



T-104
2022

Course Specification





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Course Specification

Course Title:	General topology
Course Code:	473Math-3.
Program:	B.Sc. of Mathematics.
Department:	Mathematics
College:	Arts and Sciences
Institution:	Najran University.
Version:	1
Last Revision Date:	07-05-2023



Table of Contents:

Content	Page
A. General Information about the course	
1. Teaching mode	
2. Contact Hours	
B. Course Learning Outcomes, Teaching Strategies and Assessment Methods	
C. Course Content	
D. Student Assessment Activities	
E. Learning Resources and Facilities	
1. References and Learning Resources	
2. Required Facilities and Equipment	
F. Assessment of Course Quality	
G. Specification Approval Data	





A. General information about the course:

Course Identification

1. Credit hours: 3

2. Course type

a University College Department Track Others

b Required Elective

3. Level/year at which this course is offered: 7/4

4. Course general Description

This course provides an introduction to general topology. It begins with a brief review of basic set theory. Topics covered include topological spaces, Base, Sub base, topological properties (Continuity, connectedness, compactness, separation axioms) and their application to problems, some of the major theorems in general topology

5. Pre-requirements for this course (if any):

Real Analysis(1) (371Math- 3)

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

7. Course Main Objective(s)

This course aims to providing students with the basic concepts of topology and the continuous function, open (resp. closed) functions in topological spaces, separation axioms, connectedness, compactness.

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	3	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	45
2.	Laboratory/Studio	--
3.	Field	--
4.	Tutorial	--
	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			
1.1	Define Topological space, T_1 - space, T_2 -space, T_3 - space, T_4 -space, metric space.	K1	<ul style="list-style-type: none"> Lectures discussions 	Written Exam Quizzes. assignments
1.2	State the main results in general topology			
2.0	Skills			
2.1	Prove the main facts in topological spaces	S2	<ul style="list-style-type: none"> Lectures discussions 	Written Exam Quizzes. assignments
2.2	Solve problems in general topology.	S1		
3.0	Values, autonomy, and responsibility			
3.1	Work effectively within groups and independently	V1	Assigning each group of students to collect and write topic and explain it to their classmates.	Oral Exam Rubrics

C. Course Content

No	List of Topics	Contact Hours
1.	Topological spaces (Concept of topology- Metric Topologies -open and closed sets-Neighborhood and neighborhood systems- Base and sub base for a topology.	9
2.	Fundamental sets and fundamental points (limit points –derived set-closure of sets- interior point –exterior points-boundary point fundamental theorems for them.)	6
3	Coarser and finer topologies. Subspaces, relative topologies. Continuous functions –open function –closed functions-homeomorphisms. hereditary and topological properties(6
4	Connectedness (connected spaces- continuity and Connectedness – locally connectedness)	6
5	Compactness (compact sets- compact spaces-finite intersection	9





	property-continuity and compactness)	
6	Separation axioms (T_i – spaces, $i = 1,2,3,4$) with topological property.	9
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	First Midterm exam	From 6 - 8 week	20%
2.	Second midterm exam	From 11- 13 week	20 %
3.	Assignments - Quizzes - Oral test	During classes	10%
...	Final Exam	From 18- 20 week	50

*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	أحمد محمد ظهران , مقدمة في التوبولوجي العام مكتبة الخبتي الثقافية , 1420 هـ
Supportive References	<ul style="list-style-type: none"> • Sideny A. Morris Topology without tears Version of March 31, 2014² • Kelly, J. L., General Topology, D. Van Nostrand Co., Inc., Princeton, N.J. 1955.
Electronic Materials	<ul style="list-style-type: none"> • Topology atlas • http://at.yorku.ca/topology/ • www.topologywithoutears.net
Other Learning Materials	-----

2. Required Facilities and equipment

Items	Resources
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Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Lecture halls, containing white boards, and electronic monitors, and 25 seats approximately.
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> • Laptop • smart board • Projector. • Wi Fi
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	Student Questionnaire (Indirect)
Effectiveness of student's assessment	Peer Reviewer	Rubrics (Indirect)
Quality of learning resources		
The extent to which CLOs have been achieved	Faculty	Direct

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Council of Mathematics Department
REFERENCE NO.	14441017-0208-00014
DATE	17-10-1444H

