

# NordSecMob-Master's programme in Security and Mobile Computing

Student admission and selection

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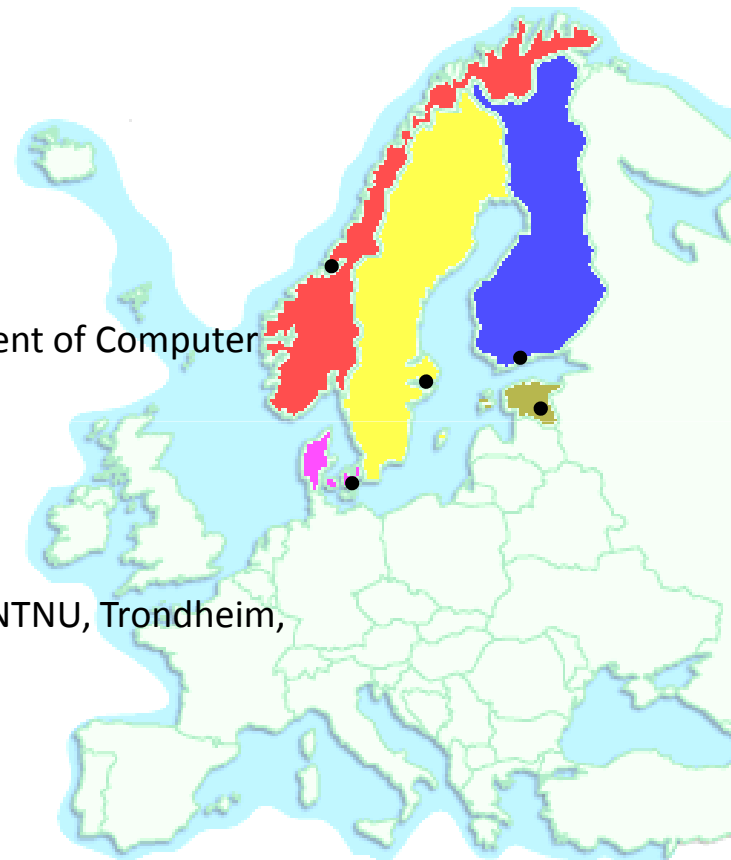


# NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

## NordSecMob-consortium

- Aalto University School of Science and Technology,  
Faculty of Information and Natural Sciences, Department of Computer  
Science and Engineering, Espoo, Finland
- Technical University of Denmark DTU,  
Lyngby, Denmark
- The Royal Institute of Technology KTH,  
Stockholm, Sweden
- The Norwegian University of Science and Technology NTNU, Trondheim,  
Norway
- University of Tartu UT,  
Tartu, Estonia



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## Background of NordSecMob- programme

- based on long term research contacts: NordSec- workshops started in 1996
- the aim of NordSec-workshops is to bring together researchers and practitioners within computer security in the Nordic countries
- first discussions of joint study programme in NordSec-workshop 2004 with the members of NordSec -programme Committee
- Erasmus Mundus application 2005
- Erasmus Mundus NordSecMob-programme running 2006-
- NordSecMob-students and alumni are active participants of NordSec-conference since 2008

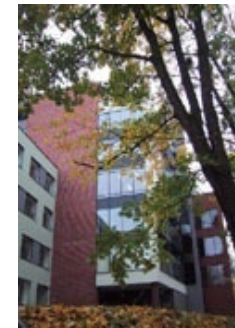


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## Why Data Security and Mobile Computing in Nordic Countries?

- Scandinavia and Nordic countries have been very innovative in mobile communication.
  - The first regional cellular network started here giving the telecom industry a very good starting point to the second and third generation networks and devices
  - We were pioneers in large scale internet-usage in Europe.
  - The biggest on-line banking system in the world has covered the area of Scandinavia for over fifteen years.
  - A broadband Internet-connection to every home is assumed as a public service.
- Research and development in security and mobile computing have created a world class industrial and scientific cluster



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## Why a Joint Study Programme Between Nordic Universities?

