



ÇANKAYA UNIVERSITY

Faculty of Arts and Sciences

Course Definition Form

Part I. Basic Course Information

Department Name	MATHEMATICS	Dept. Numeric Code	27	
Course Code	M A T H 4 5 1	Number of Weekly Lecture Hours	4	
		Number of Weekly Lab/Tutorial Hours	0	
		Number of Credit Hours	4	
Course Web Site	http://math451.cankaya.edu.tr		ECTS Credit	05

Course Name <i>This information will appear in the printed catalogs and on the web online catalog.</i>	
English Name	Topology
Turkish Name	Topoloji

Course Description <i>Provide a brief overview of what is covered during the semester. This information will appear in the printed catalogs and on the web online catalog. Maximum 60 words.</i>	
Topological. Spaces; definitions, bases and subbases; continuous closed and open functions; homeomorphisms; countability axioms; separation axioms; compactness; product and quotient topologies; connectedness; metric and normed spaces; function spaces, Ascoli's theorem, compact open topology.	

Prerequisites (if any) <i>Give course codes and check all that are applicable.</i>	1 st	2 nd	3 rd	4 th
	<input type="checkbox"/> Consent of the Instructor	<input type="checkbox"/> Senior Standing	<input type="checkbox"/> Give others, if any.	
Co-requisites (if any)	1 st	2 nd	3 rd	4 th
Course Type <i>Check all that are applicable</i>	<input checked="" type="checkbox"/> Must course for dept. <input type="checkbox"/> Must course for other dept.(s) <input type="checkbox"/> Elective course for dept. <input type="checkbox"/> Elective course for other dept.(s)			

Course Classification <i>Give the appropriate percentage for each category.</i>				
Category	Mathematics & Natural Sciences	Engineering & Architectural Sciences		
Percentage	95	5		

Part II. Detailed Course Information**Course Objectives***Maximum 100 words.*

To teach different examples of topological spaces other than the Euclidean topologies then teach the concepts of continuity, compactness, connectedness, quotient spaces, products, countability axioms, separation axioms, convergence and finally study metric topologies.

Learning Outcomes*Explain the learning outcomes of the course. Maximum 10 items.*

The students will be able to deal with the general topological concepts in general topological spaces and hence be prepared to study functional analysis effectively.

Textbook(s)*List the textbook(s), if any, and other related main course material.*

Author(s)	Title	Publisher	Publication Year	ISBN
G. F. Simmons	Introduction to Topology and Modern Analysis	McGraw-Hill	1963	11575242389
Sheldon W. Davis	Topology	McGraw-Hill	2004	0072910062

Reference Books*List, if any, other reference books to be used as supplementary material.*

Author(s)	Title	Publisher	Publication Year	ISBN
James Munkres	Topology	Prentice Hall	2000	0139254951

Teaching Policy*Explain how you will organize the course (lectures, laboratories, tutorials, studio work, seminars, etc.)*

4 hours of lecturing per week. Attendance is compulsory.

Laboratory/Studio Work*Give the number of laboratory/studio hours required per week, if any, to do supervised laboratory/studio work and list the names of the laboratories/studios in which these sessions will be conducted.***Computer Usage***Briefly describe the computer usage and the hardware/software requirements for the course.*

Course Outline <i>List the weekly topics to be covered.</i>	
Week	Topic(s)
1	Topological spaces and examples
2	Basic topological definitions and notions
3	Basis and Subbases, metric topologies
4	Product Topologies
5	Continuous and closed functions, homeomorphisms
6	The identification Topology and Quotient spaces.
7	Separation axioms
8	Countability axioms
9	Compactness
10	Compactness
11	Metric spaces
12	Convergence and Metric spaces
13	Connectedness
14	Review

Grading Policy <i>List the assessment tools and their percentages that may give an idea about their relative importance to the end-of-semester grade.</i>								
Assessment Tool	Quantity	Percentage	Assessment Tool	Quantity	Percentage	Assessment Tool	Quantity	Percentage
Homework			Case Study			Attendance		
Quiz(es)	4	10	Lab Work			Field Study		
Midterm Exam	2	50	Classroom Participation			Project		
Term Paper			Oral Presentation			Final Exam	1	40

ECTS Workload <i>List all the activities considered under the ECTS.</i>			
Activity	Quantity	Duration (hours)	Total Workload (hours)
Attending Lectures (<i>weekly basis</i>)	14	4	56
Attending Labs/Recitations (<i>weekly basis</i>)			
Compilation and finalization of course/lecture notes (<i>weekly basis</i>)	14	0.25	3.5
Collection and selection of relevant material (<i>once</i>)	1	6	6
Self study of relevant material (<i>weekly basis</i>)	14	0.25	3.5
Take-home assignments			
Preparation for quizzes	4	4	16
Preparation for mid-term exams (<i>including the duration of the exams</i>)	2	10	20
Preparation of term paper/case-study report (<i>including oral presentation</i>)			
Preparation of term project/field study report (<i>including oral presentation</i>)			
Preparation for final exam (<i>including the duration of the exam</i>)	1	20	20
TOTAL WORKLOAD / 25			125/25
ECTS Credit			5

Total Workloads are calculated automatically by formulas. To update all the formulas in the document first press CTRL+A and then press F9.

Program Qualifications vs. Learning Outcomes Consider the program qualifications given below as determined in terms of learning outcomes and acquisition of capabilities for all the courses in the curriculum. Look at the learning outcomes of this course given above. Relate these two using the Likert Scale by marking with X in one of the five choices at the right.						
No	Program Qualifications	Contribution				
		0	1	2	3	4
1	Adequate knowledge in mathematics; ability to use applied and theoretical information in these areas to solve pure and applied mathematical problems.					X
2	Ability to use modern computational tools to analyze an abstract or real life problem				X	
3	Adequate knowledge in theoretical and historical background in mathematics				X	
4	Ability to work individually and in teams efficiently, ability to collaborate effectively in teams to analyze complex systems from intra-disciplinary and multi-disciplinary areas				X	
5	Ability to communicate effectively in English about technical subjects, both orally and in writing				X	
6	Ability to use, develop and implement new experiments and algorithms to solve scientific, engineering and financial problems				X	
7	Ability to analyze a mathematical problem using both analytical and numerical methods; use and compare theoretical and simulational methods to gain deeper insight				X	
8	Ability to report the findings, conclusions and interpretations related to a project in the area of pure and applied mathematics, ability to write technical reports, to prepare and conduct effective presentations				X	
9	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to keep continuous self improvement					X
10	Awareness of professional and ethical responsibility issues and their legal consequences					X

Scale for contribution to a qualification: 0-none, 1-little, 2-moderate, 3-considerable, 4-highest