

MATH-220

Topology I - point set topology

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Cursus	Sem.	Type
Mathematics	BA3	Obl.

Language of teaching	English
Credits	5
Session	Winter
Semester	Fall
Exam	Written
Workload	150h
Weeks	14
Hours	4 weekly
Lecture	2 weekly
Exercises	2 weekly
Number of positions	

Summary

A topological space is a space endowed with a notion of nearness. A metric space is an example of a topological space, where a distance function measures the concept of nearness. Within this abstract setting, we can ask: What is continuity? When are two topological/metric spaces equal?

Learning Prerequisites**Required courses**

First year courses in the block "Sciences de base" in EPFL Mathematics Bachelor's program.

Learning Outcomes

By the end of the course, the student must be able to:

- Define what a topological space is as well as their properties.
- Describe a range of important examples of topological and metric spaces.
- Analyze topological and metric structures.
- Prove basic results about topological and metric structures.

Teaching methods

Lectures and exercise classes.

Assessment methods

One final written exam.

Supervision

Office hours	No
Assistants	Yes
Forum	Yes

Resources**Bibliography**

There are many good books on general topology. For example, here are a few that are available also at the EPFL library:

- Introduction to topology, by T. Gamelin et R. Greene;
- Topology, Second Edition, by J. Munkres;
- Introduction to metric and topological spaces, by W. A. Sutherland.

Notes/Handbook

There are written notes for the course.

Moodle Link

- <https://go.epfl.ch/MATH-220>

Prerequisite for

Topology (Math-225). Advanced courses in analysis and geometry.