



Course Specification

(Postgraduate)

Course Title: **General Topology I**

Course Code: **MATH636**

Program: **Master Program in Mathematics**

Department: **Mathematics**

College: **Science**

Institution: **University of Tabuk, KSA**

Version: **2**

Last Revision Date: **1/12/1443 H**



Table of Contents

A. General information about the course:	3
1. Teaching mode(mark all that apply)	3
2. Contact Hours (based on the academic semester)	4
C. Course Content	5
D. Students Assessment Activities	5
E. Learning Resources and Facilities	6
1.References and Learning Resources	6
2. Required Facilities and equipment	6
F. Assessment of Course Quality	6
G. Specification Approval Data	7



A. General information about the course:

Course Identification

1. Credit hours: 3 H

2. Course type

a. University College Department Track Others

b. Required Elective

3. Level/year at which this course is offered:

Level-1

4. Course general Description

Basic set theory (Countable and uncountable sets, Cartesian products), Topological spaces (Basis for a topology, Product topology, Functions, Homeomorphisms), Connected and path connected spaces, Compactness in metrizable spaces, Countability axioms, First and second countable spaces, Separation axioms, Urysohn's lemma, Urysohn's metrization theory, Complete metric spaces.

5. Pre-requirements for this course (if any): None

6. Co- requirements for this course (if any): None

7. Course Main Objective(s)

1. Recall the basic concepts on general topology to develop the interest of concerned subject.
2. Discuss the concepts of connected and path connected spaces.
3. To study the concept of product topology and Homeomorphisms.
4. Introduce the concepts of countability axioms.
5. Define and discuss the concepts on separation axioms.
6. Explain the Urysohn's metrization theory.
7. Define the concepts of complete metric spaces. Also to prove some important theorems in general topology.

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	45	100 %
2.	E-learning		
3.	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4.	Distance learning		



2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	3 H /week
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	
5.	Others (specify)	
	Total	45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding The students will be able to:			
1.1	Demonstrate the advanced concepts and fundamentals of general topology.	K1	Lectures, Group works, Presentations, Classroom discussion, Seminar, Case study, problem solving session	Exams, Quizzes, Research project, presentation, interactive discussion and participation, Survey
1.2	Describe advance methods and topics in the field of General Topology.	K2		
1.3	Enhance an understanding to handle methods, examples and solutions of problems in this subject.	K3		
2.0	Skills The students will be able to:			
2.1	Apply and justify the analytical procedures in solving problems.	S1	Lectures, Group works, Presentations, Classroom discussion, Seminar, Case study, problem solving session	Research project, Home works, Assignments, presentation, interactive discussion and participation, Surveys.
2.2	Using rules and results that they have learnt in this course to solve problems.	S3		
2.3	Using advanced techniques to interpret the results in practical examples.	S3		
3.0	Values, autonomy, and responsibility The students will be able to:			



Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.1	Perform professionally tasks with autonomy.	V1	Lectures, Group works, Presentations, Classroom discussion, Seminar, Case study, problem solving session	Research project, Home works, Assignments, presentation, interactive discussion and participation, Surveys
3.2	Demonstrate self-learning individually or as group research.	V2		

C. Course Content

No	List of Topics	Contact Hours
1	Basic set theory (Countable and uncountable sets, Cartesian products)	3
2	Topological spaces (Basis for a topology, Product topology)	3
3	Functions,.	3
4	Homeomorphisms	3
5	Connected	3
6	Path connected spaces	3
7	Compact spaces	3
7	Mid-Exam #	--
8	Compactness in metrizable spaces	3
9	Compactness in metrizable spaces	3
10	Countability axioms	3
11	First and second countable spaces	3
12	Separation axioms	3
13	Urysohn's lemma	3
14	Urysohn's metrization theory	3
15	Complete metric spaces	3
16+17	Revision & Final Exam	
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Home works and Assignments	Weekly basis	20%



No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
2.	Mid-term exam	7th week	25%
3.	Presentation and discussion	During the Semester	15%
4.	Final Exam	At End of Semester	40 %

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1.References and Learning Resources

Essential References	1. Tej Bahadur Singh , Introduction to Topology, Springer Nature Singapore (2020).
Supportive References	1. Bert Mendelson , Introduction to Topology: Third Edition, WWW.Snowballpublishing.com (2019).
Electronic Materials	Saudi Digital Library
Other Learning Materials	N.A

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Lecture Room with capacity of 30 students and equipped with White Board, Library
Technology equipment (projector, smart board, software)	Overhead projector and internet connection.
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct and Indirect
Effectiveness of students assessment	Teacher	Direct
Quality of learning resources	Students	Indirect
The extent to which CLOs have been achieved	Teacher, Quality Committee	Direct and Indirect
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods(Direct, Indirect)



G. Specification Approval Data

Council / Committee	Approval by the Department Council
Reference No.	DEPARTMENT COUNCIL NO (26)
Date	11/9/1444 H

