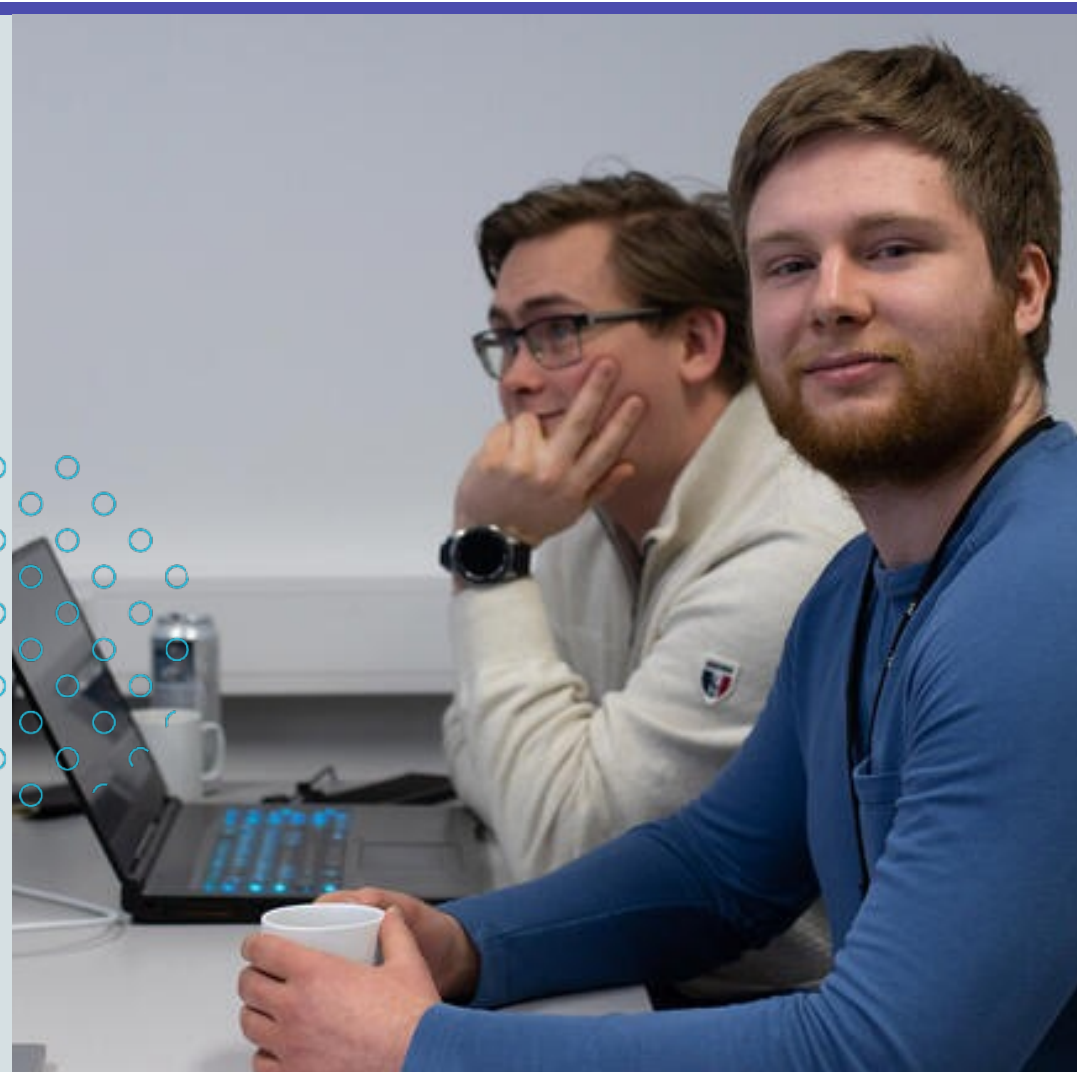# Master of Science in Computer Science

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Introduction

- Campus Kongsberg at USN offers Computer Science at bachelor/master/Ph.D. levels.

