Information Meeting – Autumn 2019

3 APRIL 2019
Agenda

• General Information – Application Process, Programmes and Courses
• Courses in Mathematics
• Courses in Numerical Analysis
• Courses in Mathematical Statistics
• Elective Courses
• Exchange Studies
Admission Round for Courses – Autumn 2019

• Application round is open **15 March - 15 April** on antagning.se

• Programme students
  – Apply within the programme! Some courses are only available within the programme
  – Study place guarantee within the programme for courses given by Faculty of Science
  – Check prerequisites!

• Stand-alone courses
  – Are available at other institutions, no study place guarantee
  – For courses at LTH – apply for special studies no later than 15 April
Bachelor’s Programme in Mathematics

- 3 years, 180 higher education credits
- 3 main disciplines: Mathematics, Mathematical Statistics, Numerical Analysis

- Structure:
  - compulsory courses – first year, 60 credits
  - alternative-compulsory courses, 45 credits in mathematics, statistics, numerical analysis - chosen from pre-defined list
  - elective courses, 60 credits – at least 30 credits in another subject (other subjects)
  - Bachelor’s Degree Project, 15 credits – MATK11, MASK11, NUMK11
Bachelor’s Programme in Mathematics

COMPULSORY COURSES

First semester

- MATA21 Analysis in One Variable, 15 hp
- MATA22 Linear Algebra 1, 7.5 hp
- NUMA01 Computational Programming with Python, 7.5 hp

Second semester

- MATB21 Analysis in Several Variables 1, 7.5 hp – half pace, first half
- MATB22 Linear Algebra 2, 7.5 hp – half pace, first half
- MATB23 Analysis in Several Variables 2, 7.5 hp – half pace, second half
- MATA23 Foundations of Algebra, 7.5 hp - half pace, second half
Bachelor’s Programme in Mathematics

ALTERNATIVELY COMPULSORY COURSES

Mathematics

• MATB13 Discrete Mathematics, 7.5 hp
• MATB24 Linear Analysis, 7.5 hp
• MATC12 Ordinary Differential Equations 1, 7.5 hp
• MATM11 Algebraic Structures, 7.5 hp
• MATM12 Analytic Functions, 15 hp
• MATM15 Number Theory, 7.5 hp
Bachelor’s Programme in Mathematics

ALTERNATIVELY COMPULSORY COURSES

➢ Mathematics – given in Autumn 2019
  • MATB13 Discrete Mathematics, 7.5 hp
  • MATB24 Linear Analysis, 7.5 hp
  • MATC12 Ordinary Differential Equations 1, 7.5 hp
  • MATM11 Algebraic Structures, 7.5 hp
  • MATM12 Analytic Functions, 15 hp
  • MATM15 Number Theory, 7.5 hp
Bachelor´s Programme in Mathematics

ALTERNATIVELY COMPULSORY COURSES

- Mathematical Statistics
  - MASA01 Mathematical Statistics, Basic Course, 15 hp
  - MASC01 Probability Theory, 7.5 hp
  - MASC02 Inference Theory, 7.5 hp
  - MASC03 Markov Processes, 7.5 hp
  - MASC04 Stationary Stochastic Processes, 7.5 hp
  - MASC05 Design of Experiments, 7.5 hp
Bachelor’s Programme in Mathematics

ALTERNATIVELY COMPULSORY COURSES

- Mathematical Statistics – given in Autumn 2019
  - MASA01 Mathematical Statistics, Basic Course, 15 hp
  - MASC01 Probability Theory, 7.5 hp
  - MASC02 Inference Theory, 7.5 hp
  - MASC03 Markov Processes, 7.5 hp
  - MASC04 Stationary Stochastic Processes, 7.5 hp
  - MASC05 Design of Experiments, 7.5 hp
Bachelor's Programme in Mathematics

ALTERNATIVELY COMPULSORY COURSES

- Numerical Analysis
  - NUMA41 Basic Course in Numerical Analysis, 7.5 hp
  - NUMA11 Numerical Linear Algebra, 7.5 hp
  - NUMN19 Numerical Approximation, 7.5 hp (old code NUMA12)
Bachelor’s Programme in Mathematics

ALTERNATIVELY COMPULSORY COURSES

- Numerical Analysis – given in Autumn 2019
  - NUMA41 Basic Course in Numerical Analysis, 7.5 hp
  - NUMA11 Numerical Linear Algebra, 7.5 hp
  - NUMN19 Numerical Approximation, 7.5 hp
Bachelor’s Programme in Mathematics

