



FITech

FINNISH INSTITUTE OF TECHNOLOGY

COURSES & PROGRAMS FALL 2018

FITECH – FAST TRACK TO THE FUTURE OF TECHNOLOGY

Cooperative university FITech creates the future of technology: it develops innovation capabilities in Finland and so improves our competitive advantage on the global markets. The FITech innovation community in Turku creates new cooperation models, bringing companies, universities, and students together. FITech provides a comprehensive view to studies in all Finnish universities of technology and to cooperation with the companies in the area.

FITech Master of Science in Technology Programs

MASTER OF SCIENCE IN TECHNOLOGY, ENTEDI: EFFICIENT ENERGY USAGE & ENERGY ECONOMICS PROGRAMME, 120 ECTS (Mainly in Finnish!)

The program gives insight about the energy production and consumption in Finland and elsewhere and how it relates to efficient energy usage, energy economics and environment.

Apply from: 12/2018

Location: Mostly distance studies, some intensive studies e.g. laboratory work in Turku or Lappeenranta

Coordinating university: Lappeenranta University of Technology

More info & registration: www.fitech.io

MASTER OF SCIENCE IN TECHNOLOGY, MEC PROGRAMME 120 ECTS (Mainly in Finnish!)

The aim of the program is to provide engineers in mechanical engineering especially for the needs of the Finnish marine and automotive industry and their subcontractors.

Apply from: 12/2018

Location: Mostly distance studies, some intensive studies e.g. laboratory work in Turku or Lappeenranta

Coordinating university: Lappeenranta University of Technology

More info & registration: www.fitech.io

MASTER OF SCIENCE IN TECHNOLOGY, ELEC PROGRAMME 120 ECTS (Mainly in Finnish!)

The aim of the program is to provide engineers in electrical engineering especially for the needs of the Finnish marine and automotive industry and their subcontractors.

Apply from: 12/2018

Location: Mostly distance studies, some intensive studies e.g. laboratory work in Turku or Lappeenranta

Coordinating university: Lappeenranta University of Technology

More info & registration: www.fitech.io

MASTER OF SCIENCE IN TECHNOLOGY, MECHANICAL ENGINEERING 120 ECTS (Mainly in Finnish!)

This program enables students to manage information related to the life cycle of mechanical systems as well as how that information can be translated into decisions. The program also teaches students to apply digital tools relevant to the field.

Major: Life-cycle management and engineering

Minor: Mechanical design

Starts: Fall 2018

Location: Turku

Coordinating university: Tampere University of Technology

More info & registration: www.fitech.io

This program is funded by the European Social Fund to the end of year 2018. Thereafter this program is part of the Fitech's training program.

FiTech Minors 2018

MATERIALS SCIENCE (20 ECTS)

A minor in the material science gives the student basic knowledge on ceramics, polymers and composite materials. In addition, the wear and corrosion properties of different material groups are studied. After completing the minor, the student understands the use of each material group and their limitations.

Courses:

Materials Performance, 5 ECTS

Polymeric Materials, 5 ECTS

Advanced Composites, 5 ECTS

Advanced Ceramics, 5 ECTS

Location: Distance learning (D), 27.8.2018 – 26.4.2019

Coordinating university: Tampere University of Technology

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjautu/tab/tab/seo

AUTOMATION ENGINEERING (20 ECTS)

Automation is found everywhere and our current everyday life is depending on the various automation systems such production and distribution of electricity and heating. Ordering items from web-store is possible of because of automation and the order starts chain of automated tasks including picking from storage, packaging, transportation, invoicing and so on. In the future robot can deliver the package to your home door. Automation is key competence area for Finnish export technology products.

Courses:

Automation (Basic knowledge on control systems) 5 ECTS (C, D) (In Finnish!)

Control and Automation Systems (Basic knowledge on automation system realization and technology) 5 ECTS (C, D) (In Finnish!)

Introduction to Robotics and Automation (Basic knowledge on robotics) 5 ECTS (C)

Mechatronics and Robot Programming (Knowledge on technology and programming of robotics) 5 ECTS (C)

Location: Distance learning (D) and Classroom teaching (C), 27.8.2018 – 26.4.2019

Coordinating university: Tampere University of Technology

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjautu/tab/tab/seo

ENERGY TECHNOLOGY (20 ECTS)

The minor focuses on the marine power generation systems, fuels, and the abatement solutions of exhaust emissions.