- The participating universities are renowned research and educational institutions in Europe and top-ranking universities of technology in Nordic countries.
  - Each University has their own area of expertise
  - Each offers their best to the student
  - A good start for an international career
- The Nordic countries have individual identities but share a common heritage
  - One area, several countries



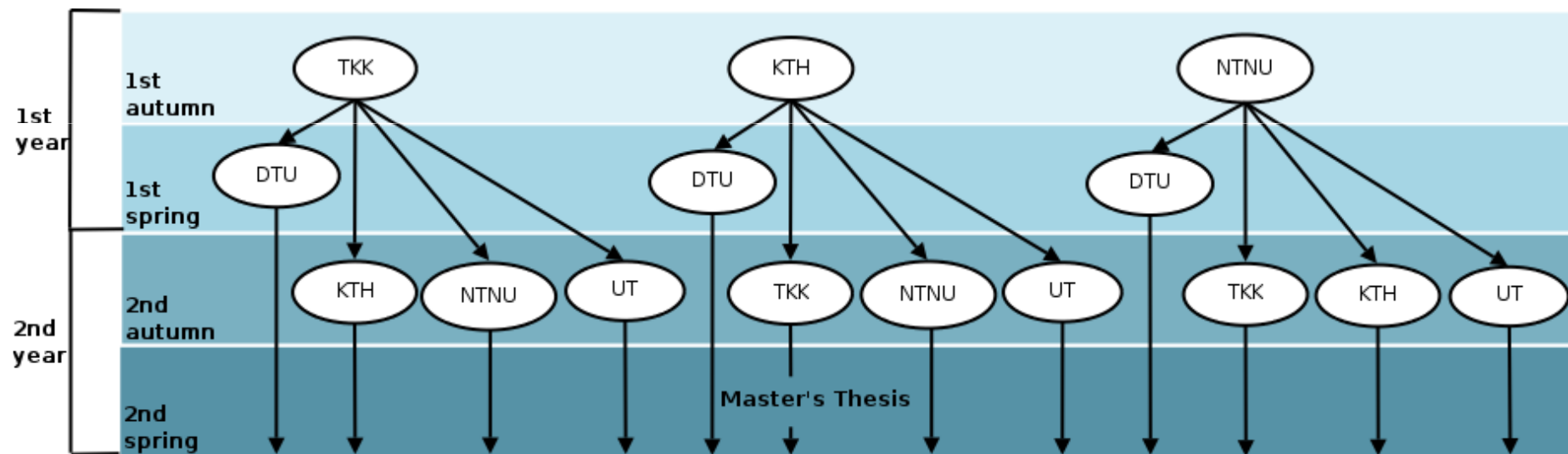
## NordSecMob-curriculum

- A joint two year curriculum is defined which involves always two universities
- The 120 ECTS credit points will be divided into two blocks:
  - 1-2 semesters of teaching (30-60 ECTS) will be provided by a **home** university
  - 1-2 semesters of teaching (30-60 ECTS) will be provided by a **host** university.
- The programme includes three semesters of courses + a fourth research semester (Master's thesis, 30 ECTS)
- Double degree: All students will graduate with M.Sc degree or equivalent from both their home university and a M.Sc degree or equivalent from their host university.

