file is checked by:** Prof Dr. Anwar jassib

**Department of Quality Assurance and University Performance**

**Director of the Quality Assurance and University Performance**

**Department:**

**Signature:**



**Approval of the Dean**

### 1. Program Vision

Seeking to make the College of Medicine in Al-Qadisiyah University a distinguished college among the medical colleges in Iraq in the field of medical education. Additionally, to make it has a clear imprint in promoting the health field in the Iraqi community and works to provide distinctive proposals and views for basic and clinical medical sciences to ensure meeting the health needs of the community at the local and national levels..

### 2. Program Mission

Al Qadisiyah medical college aims at producing medical doctors that are able to participate effectively in the health care delivery system whether in Iraq or any other country  
The curriculum is designed to provide students with the necessary knowledge, skills and attitudes in order to function as safe doctors and have the baseline for lifelong learning in the medical field in the future  
The teaching methods are guided by learning objectives that ensure delivering basic biomedical, behavioral and social and clinical subjects which help creating an efficient junior doctor who is competent, motivated and professional.  
It is a well-established strategy that students are heard and welcomed to provide feedback about different aspects of the learning process and they are considered as an essential part in the decision making in the college used for continuous planning for improvement of the whole institution.

### 3. Program Objectives

**Graduating distinguished doctors and rehabilitating them scientifically, professionally and ethically so that they can provide health and medical care to individuals, families and society on sound scientific bases and in accordance with the noble moral, social and humanitarian values with great interest in primary health care**  
- Developing curricula, teaching aids and methods to improve quality based on international quality standards and academic accreditation  
- Achieving accreditation through the institutional capacity standards of the college. Achieving academic accreditation standards for student and graduate programs offered by the college  
Continuous support for distinguished cadres of faculty members through an academic environment that encourages production and creativity  
θ Continuous development of the scientific research system to identify and diagnose major health problems in the community, propose appropriate scientific solutions to them, and keep pace with development in basic and clinical medical sciences.

### 4. Program Accreditation

An application has been made for national accreditation for medical colleges

### 5. Other external influences

Advances in medical science and technology , requiring regular curriculum updates

6. Program Structure				
Program Structure	Number of semester	Credit hours	Percentage	Reviews*
Institution Requirements	2	Total hour in annual year semester I and II 120h (60 h theory and 60h practical )		Basic
College Requirements	2	Total hour in annual year semester I and II 120h (60 h theory and 60h practical )		Basic
Department Requirements	2	Total hour in 1 year nnuuasemester I and II 120h (60 h theory and 60h practical )		Basic
Summer Training	Not found			
Other	Basic course			

\* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
3 <sup>rd</sup> stage	RMB 3204	research methodology and Medical biostatistics	theoretical	practical
			60h in annual year semester I.II	60h in annual year semester I.II

## 8. Expected learning outcomes of the program

### Knowledge

By the end of the course, students will be able to:

1. Define medical research methodology and biostatistics and explain their importance in healthcare.
2. Formulate research questions, objectives, and hypotheses relevant to medical practice.
3. Select appropriate study designs (observational and experimental) for medical research.
4. Apply sampling methods and calculate sample size for research studies.
5. Collect, organize, and manage research data systematically.
6. Apply basic biostatistical tools to analyze medical data.
7. Interpret statistical results, including p-values, confidence intervals, and tests of significance.
8. Identify sources of bias and error in research studies.
9. Apply ethical principles in medical research, including informed consent.
10. Prepare and present research reports using scientific and statistical standards.

### Skills

- 1-Identify research problems relevant to medical practice.
- 2-Formulate clear research objectives and hypotheses.
- 3-Select appropriate study designs.
- 4-Choose suitable sampling techniques.
- 5-Design questionnaires and data collection tools.
- 6-Collect reliable and valid data.
- 7-Calculate and interpret mean, median, standard deviation.
- 8-Apply basic statistical tests (t-test, chi-square, ANOVA).
- 9-Use correlation and regression appropriately.
- 10-Interpret p-values, confidence intervals, and results.
- 11-Draw valid conclusions from data.
- 12-Apply evidence-based medicine in practice.

### Ethics

- 1-Apply ethical principles and obtain informed consent.
- 2-Maintain confidentiality and research integrity.
- 3-Follow Good Clinical Practice (GCP) guidelines.

### 9. Teaching and Learning Strategies

Theoretical lectures  
 Small group teachings  
 Students centered activities like statistical analysis tutorials  
 Conducting minor research projects

### 10. Evaluation methods

- Assessment methods:  
Written exams  
Students activity during tutorials and SBL skills activity  
Seminars and reports  
Statistical problems

### 11. Faculty

#### Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof	MB.Ch.B	PhD family medicine			1	
Prof	MB.Ch.B	PhD community medicine			1	
Ass.prof	MB.Ch.B	FICMS community medicine			1	
Lecturer	MB.Ch.B	FICMS community medicine			1	

#### Professional Development

##### Mentoring new faculty members

processes and activities designed to enhance the professional knowledge, skills, and attitudes of

educators so that they might, in turn, improve the learning of students.

**Professional development of faculty members**

creating or sustaining a culture of teaching excellence; advancing new initiatives in teaching and learning; and supporting individual faculty members' goals for professional development.

