

## Course Description Form

<b>1. Course Name:</b>					
Functional Analysis 1					
<b>2. Course Code:</b>					
<b>3. Semester / Year:</b>					
Second semester 2024-2025					
<b>4. Description Preparation Date:</b>					
9/10/2024					
<b>5. Available Attendance Forms:</b>					
Traditional attendance					
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>					
45/3					
<b>7. Course administrator's name (mention all, if more than one name)</b>					
Name: Rifaat Saad Abduljabbar					
Email: drrifaat1974@uoanbar.edu.iq					
<b>8. Course Objectives</b>					
<b>Course Objectives</b>		<ul style="list-style-type: none"> <li>Introducing the student to mathematical concepts related to functional analysis.</li> <li>Training the student to deal with abstract mathematical concepts.</li> </ul>			
<b>9. Teaching and Learning Strategies</b>					
<b>Strategy</b>	Traditional and e-lectures				
<b>10. Course Structure</b>					
<b>Week</b>	<b>Hours</b>	<b>Required Learning Outcomes</b>	<b>Unit or subject name</b>	<b>Learning method</b>	<b>Evaluation method</b>
1	3		Metric space	Presenting lecture	Daily and monthly tests
2	3		Examples of metric spaces.	Presenting lecture	Daily and monthly tests
3	3		Open sets and closed sets in metric	Presenting lecture	Daily and monthly tests

			spaces.		
4	3		continuous mappings	Presenting lecture	Daily monthly tests
5	3		Cauchy sequence with some related theorems	Presenting lecture	Daily monthly tests
6	3		Completeness. Examples of complete metric spaces.	Presenting lecture	Daily monthly tests
7	3		Vector spaces	Presenting lecture	Daily monthly tests
8	3		Definitions and examples.	Presenting lecture	Daily monthly tests
9	3		Linear independence and span	Presenting lecture	Daily monthly tests
10	3		Finite dimensional vector spaces and basis.	Presenting lecture	Daily monthly tests
11	3		Normed spaces and Banach space	Presenting lecture	Daily monthly tests
12	3		Definitions and examples.	Presenting lecture	Daily monthly tests
13	3		Continuous mapping in normed spaces	Presenting lecture	Daily monthly tests
14	3		Some related theorems.	Presenting lecture	Daily monthly tests
15	3		Completeness with some related theorems.	Presenting lecture	Daily monthly tests

### 11. 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

### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introduction to functional analysis - Krayzic
Main references (sources)	
Recommended books and references (scientific journals, reports...)	

