

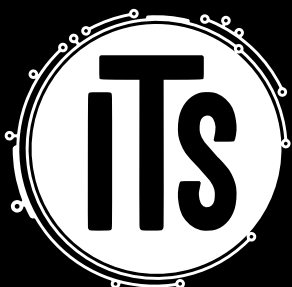


**UNIVERSITY
OF OSLO**

Department of Technology Systems

Master's Degree Programmes in Technology Systems

Your Path to Expertise & Innovation





Welcome to the Department of Technology Systems!

Join us for an exciting educational journey in technology systems!

Our study programmes offer unique teaching and supervision experiences and are designed to shape the problem solvers of tomorrow. Be a part of our mission to increase Norway's global competitiveness in the key technology domains!

Explore our four master's degree programmes and study options in the emerging technology fields.

Take a leap and start your future with us!

Renewable Energy Systems

In a world where the demand for clean and sustainable energy is paramount, renewable resources like solar, wind, and hydropower offer unlimited and accessible solutions. Our master's degree programme will provide you with in-depth knowledge and practical skills to innovate, develop, and promote technological advancements for a sustainable and resilient energy future. Gain a comprehensive understanding of how to generate, convert, store, distribute, and manage green energy to meet both the current and the future national and global needs.

This study programme focuses on critical issues central to the green energy transition and provides you with the knowledge and expertise to contribute to this meaningful change.

You can become a specialist in:

- **Sustainable Energy Systems:**
Understand the principles and applications of sustainable energy solutions
- **Energy Systems and Market Mechanisms:**
Gain insight into the dynamics of energy markets and the mechanisms that drive them
- **Smart Energy Grids and the Internet of Things:**
Explore the integration of smart grids with IoT technologies for enhanced energy management
- **Sustainable Energy Technologies:**
Learn about the latest sustainable energy technologies and their impact on societies and the environment

Work and further studies

As societies and industries strive for sustainable development, the demand for qualified professionals in the renewable and clean energy system sectors is rapidly increasing. Our master's degree programme in Renewable Energy Systems offers a solid foundation for a variety of exciting career paths in the green energy industries and enables you to contribute to a more sustainable and resilient energy future.

A completed master's degree also opens doors to a career in academia at the University of Oslo or other prestigious universities worldwide.

In 2022, this study programme received the UiO Board's Education Award for its comprehensive scope and innovative teaching approaches. This award reflects our commitment to providing top-tier education and fostering academic excellence.



Cybernetics and Autonomous Systems

Are you eager to delve into the science and technology that drive the dynamics and interactions of physical systems? The advanced engineering and computing techniques create complex systems that monitor and control processes across various fields, from industry and energy production to environmental monitoring, transportation, and aerospace. By joining the master's degree study option in Cybernetics and Autonomous Systems, you will have the opportunity to explore a diverse range of topics, from the depths of the ocean to the far reaches of Mars.

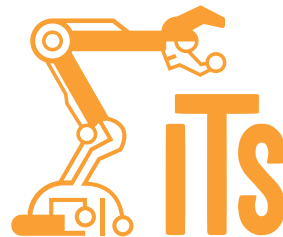
This master's degree study option will provide you with knowledge, skills and expertise in the following technological areas:

- **Design, Navigation and Control of Autonomous Vessels:**
Master the technologies that guide and manage drones or self-driving cars
- **Practical Robotics and Rapid Prototyping:**
Get hands-on experience in building and prototyping robotic systems
- **Swarm Intelligence and Multiagent Systems:**
Explore the dynamics of intelligent systems that work together
- **Computer Vision and Pattern Recognition:**
Learn to develop systems that interpret and understand visual data

Work and further studies

With a master's degree in Cybernetics and Autonomous Systems, you will be involved in the latest technological advancements in our increasingly digitalized, automated, and robotized world. You can pursue a career in developing autonomous vessels for the maritime industry, work on smart cities, contribute to defence and aerospace projects, or engage in R&D for biomedical and environmental technology.

A completed master's degree also qualifies you for further academic career at the University of Oslo or other prestigious universities worldwide.



Security in Cyber-Physical Systems

Do you want to learn about challenges related to hacking, cyber-attacks and protection strategies for critical sectors such as energy, health, and transport? The master's degree study option in Security in Cyber-Physical Systems combines knowledge on computation, networking, and physical processes. It will provide you with an in-depth understanding of systems where computer-based algorithms control or monitor physical processes, such as smart grids, self-driving cars, drones or industrial control systems. You will have the opportunity to apply theoretical concepts to solve real-world problems through practical exercises and collaborations with research communities and industrial partners nationally and internationally.

With the knowledge you acquire with us, you can become a specialist in:

- **Design of Secure Cyber-Physical Systems:**

Master the principles of creating robust and secure microgrids, autonomous vehicles or industrial control systems

- **Threat Detection and Mitigation:**

Learn to identify and neutralise cyber threats in such systems

- **Secure Smart Technologies, Industrial Systems, and Critical Infrastructure:**

Ensure the safety and integrity of essential technologies and infrastructures such as power grids, smart buildings or robotic assembly lines

Work and further studies

Earning a master's degree in Security in Cyber-Physical Systems opens the door to a diverse array of job opportunities in both the public and private sectors. As digitalization advances, the potential for innovation grows and increases the demand for specialists with solid expertise in this field. You can be one of these essential specialists!

By completing this master's degree, you can qualify for a career in academia either at the University of Oslo or other prestigious universities worldwide.



Space Systems

Are you fascinated by the idea of exploring space or observing Earth from above? If the answer is yes, join our master's degree study programme in Space Systems. We will take you on an exciting journey from designing mission concepts to constructing satellites and exploring planets. You will gain in-depth knowledge about the development of space systems, and you will learn how to design them to meet high user demands and challenging environments. You will also get to know how space applications address national and international challenges, including societal security, environmental monitoring, and a sustainable future.

This master's degree programme will provide you with knowledge, skills and expertise in the following areas:

- **Space System Engineering:**
Master the principles of designing and developing space systems
- **Environmental Effects and Mitigation Strategies:**
Understand the impact of the space environment and learn how to mitigate its effects
- **Space Sensor Technologies:**
Learn about various sensors used in space exploration
- **Satellite Communication:**
Explore the technologies behind effective satellite communication
- **Small Satellite Design:**
Gain hands-on experience in designing small satellites

Work and further studies

A master's degree in Space Systems offers job opportunities in both the public and private sectors, nationally and internationally. You could find yourself working at NASA, Norwegian Space Agency, the Norwegian Defence Research Establishment (FFI) or at one of the leading companies such as Space Norway, Kongsberg, EIDEL.

A completed master's degree also qualifies you for an academic career at the University of Oslo or other prestigious universities worldwide.

