COURSE DESCRIPTION CARD - SYLLABUS

Course name
Discrete Mathematics [S1MNT1>B-MD]

Course

Field of study
Mathematics of Modern Technologies

Year/Semester
2/4

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
elective

Number of hours

Lecture
15

Laboratory classes
15

Other
0

Tutorials
30

Projects/seminars
0

Number of credit points

4,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge of mathematics.

Course objective

Presentation of basic methods and problems in the field of finite mathematical structures.

Course-related learning outcomes

Knowledge:
• knows modular arithmetic and basic problems related to the theory of graphs and recursion [K_W01(P6S_WG), K_W02(P6S_WG), K_W07(P6S_WG)].

Skills:
• can perform modulo integer operations; is able to find any expression of a simple recursive sequence [K_U01(P6S_UW), K_U02(P6S_UW)].

Social competences:
• is responsible and is aware of the need for reliability at work [K_K01(P6S_KK), K_K02(P 6S_KK)].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lectures: 45-minute test consisting of variously scored questions - pass mark: 50% of points;
Tutorials: 90-minute test and a problem to be solved at home - pass mark: 50% of points;
Laboratory classes: projects (Matlab) and final test - pass threshold: 50% of points.

Programme content

Update:
Lectures& Tutorials& Laboratory classes:
• recursion: finding solutions by characteristic equations and generating functions
• congruences: modular arithmetic

Course topics

Lectures& Tutorials& Laboratory classes:
• recursion: finding solutions by characteristic equations and generating functions
• congruences: modular arithmetic

Teaching methods

Lectures: presentation and blackboard examples;
Tutorials: black board exercises;
Laboratory classes: laboratories - Matlab calculations, presentations.

Bibliography

Basic:
• K.A. Ross, C.R.B. Wright, Matematyka dyskretna, PWN, Warszawa 2012;
• N. Koblitz, Wykład z teorii liczb i kryptografii, WNT 1995.

Additional:
• T.H. Cormen, C.E. Leiserson, R.L. Rivest, Wprowadzenie do algorytmów, PWN, Warszawa 2012.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	60	2,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	40	1,50