- The master's program in Computer Science includes two subprograms:

  - <u>MACS</u>: Full-time (2 years) or part-time (3 years)

  - <u>MACSI</u>: Industrial masters (3 years)

- **Specializations:** Students can select among the following options:

  - M.Sc. in Computer Science with specialization in <u>Cybersecurity</u>

  - M.Sc. in Computer Science with specialization in <u>Embedded Systems</u>

  - M.Sc. in Computer Science (without any specialization)

Delivery model

- Students need to acquire 120 ECTS for graduation:
  - 6 courses (60 ECTS) + Thesis (60 ECTS)
- Each course is of **10 ECTS** (means 40+ hours/week)
- Teaching Language: English
- **Delivery model:**
  - CS courses run serially in 6 weeks models and students take one course at a time
  - Six weeks are distributed as:
    - Week 1: **Preparation** week
    - Week 2: **Intensive lectures** week
    - Weeks 3-5: **Project assignments** weeks
    - Week 6: **Assessment** week (could be combined with weeks 3-5)

Courses

<u>Obligatory courses (30 ECTS): Fall semesters</u>

1. Data Management (10 ECTS)

2. Cybersecurity (10 ECTS)

3. Hardware/software Co-design of Embedded Systems (10 ECTS)

Elective courses (30 ECTS): Spring semesters

1. System Administration and Security (10 ECTS): Required for specialization in cybersecurity

2. CyberCrime, IT Security and Risk (10 ECTS): Required for specialization in cybersecurity

3. Embedded real-time Programming (10 ECTS): Required for specialization in Embedded Systems

4. Safety-Critical Systems (10 ECTS): Required for specialization in Embedded Systems

5. Data Science (10 ECTS)

Core & elective courses (1st year)

Weeks	Fall semester	Spring semester	
33-38	1- CS4010: Data Management	4a- CS4120: Embedded Real-Time Programming	4b- CS4220: System Administration and Security
39-44	2- CS4210: Cyber Security		5- CS4020: Data Science
45-50	3- CS4110: HW/SW Co-Design of Embedded Systems	6a- CS4130: Safety-Critical Systems	6b- CS4230: Cyber Crime, IT Security & Risk

Embedded Systems specialization

Cybersecurity specialization

Master's Thesis

- 60 ECTS: 3rd and 4th (full-time students), 5th and 6th (Industrial masters)

- Amongst others, the output will be a thesis report (monograph).

- They have mandatory modules on "*research methods*" and "*project management*".

- There will be public presentations and defence.

- IM students bring topics from their corresponding companies:

  – Will have an internal supervisor (in addition to company supervisors)

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Exchange for Master's in Computer Science

- Our program has currently exchange agreements with **16** universities (**8** countries):

ERASMUS+:

- Sweden (2): Lund Univ., Univ. College of Skövde

- Denmark (3): Aalborg Univ., Aarhus Univ., Univ. of Southern Denmark

- Finland (1): Univ. of Helsinki

- Germany (4): Darmstadt Uni. of Tech., KIT, Uni. of Padeborn, Munich Univ. of Applied Sciences

- Italy (1): Ploitecnico di Milano (PdM)

- Portugal (1): Univ. of Porto

- Bilateral:

- Australia (2): Queensland Uni. of Technology, Uni. of Technology Sydney

- UK (2): Univ. of Leeds, Heriot-Watt Univ.

More info: **bit.ly/usnex**

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Industrial Master

- Workload: 50% of the time, but varies over time between 0% and 100%
- Paid 50 % of normal BSc engineer salary
- 3 years (34 months) temporary employment at company
- No commitment when 34 months employment contract expires
- Work as a regular employee
  - Normal engineering work
  - Testing and production follow up
  - Internal and external meetings
  - Customer contacts
  - Sub-vendor contracts
  - Project responsibilities
  - Social functions

38 Partner Companies

Companies in Kongsberg/Drammen

APPLIED AUTONOMY · data respons · KONGSBERG Precision Cutting Systems · KONGSBERG TARGET SYSTEMS · Optime subsea · proXpect drones · semcon · YETIMOVE WE ARE AUTONOMY

ARGOS · TechnipFMC · KONGSBERG

Companies in Asker and Oslo

COGNITE · DNV · DXC TECHNOLOGY · indra · IZY · mnemonic · nebb · simula · sopra steria · telenor

Companies in Vestfold, Telemark and Kristiansand

Barnfind Technologies · bouvet · COGNIA TECHNOLOGY · DNV Imatis · equinor · GUARD · HORTEN KOMMUNE · INEOS · JOTRON · Once 360 · RED ROCK

RHEINMETALL · VESTFOLD AUDIO

Companies in Akershus and Østfold

BARCO · EIDEL EIDSVOLL ELECTRONICS AS · Layher

Universitetet i Sørøst-Norge

Collaboration Opportunities

- Exchange programs (ERASMUS+)

- Staff mobility & Research visits

- Joint project applications

- Supervision of graduate students (M.Sc. & Ph.D.)

Thank you for your attention!

Inbound Exchange: **bit.ly/csin**

Outbound Exchange: **bit.ly/usnex**

MACS (Full-time): **bit.ly/usncs**

MACSI (Industrial master): **bit.ly/usncsi**

Feel free to contact me if you have any questions:

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Inbound exchange: