

COURSE DETAIL

TOPOLOGY

Country

Norway

Host Institution

University of Oslo

Program(s)

University of Oslo

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mathematics

UCEAP Course Number

102

UCEAP Course Suffix**UCEAP Official Title**

TOPOLOGY

UCEAP Transcript Title

TOPOLOGY

UCEAP Quarter Units

8.00

UCEAP Semester Units

5.30

Course Description

This course is an introduction to topological spaces. It deals with constructions like subspaces, product spaces, and quotient spaces, and properties like compactness and connectedness. The course concludes with an introduction to fundamental groups and covering spaces. The course discusses topics including sets and functions, images and preimages, and finite, countable, and uncountable sets; how the topology on a space is determined by the collection of open sets, by the collection of closed sets, or by a basis of neighborhoods at each point, and what it means for a function to be continuous; the definition and basic properties of connected spaces, path connected spaces, compact spaces, and locally compact spaces; what it means for a metric space to be complete, and characterizing compact metric spaces; the Urysohn lemma and the Tietze extension theorem, and characterizing metrizable spaces; and the construction of the fundamental group of a topological space and applications to covering spaces and homotopy theory.

Language(s) of Instruction

English

Host Institution Course Number

MAT3500

Host Institution Course Title

TOPOLOGY

Host Institution Course Details

<https://www.uio.no/studier/emner/matnat/math/MAT3500/index-eng.html>

Host Institution Campus

Host Institution Faculty

Mathematics and Natural Sciences

Host Institution Degree

Host Institution Department

Mathematics, Mechanics, Statistics

Course Last Reviewed

2022-2023

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