**12. Acceptance Criterion**

According to the student's central acceptance rate

**13. The most important sources of information about the program**

**Daniels book for biostatics by Wayne W. Daniel**

**14. Program Development Plan**

Advances in medical science and technology , requiring regular curriculum updates

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
3 <sup>rd</sup> year	RMB 3204	research methodology and Medical biostatistics	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

### Course Description Form

1. Course Name:	
<b>Research methodology and Medical biostatistics</b>	
2. Course Code:	
RMB 3204	
3. 2 semester	
Year: 3 <sup>rd</sup> year	
4. Description Preparation	
Date:10/9/2025	
5. Available Attendance Forms:	
Official working hours	
6. Number of Credit Hours (Total) / Number of Units (Total)	
<b>Total 120 h for annual year semester I,II ( 60h theory and 60 practical) / 6 unit total</b>	
7. Course administrator's name (mention all, if more than one name)	
Name: Ahmed kathem Email:	
8. Course Objectives	
<b>Course Objectives</b>	<ol style="list-style-type: none"> <li>1. To develop scientific thinking for solving medical and health-related problems.</li> <li>2. To enable formulation of research questions and hypotheses relevant to medical practice.</li> <li>3. To familiarize students with appropriate study designs and research methods.</li> <li>4. To train students in systematic data collection, organization, and management.</li> <li>5. To introduce basic biostatistical concepts and tools for analyzing medical data.</li> <li>6. To enable correct interpretation of statistical results and research findings.</li> <li>7. To identify bias, error, and confounding factors in medical research.</li> <li>8. To promote ethical conduct of research, including informed consent and patient safety.</li> <li>9. To develop skills in research reporting and scientific writing.</li> <li>10. To encourage evidence-based medical practice through critical appraisal of research.</li> </ol>
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• Manage the lecture in a way that feels the importance of time.</li> <li>• The method of lecture and the use of the smart board</li> <li>• Readings, self-learning, discussion panels.</li> <li>• Exercises and activities in the classroom.</li> <li>• Guiding students to some websites to benefit from them to develop capabilities.</li> <li>• Asking students a set of thinking questions during the lectures such as what, how, when and why for specific topics</li> <li>• Sudden daily and weekly continuous tests.</li> <li>• Allocate a percentage of the class for group activities.</li> </ul>

10. Course Evaluation	
<p><b>The method of lecture and the use of the smart board</b>  <b>Readings, self-learning, panel discussions.</b>  <b>Exercises and activities in the classroom.</b>  <b>- Guide students to some websites to benefit from them to develop abilities.</b>  <b>Ask the students a set of thinking questions during the lectures such as what, how, when and why</b></p>	
11. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	<b>Daniels book for biostatics by Wayne W. Daniel</b>
Main references (sources)	<b>Daniels book for biostatics by Wayne W. Daniel</b>
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Internet biostatics sources

<b>Subject / 1<sup>st</sup> semester content</b>	<b>Educational method</b>	<b>Week</b>
Medical statistic	Theory and practical	1
Biostatistics and data grouping	Theory and practical	2
Presentation of data mathematical	Theory and practical	3
Presentation of data tubular , graphical and pictorial presentation	Theory and practical	4
Sampling techniques	Theory and practical	5
Probability	Theory and practical	6
Probability distribution	Theory and practical	7
Sampling distribution- Z distribution	Theory and practical	8
Estimation – confidence interval	Theory and practical	9
Student’s T – distribution	Theory and practical	10
Hypothesis testing	Theory and practical	11
Chi square distribution	Theory and practical	12
Correlation & regression	Theory and practical	13
Correlation & regression in diagnosis	Theory and practical	14

<b>Exam</b>		<b>15</b>
<b>Semester II content</b>		
	method	week
<b>Vital statistics</b>	<b>Theory and practical</b>	<b>16</b>
Public health nutrition	<b>Theory and practical</b>	17
Definition of relevant terms	<b>Theory and practical</b>	18
Nutrient metabolism	<b>Theory and practical</b>	19
Nutritional requirement	<b>Theory and practical</b>	20
Nutrition of specific groups of population	<b>Theory and practical</b>	21
Nutrition and infections	<b>Theory and practical</b>	22
Nutritional surveys	<b>Theory and practical</b>	23
assessment of the nutritional status of the population	<b>Theory and practical</b>	24
Nutritional diseases	<b>Theory and practical</b>	25
Diet therapy and nutritional rehabilitation	<b>Theory and practical</b>	26
Vital statistics	<b>Theory and practical</b>	27
<b>Review</b>	<b>Theory and practical</b>	<b>28</b>

<b>EBM</b>	<b>practical</b>	<b>29</b>
<b>Exam</b>		<b>30</b>

### **Examinations description:**

<b>Examination</b>	<b>Description</b>
<b>1-Continuous progress test (CPT)</b>	oral examination / spot diagnosis , quizzes , PBL ,Short answered questions, and skills assessment , log book activity , Case report ,homework activity
<b>2- Mid theory exam for each semester</b>	Short answered questions, M.C.Qs. and case presentation with short answer and matching according bloom and blue print
<b>3- Half year theory exam</b>	M.C.Qs. as case sinario or direct question , according bloom and blue print
<b>4-Final year theory exam</b>	M.C.Qs. as case sinario or direct question , according bloom and blue print
<b>5- Final Practical exam for semester I,II</b>	Spot slide diagnosis , prescription writing, M.C.Q , according bloom and blue print

**The minimum passing grades (Faculty bylaws) is 50 marks.**

**Re-sit Examinations :- Students who fail in annual year assessment will be required to re-sit (second sitting) the Final examination ( theory and practical exam) .**