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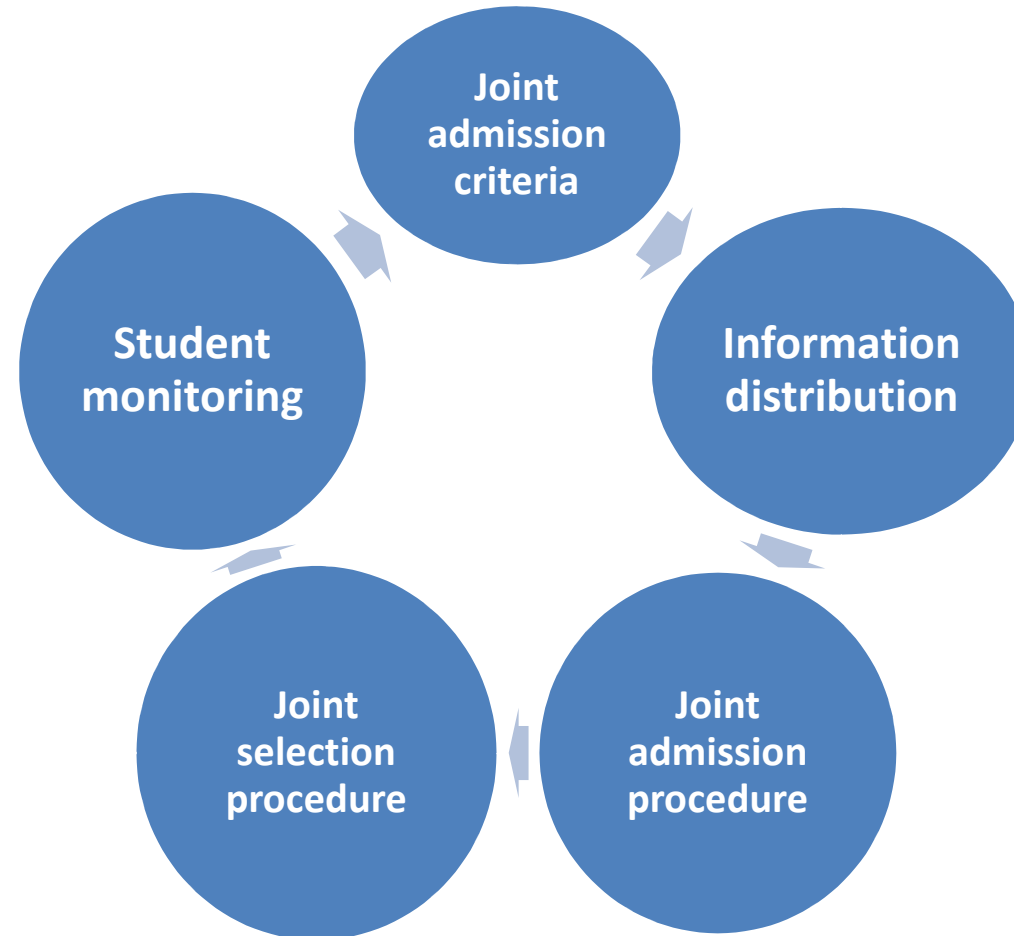
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## NordSecMob-student mobility plan



