Nazwa w jęz. angielskim: Topics in the theory of groups

Dane dotyczące zajęć: Information on course:

Jednostka oferująca: Wydział Matematyki Stosowanej // dr inż. Witold Tomaszewski Course offered by: Faculty of Applied Mathematics // dr inż. Witold Tomaszewski

Język wykładowy:
angielski
Language:
English
Strona WWW: Course homepage:
Skrócony opis:
Short description:
An introduction to the theory of finite groups with particular emphasis on finite groups.
Opis:
Description:
Lecture:
Groups, subgroups and cosets. Lagrange theorem. Normal subgroups and quotient groups. Cyclic, dihedral, symmetric, alternating groups. Linear groups over finite fields. Cojugacy classes. Centre, normalizer, centralizer and commutator subgroups. Cayley theorem. Solvable and nilpotent groups. Homomorphisms and automorphisms of groups. Group constructions - direct, semi-direct and wreath products. The fundamental theorem of finite abelian groups. Generators and presentations of finite groups. Actions of finite groups on sets. Orbits and stabilizers. Cauchy-Frobenius-Burnside Lemma. p-Groups and Sylow Theorems. Finite nilpotent and solvable groups. Classification of groups of small order. Finite simple groups.
Lecture:
full-time studies: 30 h Number of ECTS credits: 2
Literatura:
Bibliography:
 P.J. Cameron, Permutation groups, Cambridge University Press 1999. T.W. Hungenford, Abstract algebra, An introduction, Saunders College Publishing, 1990.

3. M.Ch.Klin, R.Poeschel, K.Rosenbaum, Algebra stosowana dla matematyków i informatyków, WNT, 1992. (polish translation from

german)

4. D.J.S Robinson, A Course in the Theory of Groups,, Graduate Texts in Mathematics (GTM, volume 80), Springer 1996.

5. H.E. Rose, A course on finite groups, Springer 2009.

Efekty uczenia się:

Learning outcomes:

Metody i kryteria oceniania:

Assessment methods and assessment criteria:

During the semester, you can receive 100 points (or more in exceptional cases). You can receive points for: • two tests during classes - 40 for each – the test is passed from 20 points,

• two homeworks -5 for each,

• oral answers during classes – 10 points - 2.5 points can be earned for each application for the task and the correct answer,

• you can get extra points for special activity or extra tasks,

• participation at the classes is obligatory, for unexcused absences of more than two, 5 points will be deducted from the score,

To pass the subject, you must score at least 50 points and pass each test.

Grading scale:

• 50-60 - satisfactory - 3.0

• 60-70 – plus satisfactory - 3.5

• 70-80 – good - 4.0

• 80-90 – plus good - 4.5

• over 90- very good -5.0

Proceedings in the event of failure to meet the conditions for passing.

1. Persons who fail a test will be able to take a failed test during the session, under the same conditions as the test written in the first term.

If the test is not repeated, then the rule from point 2 should be applied.

2. A fiinal test will be organized, for which it will be possible to get up to 80 points. The final test will be passed from 40 points. In this case, the points earned in the semester will not be taken into account, but only the points from the final test. Assessments in this case will be issued according to the following principle:

• 40-60 - 3.0

• 60-70 - 3.5

• 70-80 – 4.0

3. It is allowed to improve one passed test. In this case, the test score will be the arithmetic mean of the scores obtained for that test.

During the summer session wil be organized no more than three additional tests.

Przynależność do grup przedmiotów w cyklach: Element of course groups in various terms:

Opis grupy przedmiotów Course group description	Cykl pocz. First term	Cykl kon. Last term
przedmioty obieralne studia stacjonarne stopień studiów – dowolny kierunek studiów – dowolny, semestr dowolny	2024/2025	
elective courses full-time degree - any field of study - any semester - any		