Courses:

Marine and power plant engines, 5 ECTS (C/D)

Engine fuels and lubricants, 5 ECTS (C/D)

Exhaust and flue gas after-treatment technologies, 5 ECTS (C/D)

Present and future prospects in energy technology: a seminar course with industrial viewpoint, 5 ECTS (C/D)

Location: Distance learning (D) and Classroom teaching (C), 10.9.2018 – 18.4.2019

Coordinating university: University of Vaasa

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjauudu/tab/tab/seo

USE AND CHARACTERISTICS OF STEEL, (C. 30 ECTS)

The University of Oulu is offering minor studies on steel know-how in the Materials and Production Technology research group. The steel know-how minor focuses on the characteristics of steel and the use of steels in the manufacturing industries. Utilising the new strong steels, makes it possible to considerably develop the lifetime characteristics of a product. This gives the manufacturer of the product a clear competitive advantage, enabling a stable and if necessary, a growing market share as well as profitable business operations.

Courses: (IN FINNISH!)

465102A Materials in machine shops, 5 ECTS (C)

465106A Basics of corrosion in metals, 5 ECTS (D)

465103A Principles of metal forming, 5 ECTS (C)

465104A Welding and heat treatment of metals, 5 ECTS (D)

465111S Welding metallurgy, 8 ECTS (D)

465113S Fracture mechanics of metals, 5 ECTS (C)

465112S Sheet metal forming, 5 ECTS (D)

Location: Distance learning (D) and Classroom teaching in Finnish in Oulu (C), 10.9.2018 – 18.4.2019

Coordinating university: University of Oulu

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjauudu/tab/tab/seo

MARINE TECHNOLOGY (25 ECTS)

The Marine Technology Minor offers students good overall knowledge of the engineering aspects related to marine environment. The main contents is to introduce design aspects related to environment, marine structures, transport and related systems and sub-systems. The studies cover design, manufacturing and operational aspects. The studies are build around expertise of each student by utilization of portfolio- and project-based teaching methods.

Choose five courses:

Principles of Naval Architecture 5 ECTS (C, D)
Ship Systems 5 ECTS (C, D)
Passenger Ships 5 ECTS (C, D)
Ship Dynamics 5 ECTS (C, D)
Ship Structures and Construction 5 ECTS (C, D)
Marine Risks and Safety 5 ECTS (C)
Winter Navigation ECTS (C)
Special Assignment in Mechanical Engineering 5 ECTS (C, D)

Location: Distance learning (D) and Classroom teaching (C), Fall 2018 – Spring 2019

Coordinating university: Aalto University

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjauudu/tab/tab/sea

INTERNATIONAL DESIGN BUSINESS MANAGEMENT (IDBM, 25 ECTS)

International Design Business Management (IDBM) program helps you become a future creative professional in integrating design and technology with global business development through transdisciplinary teamwork and real-life challenges provided by our renowned industry partners. IDBM students tackle complex, real-life challenges in multi-disciplinary teams, applying design thinking methods to create meaningful innovation.

Courses:

26E04700 IDBM Challenge, 5 ECTS (D, C)
JOIN-E7005 IDBM Industry Project, 15 ECTS (mainly D, C)
26E04903 IDBM Capstone: Global Virtual Teamwork, 5 ECTS (D)

Location: Distance learning (D) and Classroom teaching (C), Fall 2018

Coordinating university: Aalto University

More info: www.fitech.io, <https://www.idbm.aalto.fi/>

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjauudu/tab/tab/sea

CHEMICAL ENGINEERING FOR MANUFACTURING INDUSTRY (20 ECTS)

Chemical engineering for manufacturing industry provides student knowledge in combustion, materials engineering (especially materials suitable for high temperature processes) and on industrially applied chemical processes.

Courses:

Combustion chemistry, 5 ECTS (10/2018), (I)
Corrosion of metals, 5 ECTS (04/2019) (C)
Chemistry in Energy Technology, 5 ECTS (01-02/2019) (C)
Chemical process and product technology, 10 ECTS (11-12/2018) (C)

Location: Classroom teaching (C) and Intensive study (I), 11/2018-04/2019

Coordinating university: Åbo Akademi

More info: www.fitech.io

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SAFETY-CRITICAL AND AUTONOMOUS SYSTEMS (20 ECTS)

The student will learn in this module the fundamentals to the design of reliable autonomous and distributed systems. The student will learn methods to sense and collect data to allow autonomous systems to take intelligent decisions development methods at tools to develop complex systems, and how to ensure that they operate in a reliable and safe way while fulfilling their specification. This module is recommended to students in Information Technology or a closely related field.