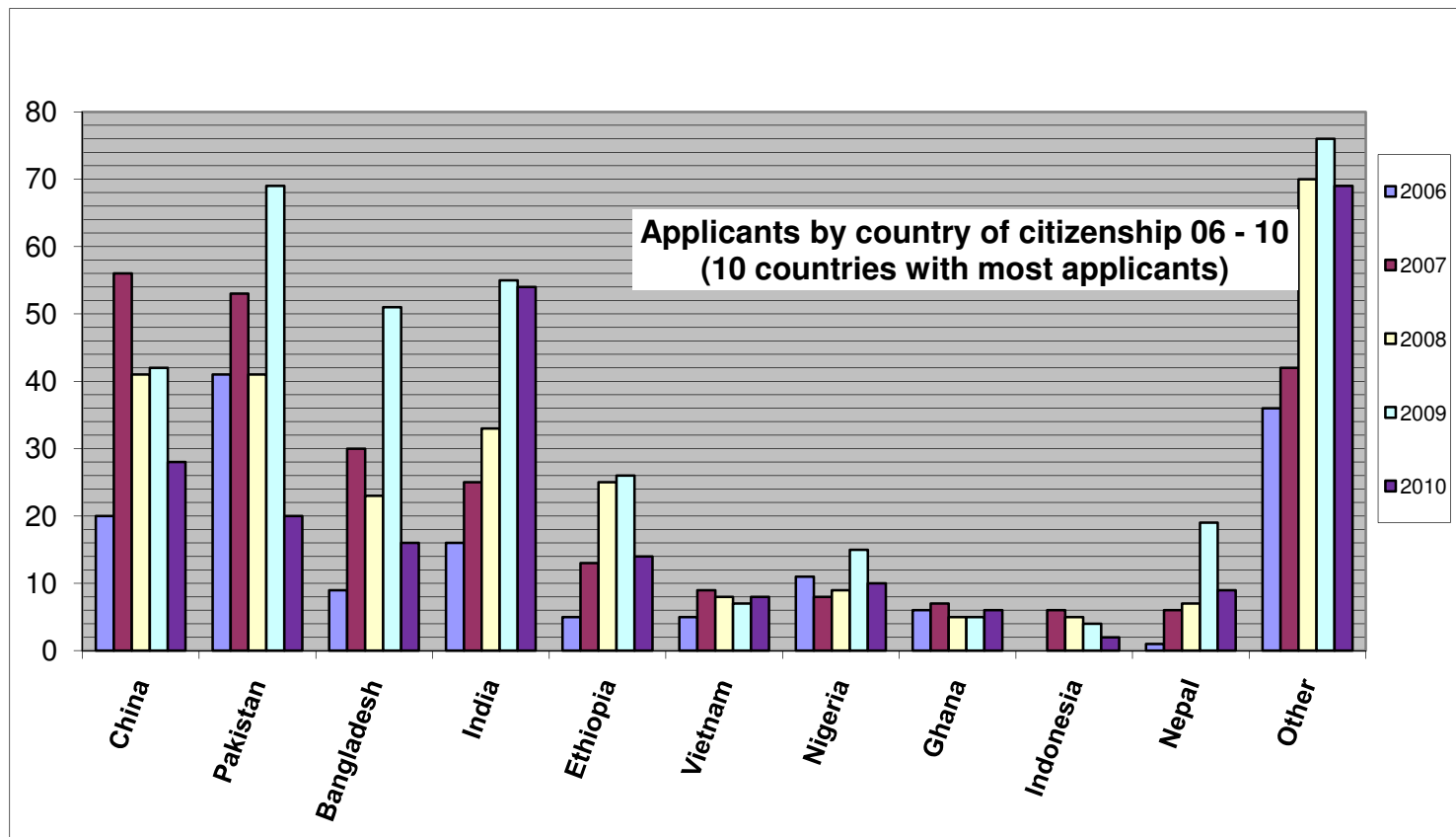
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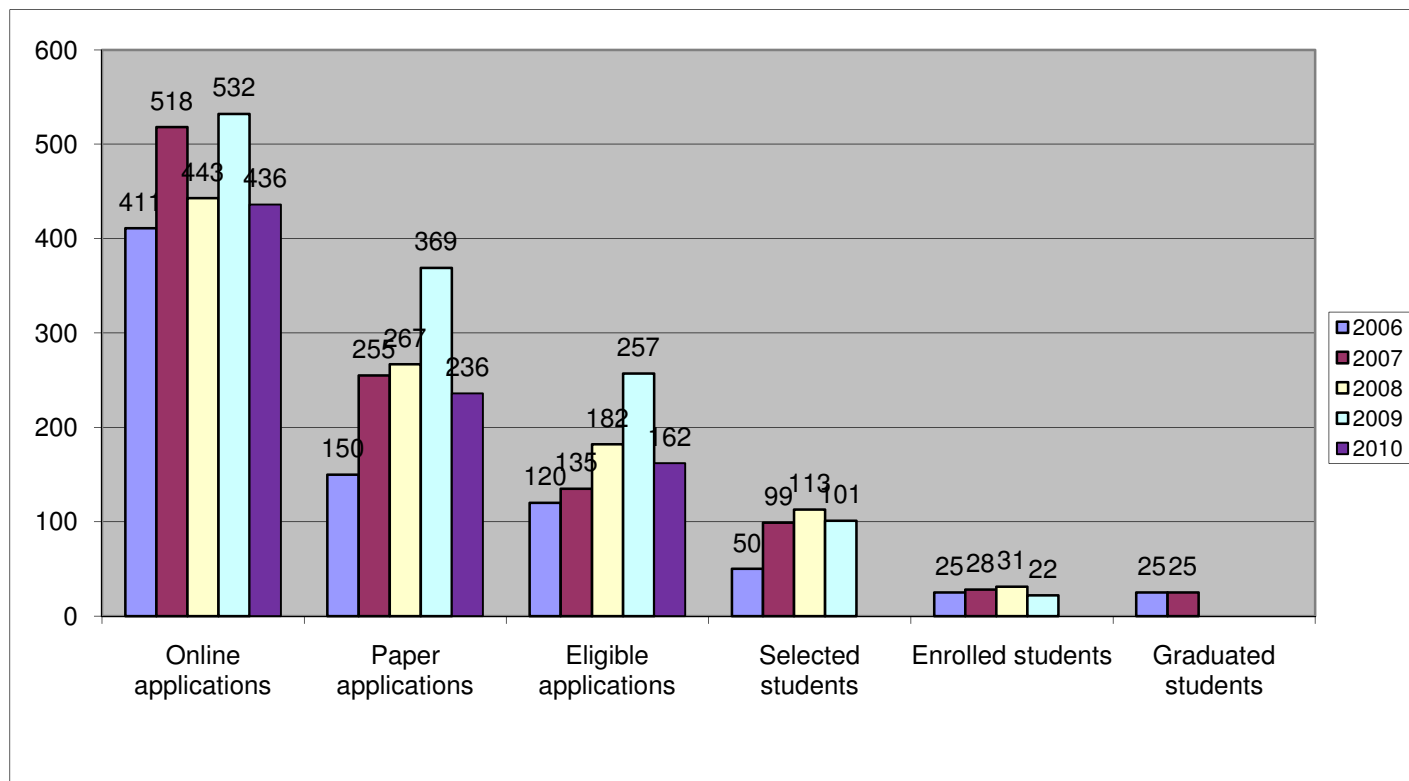
### Statistics 2006-2010



