MATHEMATICS

Study Programme

for

International Students

DEPARTMENT OF MATHEMATICAL SCIENCES

2012

http://www.math.aau.dk/
Research and education at the Department of Mathematical Sciences represent a wide range of mathematical disciplines

- mathematical analysis and mathematical physics
- topology and geometry
- graph theory and coding theory
- probability theory and statistics (biostatistics, econometrics, Bayesian statistics, and simulation).

We integrate mathematics with its applications and cooperate with scientists in other fields and with companies and institutions outside the university, e.g. within forensics, psychology, bio geography and several aspects of medicine.

Research at the Department of Mathematical Sciences in Aalborg is of a high and internationally recognized standard; our graduates are much appreciated by the professional world.

www.math.aau.dk

Studying mathematics at Aalborg University will definitely be a new and rewarding experience for students from abroad.

Our unique study programme combines traditional classroom courses with project work by groups of students – on the next pages we shall try to give you an overview of the topics and themes studied.
Overview

Teaching periods

Odd-numbered semesters:
Courses and project work: September 1st – December
Exams: January

Even-numbered semesters
Courses and project work: February 1st – May
Exams: June

1st and 2nd semester – “Introductory Year”:
First year students follow an introductory year that includes courses in Linear Algebra, an Introduction to mathematical Methods, Calculus and Discrete Mathematics. Moreover, they are introduced to and trained in project work within mathematics. Project topics are chosen within “Discrete Dynamical Systems” and “Combinatorics”, respectively.

Activities at the Introductory Year are in Danish and not suitable for most international students.

Mathematics Programme – 6 semesters:
The mathematics programme after the basic year consists of six semesters within mathematics - every semester has a focus on a particular mathematical area and its applications. The mathematics programme is usually combined with two semesters within a second discipline (computer science, physics, engineering, biology, sports, or within social sciences or humanities), either during the bachelor programme or during the masters programme.

A study programme combining mathematics and economics has started on September 1st, 2009.

It may be complicated to make arrangements allowing you to study another subject together with mathematics; if you wish to do so, please consult the programme coordinator.

In the presence of international students, courses will be given in English.
3rd – 5th semester:

3rd semester - Project Area: Extrema, Theory and Practice
Courses:

- Algebra 1: Groups
- Analysis 1: Convergence and Continuity
- Linearity and Differentiability

4th semester – Project Area: Symmetry
Courses:

- Algebra 2: Rings and Fields
- Analysis 2: Metric Spaces
- Probability Theory
- Complex Analysis

5th semester - Project Area: Statistical Modelling and Analysis
Courses:

- Geometry
- Computer Algebra
- Statistical Inference for Linear Models
6th – 8th semester:

These semesters are more specialized and prepare the students to independent mathematical work aiming at their master’s thesis.

The 6th semester introduces the students to a particular focus area within one of the following fields: Applied Mathematical Analysis and Geometry, Discrete Mathematics, and Mathematical Statistics.

For information of the courses within the 6th semester of the study programme, we refer you to the programme coordinator.

During the last year (7th and 8th semester), the students concentrate on their chosen subject and write their Master’s Thesis, supported by a supervisor from the faculty.

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Entry requirements

Applications will be dealt with on an individual basis by the programme coordinator.

For admission to the semesters, you will need documentation for a progressive range of skills:

3rd semester: Calculus, Linear Algebra

4th semester: Group Theory, Mathematical Analysis

5th semester: Probability Theory

6th – 8th semester: Consult the programme coordinator

All international applicants (Scandinavian students exempted) must document basic written and spoken English by taking an IELTS test (International English Language Testing System). You must obtain a score of minimum 6.5 to be admitted. The test must be either the original document or a copy verified by your home university with stamp and signature.

Contact the Programme Coordinator:

Associate Professor  
Martin Raussen  
Aalborg University  
Department of Mathematical Sciences  
Fredrik Bajersvej 7G  
DK – 9220 Aalborg Oest  
raussen@math.aau.dk
Project based learning

In Denmark, Aalborg University is renowned for having the best study environment in the country, which is mainly due to the study method.

Every semester, a group of students chooses a particular topic to study within a given mathematical area. Together they perform a research-like process supervised by a member of the staff. The group’s work has to be documented in a project report which constitutes the basis for an examination.

BENEFITS:

- Independent work on mathematical subjects early on – motivating and engaging!
- Collaboration with fellow students – rewarding both socially and professionally
- Close contact to dedicated academic teachers
- Possibilities for projects including application aspects (engineering, economics …)
- Development of team work skills appreciated in the “world outside”

It is no problem if you don’t speak Danish. You will be given the opportunity to learn the language by signing up for the Danish language course, which is offered to all international students for free. Besides, most Danish students are used to speaking English and some of them speak German and French as well

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Aalborg University

Aalborg University (AAU), which is situated in Northern Denmark, was inaugurated in 1974 and is thus a young and modern university which, over the years, has grown to become a large, well-established research and teaching institution.

Aalborg University differentiates itself from the older and more traditional Danish universities with its focus on interdisciplinary, inter-faculty studies; an experimental curriculum based on an interdisciplinary basic course with subsequent specialization; a pedagogical structure based on problem-centered, real-life projects of educational and research relevance - which internationally has become known and recognized as 'The Aalborg Experiment' or 'The Aalborg Model'. Furthermore, Aalborg University also greatly emphasizes international relations and cooperation.