



Course title: TOPOLOGY I

ECTS credit allocation (and other scores): 6

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Natural sciences

Language: English

Number of hours per semester: 30 lectures + 45 classes = 75 hours

Course coordinator/ Department and e-mail: Erasmus coordinator Anna Szczepkowska/ WMil,
anna.szczepkowska@matman.uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES:

Analyzing examples of metric and topological spaces as well as their properties.

LECTURES:

Examples of metric spaces, balls in metric spaces, the convergence of sequences. Open and closed sets. Subspaces. Continuous maps, homeomorphisms, isometries. Connected spaces, compact spaces. Cartesian product. Cantor set. Completeness of metrics. Boundary, interior part and closure of a set. Topological spaces. Metrics on functional spaces.

Learning purpose:

Learning how to use the language of topology, introducing basic notions of topology as natural generalizations of the notions of analysis (continuity, convergence). Developing students' skills in abstract reasoning and understanding abstract notions.

On completion of the study programme the graduate will gain:

Knowledge:

Students have to gain a good understanding of 4-5 basic examples of metric spaces and to understand how to interpret topological notions in this language.

Skills:

Students should learn how to use topological notions and definitions and be able to check these in examples.

Social Competencies:

Students should be convinced that systematic learning and collaboration with others are essential to achieve a success in mathematics..

Basic literature:

1) R. Engelking, K. Sieklucki, „Wstęp do topologii”, wyd. PWN, 1986; 2) K. Kuratowski, „Wstęp do topologii i teorii mnogości”, wyd. PWN, 1980; 3) P. Krupski, „Wstęp do topologii”, wyd. UW, 2003

Supplementary literature:



1) R. Duda, Wprowadzenie do topologii , wyd. PWN, 1986, t. 1-2

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 3,00 ECTS points,

Student's independent work: 3,00 ECTS points,