COURSE DETAIL

GROUPS AND SYMMETRIES
Country United Kingdom - England
Host Institution King's College London
Program(s) King's College London
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mathematics
UCEAP Course Number 136
UCEAP Course Suffix
UCEAP Official Title GROUPS AND SYMMETRIES
UCEAP Transcript Title GROUPS&SYMMETRIES
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

This course provides and understanding of group theory and some of its applications. In this course, students work with cyclic groups, permutation groups, dihedral groups, equivalence classes, cosets, Lagrange's theorem, and direct product groups; are introduced to quotient groups, construct the groups of low order, learn about the conjugation map, and construct conjugacy classes; meet the classical matrix groups, which are examples of continuous (or Lie) groups; work with group homomorphisms, isomorphisms, automorphisms, normal subgroups, kernels of homomorphisms, and prove and make extensive use of the group homomorphism theorem (also known as the first isomorphism theorem); learn about the semi-direct product and semi-direct product groups; construct and investigate the Euclidean group; investigate the geometric structure of some of the classical matrix groups, in particular SU(2)and SO(3); work with group actions on sets, stabilisers and orbits; and prove the Sylow theorems.

Language(s) of Instruction
English

Host Institution Course Number
5CCM232A

Host Institution Course Title
GROUPS AND SYMMETRIES

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

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