Linnæus University

Course syllabus

Faculty Board of Science and Engineering

School of Computer Science, Physics and Mathematics

4MA114 Integralekvationer, 7,5 högskolepoäng
4MA114 Integral Equations, 7.5 credits

Main field of study
Mathematics

Subject Group
Mathematics

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved 2009-12-01
Revised 2012-12-10 by School of Computer Science, Physics and Mathematics.
Prerequisites, course evaluation and other are revised.
The course syllabus is valid from autumn semester 2013

Prerequisites
4MA115 Functional analysis 7.5 credits or equivalent.

Objectives
Upon completion of the course, the student should be able to:

- apply functional analytic methods on operators and integral equations
- describe definitions and relations in the theory for integral equations and to use these in problem solving
- interpret, communicate and argue using mathematical notions.
- apply the studied theories within one area in applied mathematics, science and engineering.

Content
The course comprises:

- bounded and compact operators
- Riesz theory
- Fredholm theory

- potential theory
- approximations of operators
- quadrature methods
- projection methods
- iterativa methods.

Type of Instruction
Lectures and seminars. Group assignments and compulsory assignments may be given during the course.

Examination
The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Course Evaluation
A course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The result of the course evaluation will be filed at the department.

Required Reading and Additional Study Material
Required reading
Rainer Kress *Linear Integral Equations*, 2nd edition, Springer, 1999. 265 pages.