



Course title:	Combinatorics
Department:	Department of Mathematics
Course code:	F2-Comb
Erasmus subject code:	11.1 Mathematics
Number of contact hours:	45 hours
Course duration:	1 semester
ECTS credits:	6
Course description:	This is an elective course for undergraduate students in Science or Engineering. Recommended to CSc and Mathematics majors. The emphasis is on problem solving and the need of mathematics. Topics covered: multiplication, pigeonhole, inclusion-exclusion principles. Permutations and combinations of sets and multisets, with or without repetitions; derangements and other problems. Binomial and multinomial theorems. Problems leading to recurrence relations. Solving recurrence relations. Generating functions. Some special counting sequences. Games, magic squares and other special topics. Graphs: modeling game strategies with graphs. Coloring and matchings.
Literature:	A. Tucker. <i>Applied Combinatorics</i> , John Wiley and Sons, many editions R. Brualdi, <i>Introductory Combinatorics</i> , Prentice Hall, 1992
Course type:	lectures (30 hours), problem sessions (15 hours)
Assessment method:	two tests during the semester, final exam
Prerequisites:	mathematics maturity; at least one college level math course
Primary target group:	Majors in Computer Science, Mathematics or any area of Science and Engineering, junior level
Lecturer:	Katarzyna Pałasińska, PhD
Contact person:	Katarzyna Pałasińska, e-mail: kpalasinska@gmail.com
Deadline for application:	15th of January
Remarks:	