Choose four courses:

Autonomic Software and Systems, 5 ECTS (C)
Multidimensional sensing techniques, 5 ECTS (C)
Real-time systems, 5 ECTS (D)
Software Safety, 5 ECTS (C)
Control of Discrete Event Systems, 5 ECTS (C)
Specification Methods, 5 ECTS (C)
Reliable Distributed Systems, 5 ECTS (C)
Security Engineering, 5 ECTS (C, University of Turku)

Location: Classroom teaching (C) and Distance learning (D), 09/2018-05/2019

Coordinating university: Åbo Akademi

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjaudu/tab/tab/sea

PRODUCTION PLANNING, CONTROL AND OPTIMIZATION (20 ECTS)

The courses introduce the students to the basics in production planning, control and optimization, which are important tools in the development of more material, energy and cost efficient processes.

Choose four courses:

Neural networks, 5 ECTS (I)

Evolutionary algorithms, 5 ECTS (D)

Optimization, (IN Swedish!), 5 ECTS (C)

Process and Production Optimization (IN Swedish!), 5 ECTS (C)

Control of discrete event systems, 5 ECTS (C)

Location: Classroom teaching (C), Distance learning (D) and intensive study (I), 9/2018-5/2019

Coordinating university: Åbo Akademi

More info: www.fitech.io

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CO-CREATION AND PLATFORM ECONOMY (20 ECTS)

The minor can be completed by choosing courses offered for this minor by University of Turku and Åbo Akademi. University of Turku courses provide a multidisciplinary approach to the domains of Co-Creation and Platform Economy, combining teaching of aspects such as business law, and ethics to the technological context. Åbo Akademi courses provide a wide overview software development technologies used in building products on modern business platforms.

Courses Technological phenomena in context (DTEK2039) and Digital Business models (TJ093238) are mandatory for those who wish to complete the minor with University of Turku courses.

Choose from the following courses:

UTU: Technological phenomena in context 5 ECTS (mandatory), (C)

Digital business models 6 ECTS (mandatory), (C)

Co-Creation and New Product Development 5 ECTS, (C)

Lean Platform Business Design 10 ECTS, (C)

Information Technology and Ethics 6 ECTS, (C)

ÅA: Development of server-side web services, 5 ECTS (09/2018) C

Development of client-side interactive web applications, 5 ECTS (10/2018) C

Cloud Computing, 5 ECTS (03/2019) C

Project course, 10 ECTS (09/2018) C,D

Special course in software engineering (Participation in summer schools, software and computer eng. hackatons and open projects) C ,D

Location: Classroom teaching (C), intensive study (I) and distance learning, 9/2018-5/2019

Coordinating university: University of Turku in co-operation with Åbo Akademi

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjaudu/tab/tab/sea

INDUSTRIAL ICT (20 ECTS)

The minor can be completed by choosing courses offered for this minor by University of Turku and Åbo Akademi. This minor provides wide overview of technologies and processes essential in designing and implementing "Smart industry" applications in Internet Era. Some of the courses in this minor require programming skills to fully exploit the presented technologies. Other courses provide an introduction to their topic for students with only elementary knowledge of programming. Check course-specific pre-requirements to choose a combination most suitable for you.

Choose from the following courses:

UTU: Software production (in Finnish), 4 ECTS (C)
Systems and Applications Security, 5 ECTS (C)
Data Analysis and Knowledge Discovery, 5 ECTS (C)
Embedded C-programming, 5 ECTS (C)
Enterprise Architecture, 6 ECTS (C)
Seminar on Future Technologies in Industry, 5 ECTS (C)

ÅA: System architecture of IoT (01/2019) (C)
Analytics for Industrial Internet (09/2018) (C)
Wireless digital communication (11/2018) (C)
Parallel programming (11/2018) or Code optimization (11/2019) (C)
Multidimensional sensing techniques (09/2018) (C)

Location: Classroom teaching (C), 9/2018-12/2019

Coordinating university: University of Turku in co-operation with Åbo Akademi

More info: www.fitech.io

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PROJECT & INDUSTRIAL MANAGEMENT (20 ECTS)

The minor gives students skills needed in how to successfully conduct projects in industries and infrastructure, as for example energy, shipbuilding and innovative start-ups. The courses include real-life cases and the teaching methods are combination of physical and virtual lectures. Participating in these courses gives the student excellent capabilities in how projects are conducted and the requirements in international project business.

