Syllabus (Fall, 2021)

Course Title	Topology II	Course No.	20450
Department/ Major	Mathematics	Credit/Hours	3
Class Time/ Classroom	Tue 6, Thur 4/ On Line		
Instructor	Name: Lee, Jae Hyouk(이재혁)	Department: Mathematics	
	E-mail: jaehyoukl@ewha.ac.kr	Telephone: 3346	
Office Hours/ Office Location	To be announced /Sci B 314		

Ⅰ. Course Overview

1. Course Description

Topology is a mathematical subject studying the topological space which is a collection of subsets with proper relationships so called topology. Topology is the foundation of modern analysis and very important key to global issues in geometry. It also is closely related to various mathematical research areas. In particular, differential topology is related with analysis and geometry, and algebraic topology is related with algebra and algebraic geometry.

2. Prerequisites

Students should know the definition and basic properties of topology, compactness, connectedness, but it is not necessary to be familiar to algebra issues including group theory.

3. Course Format

Lecture	Discussion/Presentation	Experiment/Practicum	Field Study	Other
100 %	%	%		%

(Instructor can change to match the actual format of the class.)

Mostly Class lecture

4. Course Objectives

For this semester, we consider further properties of compactness and separations and have an introduction to algebraic topology and differential topology. We study

    1. product spaces and quotient spaces (classifcation of surfaces)

    2. separation properties

    3. fundamental groups

    4. covering spaces.

5. Evaluation System

☐ Relative evaluation ■ Absolute evaluation ☐ Others :

- Explanation of evaluation system:

Homework will be take-home quizzes, and they will be given on Thursday, mostly. And the due of each take-home quiz will be the beginning of the next class.

No regular homework will be assigned, but take-home quizzes will be given as homework.

A list of suggested exercises for each section will be given according to the class procedure.

Midterm Exam	Final Exam	Quizzes	Presentation	Projects	Assignments	Participation	Other
40 %	40 %	20 %	%	%	%	%	%

∗ Evaluation of group projects may include peer evaluations.

Ⅱ. Course Materials and Additional Readings

1. Required Materials

Topolgoy: Principles of Topology by F.H. Croom (Chapter 7, 8, 9)

Topology, an introduction to the point-set and algebraic areas, by D. W. Kahn (Chapter 7-10)

2. Supplementary Materials

Topology: A first course by J.R. Munkres

Algebraic Topology by Hetcher http://www.math.cornell.edu/~hatcher/AT/ATpage.html

3. Optional Additional Readings

Ⅲ. Course Policies

∗ For laboratory courses, all students are required to complete lab safety training.

IV. Course Schedule (15 credit hours must be completed.)

Week	Date	Topics & Class Materials, Assignments
Week 1	(09/02)	Overview of fall semester, Algebra issues
	(09/07)	Review spring semester, Algebra issues
Week 2	(09/09)	Review spring semester, Algebra issues
	(09/14)	Review spring semester, Algebra issues
Week 3	(09/16)	Product spaces and Quotient space, (Croom Ch 7)
	(09/21)	No Class, Thanksgiving
Week 4	(09/23)	Product spaces and Quotient space, (Croom Ch 7)
	(09/28)	Product spaces and Quotient space, (Croom Ch 7)
Week 5	(09/30)	Classification of surfaces, Kahn Ch 7
	(10/05)	Separation properties (Croom Ch 8)
Week 6	(10/07)	Separation properties (Croom Ch 8)
	(10/12)	Separation properties (Croom Ch 8)
Week 7	(10/14)	Separation properties (Croom Ch 8)
	(10/19)	Fundamental group (Croom Ch 9 or Kahn Ch 8)
Week 8	(10/21)	No Class (Exams days of the courses for general education)
	(10/26)	Midterm
Week 9	(10/28)	Fundamental group (Croom Ch 9 or Kahn Ch 8)
	(11/02)	Fundamental group (Croom Ch 9 or Kahn Ch 8)
Week 10	(11/04)	Fundamental group (Croom Ch 9 or Kahn Ch 8)
	(11/09)	Fundamental group (Croom Ch 9 or Kahn Ch 8)
Week 11	(11/11)	Fundamental group (Croom Ch 9 or Kahn Ch 8)
	(11/16)	Covering space, Kahn Ch 9
Week 12	(11/18)	Covering space, Kahn Ch 9
	(11/23)	Covering space, Kahn Ch 9
Week 13	(11/25)	Covering space, Kahn Ch 9
	(11/30)	Covering space, Kahn Ch 9
Week 14	(12/02)	Calculation of fundamental groups, Kahn Ch 10
	(12/07)	Calculation of fundamental groups, Kahn Ch 10
Week 15	(12/09)	Calculation of fundamental groups, Kahn Ch 10
	(12/14)	Final

Makeup Class 1	(/)	Review for midterm exam (the schedule to be fixed)
Makeup Class 2	(/)	Review for final exam (the schedule to be fixed)

V. Special Accommodations

＊According to the University regulation section #57-3, students with disabilities can request for special accommodations related to attendance, lectures, assignments, or tests by contacting the course professor at the beginning of semester. Based on the nature of the students' request, students can receive support for such accommodations from the course professor or from the Support Center for Students with Disabilities (SCSD). Please refer to the below examples of the types of support available in the lectures, assignments, and evaluations.

Lecture	Assignments	Evaluation
. Visual impairment : braille, enlarged reading materials . Hearing impairment : note-taking assistant .Physical impairment:access to classroom, note-taking assistant	Extra days for submission, alternative assignments	. Visual impairment : braille examination paper, examination with voice support, longer examination hours, note-taking assistant . Hearing impairment : written examination instead of oral . Physical impairment : longer examination hours, note-taking assistant

- Actual support may vary depending on the course.

＊The contents of this syllabus are not final—they may be updated.