ELECTIVE COURSES – 60 CREDITS

• 30 credits must be outside the mathematical disciplines

• More courses in mathematics, statistics and numerical analysis are available

• See complete list of courses on
  http://www ctr.maths.lu.se/education/mathematics-bachelor-s-programme/courses/

• See recommended study path on
  http://www.maths.lu.se/english/education/mathematics-bachelors-programme/programme-structure/recommended-study-path/
Bachelor’s Programme in Mathematics

ELECTIVE COURSES

– Physics – see www.fysik.lu.se/english/education
  » FYSA01 Physics 1: General Physics, 30 credits, given in Swedish every Autumn, and English every Spring
  » FYSB11 Basic Quantum Mechanics, Autumn second half
  » FYTB14 Classical Mechanics and Special Relativity, Spring first half
    (follow up with FYTN09 advanced course)

– Economics – see www.nek.lu.se/en
  » NEKA12 – National Economy, Basic Course, 30 credits, given in Swedish
  » Bachelors Programme in International Business, starts Autumn 2019
Bachelor’s Programme in Mathematics

ELECTIVE COURSES

– Computer Science – LTH

» EDAA01, Programming second course 7.5 credits, Swedish, Autumn, quarter pace
» EDAN26, Multicore Programming, 7.5 credits, Swedish, Autumn, first half
» EDAN75, Optimising Compilers, 7.5 credits, Autumn, first half
Bachelor’s Programme in Mathematics

OTHER RELEVANT COURSES – given in the Autumn 2019

• MATC20 Image Analysis, 7.5 hp - half pace, first half
• MATC51 Optimization, 7.5 hp - half pace, second half
• MATC70 Matrix Theory, 7.5 hp - quarter pace, whole semester

• These courses are given in cooperation with Department of (Applied) Mathematics at LTH and are only available for programme students.
Bachelor’s Programme in Mathematics

DEGREE PROJECT - 15 CREDITS

• Can be done in
  – Mathematics - course code MATK11
  – Mathematical Statistics - course code MASK11
  – Numerical Analysis - course code NUMK11

• MATK11 and NUMK11 are only available within the programme!

Before you apply contact
  – Anna-Maria Persson for MATK11
  – Magnus Wiktorsson for MASK11
  – Claus Führer for NUMK11
Master’s Programme in Mathematics

• 2 years, 120 higher education credits

• Two specialisations: Mathematics and Numerical Analysis

• Structure:
  - alternative-compulsory courses, 45 credits in mathematics/numerical analysis (chosen from pre-defined list, according to your specialisation)
  - elective courses, 45 credits (at most 30 credits at basic level)
  - degree project – Master’s thesis, 30 credits
Master’s Programme in Mathematics

• Course selection

  – First semester: courses are selected at the introductory meeting

  – Upcoming semester: you apply for the courses within your programme on antagning.se (deadline 15 April for courses in Autumn 2019)

  – Follow your specialisation, check prerequisites, consult the student counsellor

  – Practical information: http://www.maths.lu.se/english/education/mathematics-masters-programme/
Courses in Mathematics, Autumn 2019

UPPER BASIC LEVEL

- MATB13 Discrete Mathematics, 7.5 hp - half pace, second half
- MATB24 Linear Analysis, 7.5 credits - half pace, first half
- MATC12 Ordinary Differential Equations 1, 7.5 hp - half pace, second half
- MATC20 Image Analysis, 7.5 hp - half pace, first half
- MATC51 Optimization, 7.5 hp - half pace, second half
- MATC70 Matrix Theory, 7.5 hp - quarter pace, whole semester
Courses in Mathematics, Autumn 2019

ADVANCED LEVEL

- MATM12 Analytic Functions, 15 hp – half pace, whole semester
- MATM13 Differential Geometry, 7.5 hp – half pace, first half
- MATM15 Number Theory, 7.5 hp – half pace, second half
- MATM30 Mathematical Foundations of Probability, 7.5 hp – half pace, second half
- MATP15 Linear Functional Analysis, 7.5 hp - quarter pace, whole semester
- MATP25 Specialised Course in Linear Functional Analysis, 7.5 hp - quarter pace
Courses in Numerical Analysis, Autumn 2019

UPPER BASIC and ADVANCED LEVEL

- NUMA11 Numerical Linear Algebra, 7.5 hp - half pace, first half
- NUMN12 Numerical Methods for Differential Equations, 7.5 hp - half pace, second half
- NUMN18 Numerical Analysis for Elliptic and Parabolic Diff. Equations, 7.5 hp - half pace, 2nd half
- NUMN17 Numerical Analysis Seminar Course, 7.5 hp, (NOT on antagning.se yet!)