Courses:

Industrial Project Business, 5 ECTS (C)
Business models and ecosystems, 5 ECTS (C)
Project management, Basic course, 5 ECTS (D, C)
Project management, Advanced course, 5 ECTS (D, C)

Location: Classroom teaching (C) and distance learning (D), 9/2018-5/2019

Coordinating university: Åbo Akademi in co-operation with Tampere University of Technology, University of Dulu and Aalto University.

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PROCESS DESIGN FOR ENERGY EFFICIENCY (20 ECTS)

The minor offers students a solid foundation of thermodynamics and modelling with advanced applications in the fields of refrigeration and new energy technologies such as solar and wind power. Advanced process thermodynamics offers deeper knowledge of the subject. Introduction to CFD gives students an insight into fluid dynamics and introduces them to the world of CFD modelling.

Students can also select single courses instead of the complete minor.

Choose four courses:

Principles of process Engineering, 5 ECTS (C, D)
Refrigeration Engineering, 5 ECTS (C, D)
New Energy Technologies, 5 ECTS (C, D)
Advanced process thermodynamics, 5 ECTS (C, D)
Computational Fluid Dynamics, 5 ECTS (I)

Location: Classroom teaching (C) and distance learning (D), 9/2018-5/2019

Coordinating university: Åbo Akademi

More info: www.fitech.io

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ENVIRONMENTAL ENGINEERING (20 ECTS)

The environment and different environmental issues are increasingly important in the world. Independent of their background, engineers need basic knowledge in this field. The minor is aimed for students who want to include different aspects of environmental engineering as a part of their studies. It offers a selection of courses from which the students can individually choose an optimal combination for their needs. The minor introduces the students to the basics in environmental engineering and provides a good foundation for future studies and practical challenges in the field.

Choose four courses:

Industrial Ecology, 5 ECTS, Fall 2018 (D)
Air Pollution Control Engineering, 5 ECTS, Fall 2018 (D)
Environmental Load of Industry, 5 ECTS, Spring 2018 (D)
Energy technologies in process industry, 5 ECTS, Spring 2019 (C, D)
Environmental Engineering & Design, 5 ECTS Spring 2019 (C, D)
Combustion Chemistry, 5 ECTS Fall 2018 (I)

Location: Classroom teaching (C), distance learning (D) and Intensive studies (I), 9/2018-5/2019

Coordinating university: University of Oulu in cooperation with Åbo Akademi

More info: www.fitech.io

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Individual courses 2018

Project Management, Basic Course ja Project Management Advanced Course

PRINCIPLES OF CHEMICAL REACTION ENGINEERING (5 ECTS)

To learn basic principles of chemical reaction engineering. Includes basics of chemical kinetics, rate equations and modelling of chemical reactors.

This course is a part of the English Chemical Engineering Master's programme.

Location: Classroom teaching (C) 9/2018-10/2018

Coordinating university: Åbo Akademi

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjauudu/tab/tab/sea

PROJECT MANAGEMENT, BASIC COURSE, 5 ECTS

Participating in the course gives the student excellent capabilities in how projects are conducted and the requirements in international project business.

This course is also a part of the Project & Industrial Management minor (20 ECTS).

Location: Classroom teaching (C) and distance learning (D), 9/2018-10/2018

Coordinating university: Åbo Akademi in co-operation with Tampere University of Technology, University of Oulu and Aalto University.

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjauudu/tab/tab/

PROJECT MANAGEMENT, ADVANCED COURSE, 5 ECTS

Participating in the course gives the student excellent capabilities in how projects are conducted and the requirements in international project business. This course is also a part of the Project & Industrial Management minor (20 ECTS).

Location: Classroom teaching (C) and distance learning (D), 11/2018-12/2018

Coordinating university: Åbo Akademi in co-operation with Tampere University of Technology, University of Oulu and Aalto University.

More info: www.fitech.io

Registration: https://haku.joopas.fi/litu/disp/fi/verkasto_kirjauudu/tab/tab/

TECH TALENT'S FAST TRACK TO THE FUTURE

Join us to become a Master of Science in Technology in a new way!

The FITech cooperative university provides studies at all Finnish universities of technology in Turku as a one-stop shop. You can also update or complement your current degree.

STUDY FLEXIBLY

FITech makes studying flexible: programmes for Master of Science in Technology, minor studies, as well as different courses and projects together with companies.

COOPERATE

Thanks to the university's close cooperation with businesses, you will be in close contact with companies and working life. Many of the studies can be taken while working.

FIND A CAREER

Companies short of engineers in the region provide excellent opportunities to find a meaningful job in Southwest Finland, where you can enjoy a high quality of life, close to the nature.

→ www.fitech.io

