Semester 1 AY2014/2015

MAS720 Topics in Discrete Mathematics I

Learning Objective

Prepare students for independent research in the area of Discrete Mathematics.

Syllabus

Topics in Discrete Mathematics will be covered to provide background knowledge necessary to conduct independent research in the area, e.g. topics from Combinatorics, Coding Theory, Cryptography, Network Algorithms, Bioinformatics

Academic Unit

4 AU

Pre-requisite

Approval by the division

Student Assessment

Examinations: 50%

Continuous Assessment: 50%

Additional Information

This course will cover several topics in combinatorial cryptography, namely, how combinatorial techniques and objects are used and applied in the designs of cryptographic systems. Particular topics to be covered include: error-correcting codes, secret sharing schemes, authentication codes, universal hash families, frameproof codes, key distribution schemes, broadcast encryption schemes, perfect hash families, cover-free families etc.