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## Statistics 2006-2010



## Joint admission criteria

- joint admission criteria for the whole programme
  - several study tracks
- **Academic background of the student - required degree**
- NordSecMob: “Admission criteria to the programme is a high quality Bachelor's degree encompassing a minimum of 180 ECTS credits in Engineering (Computer Science or Information technology) or equivalent studies i.e. a degree consisting of at least three years of full-time studies. “
- “The applicants should have **solid knowledge of** mathematics (discrete mathematics), programming skills, data structures and algorithms, computer architecture and basics of computer networks. In addition, **basic knowledge of the following subject areas will be an advantage:** databases and database management, principles of theoretical computer science, logic in computer science, software engineering, operating systems, concurrent programming.”
- →the content of previous studies to be analysed carefully

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- **language requirements**
  - joint language requirements : joint minimum criteria
    - TOEFL, IELTS, other recognized certificates (from the testing center!)
  - NordSecMob:
    - **TOEFL**
      - » TOEFL minimum scores are:
        - » 580 / writing 4,0 (paper-based test)
        - » 237 / writing 4,0 (computer-based test)
        - » 92 / writing 22 (internet-based test)
    - **IELTS**
      - » IELTS minimum score is 6,5 / writing 5,5
    - **Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE)**
      - » grade B or A
- **methods:**
  - paper-based selection
  - international (subject) tests (GRE)
  - interviews
  - portfolios



# NordSecMob Master's Programme in Security and Mobile Computing

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## Joint admission and selection procedure

- joint programme website for the distribution of information for applicants
  - centralized reception of email enquiries
  - centralized reception of joint on-line applications + paper applications
    - joint online form + application management system (database)
  - centralized eligibility check of applications
    - Only eligibles to academic evaluation
  - to automate the distribution of information via online-database system (from applying phase until selection) for applicants
  - to respect national and university specific rules!
- 
- The consortium needs human and technical resources to implement a smooth and consistent admission and selection procedure!
  - admission officers must be professionals
  - hundreds of applications: time is limited!
  - good and quick service is a must!



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## Joint evaluation criteria and selection procedure

- Evaluation criteria to be agreed with all consortium partners
  - recognition and quality of the home university
  - language skills
  - content of previous degrees
  - study success
  - motivation
  - recommendations
  - relevant work experience or other activity (patents, publications)
- different weights for each criteria



**Joint academic evaluation of applications with database**

- eligible application are scanned to the database
- all partners have access to database and participate to evaluation
- three steps:
  1. pre-screening
    - academic pre-screening (the content of previous degrees) → YES/MAYBE/NO cases
  2. full evaluation (the whole application): academic evaluation by at least two academic evaluators from different partner universities (usually 3-5)
  3. selection meeting:
    - all partners participate
    - refining and adjustments of the evaluation marks for each selection criteria
      - » ranking order of students is automatically established by the database according to numeric evaluation of the applicants
- workload can be shared!

