

## Course Description Form

<b>1. Course Name:</b>	
Topology1	
<b>2. Course Code:</b>	
MS 402	
<b>3. Semester / Year:</b>	
First Semester/2024-2023	
<b>4. Description Preparation Date:</b>	
1-10-2024	
<b>5. Available Attendance Forms:</b>	
Attendance	
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>	
60 hours/ 4 units	
<b>7. Course administrator's name (mention all, if more than one name)</b>	
Name: Reem Taha Abdulqader Email: Reemalhwez84@tu.edu.iq	
<b>8. Course Objectives</b>	
<b>Course Objectives</b>	<ol style="list-style-type: none"> <li>1- Learn about topological space, its theories, and how to create a topology.</li> <li>2- Study of topological concepts related to the study of continuous, open and closed sets and function.</li> <li>3- Studying the compact in topological space.</li> <li>4- The student should know that topological development is an extension of set theory.</li> </ol>
<b>9. Teaching and Learning Strategies</b>	
<b>Strategy</b>	<p>Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills.</p> <p>This will be achieved through classes, interactive tutorials and by considering the type of simple exercises involving how to solve some examples and prove theorems.</p>

## 10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	The concept of Topological spaces, example and definition.	Topological spaces	Lectures	Discussion and tests
2	4	The standard topology, the finite complement topology, the base, and the partial base.	Topological spaces	Lectures	Discussion and tests
3	4	Topological relative, set and points in topological space	Topological spaces and points in topological space	Lectures	Discussion and tests
4	4	Closed sets, closure, internal and external points	Points in topological spaces	Lectures	Discussion and tests
5	4	Boundary points, limit points, and derived set.	Points in topological spaces	Lectures	Discussion and tests
6	4	Product topology by base and partial base	Product topology	Lectures	Discussion and tests
7	4	Continuity, topological equivalence, and the concept of continuity.	Continuity	Lectures	Discussion and tests
8	4	Open and closed function, topological equivalence and topological division.	Functions in topological spaces	Lectures	Discussion and tests
9	4	T <sub>0</sub> -space, T <sub>1</sub> -space , T <sub>2</sub> -space	Separation exioms	Lectures	Discussion and tests
10	4	T <sub>3</sub> , T <sub>4</sub> –space(yoursons unique normal theorem)	Normal and regular space	Lectures	Discussion and tests
11	4	Convergence in topological spaces and its importance in T <sub>2</sub> -space	Convergence in topological spaces	Lectures	Discussion and tests
12	4	The first and second counting axioms and separable space	Separation axioms	Lectures	Discussion and tests
13	4	Landelof space and metric space	Metric space	Lectures	Discussion and tests
14	4	Metric function	Metric space	Lectures	Discussion and tests
15	4	Measurable spaces and metric equivalence	Metric space	Lectures	Discussion and tests