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- **NordSecMob: one phase selection: student is selected to the whole study track: Univ A + Univ B**
- **two-phase selection: student is selected to the first university, the selection to second/third university is done later on**
- admission and evaluation criteria to be updated annually if necessary
- sharing best practices and knowledge about different degrees and universities
  - NordSecMob: Database of university rankings and evaluations
- excellent academic performance: good luck or result of an effective selection process?
  - monitoring of the students: feedback to selection procedure
  - alumni may contribute to selection procedure: country specific knowledge regarding universities and degrees

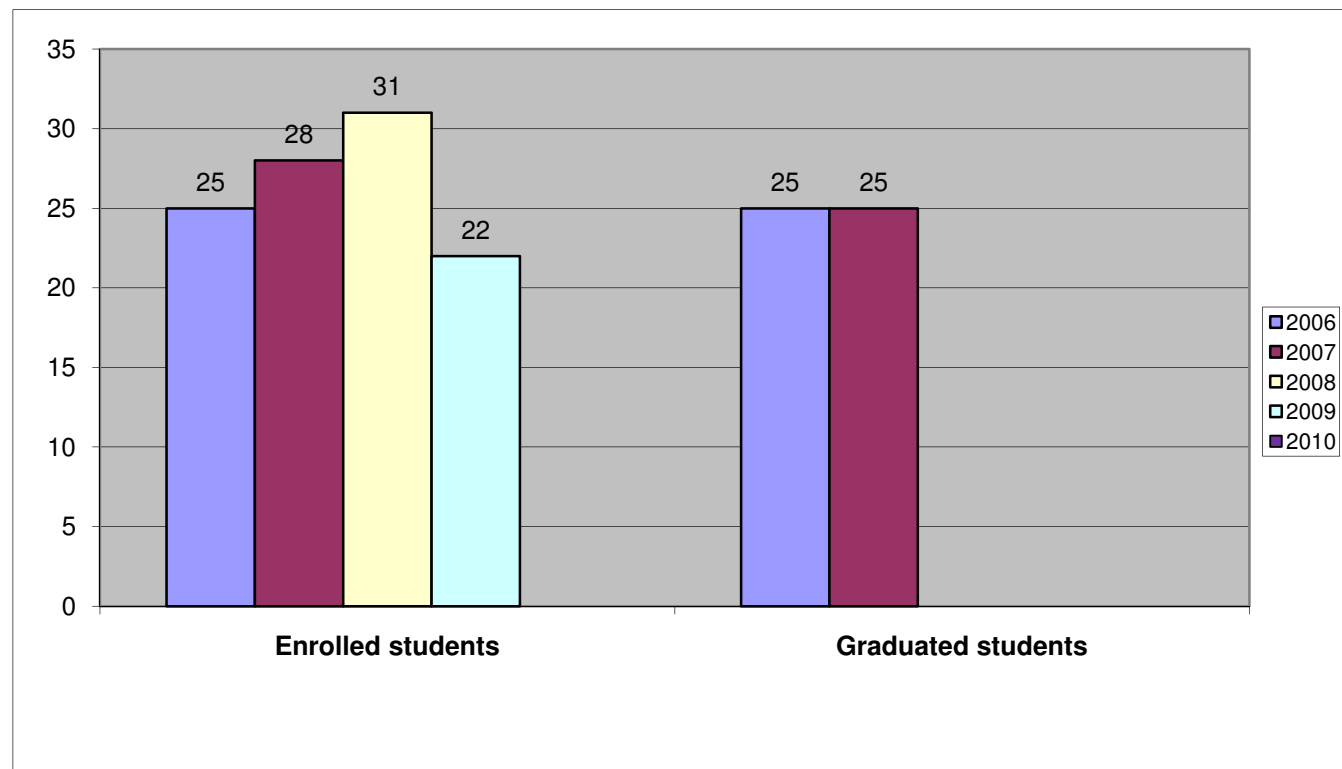




# NordSecMob Master's Programme in Security and Mobile Computing

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## NordSecMob enrolled and graduated students



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