

## List of Courses Taught in English Offered at Aalto University School of Engineering (ENG) in 2018/2019 and 2019/2020 Academic Years

**This list is subject to change.** Please check the WebOodi course portal for up-to-date information and course descriptions. The course codes in the left side column are links which take you to WebOodi. Bachelor students who are in the final stages of their studies can choose master level courses if they have the required background knowledge.

Autumn term: September - December (teaching periods I, II)

Spring term: January - May (teaching periods III, IV and V)

Teaching periods include examinations.

### Bachelor Level Courses

Course Code	Course Name	Credits	Autumn/Spring	Teaching Period
<a href="#">ENE-C3002</a>	Models for Decision Support in Engineering	5	Autumn	II
<a href="#">ENG-A1009</a>	Practical Work Training with 3D-printers	1	Autumn/Spring	Any period
<a href="#">ENY-C2005</a>	Geoinformation in Environmental Modelling	5	Spring	III
<a href="#">KON-C2004</a>	Mechatronics Basics	5	Autumn	II
<a href="#">MAA-C2005</a>	Geometric Models in Engineering	5	Spring	IV
<a href="#">MAA-C3001</a>	Statistical and Stochastic Methods in Engineering	5	Autumn	I
<a href="#">RAK-C3005</a>	Project Course on Computational Modelling in Engineering	5	Spring	IV-V
<a href="#">YYT-C3001</a>	Management of environmental data and information	5	Autumn	I
<a href="#">YYT-C3002</a>	Application Programming in Engineering	5	Spring	III

### Master Level Courses

#### Energy Technology

Course Code	Course Name	Credits	Autumn/Spring	Teaching Period
<a href="#">AAE-E1000</a>	Introduction to Advanced Energy Solutions	5	Autumn	I-II
<a href="#">AAE-E3000</a>	Advanced Energy Project L	10	Autumn	I-II
<a href="#">AAE-E3030</a>	Numerical Modeling of Multiphase Flows L	5	Spring	IV-V
<a href="#">AAE-E3050</a>	Bioenergy and Biofuels L	5	Autumn	I
<a href="#">EEN-E1010</a>	Power Plants and Processes	5	Autumn	I-II
<a href="#">EEN-E1020</a>	Heat Transfer	5	Autumn	II
<a href="#">EEN-E1030</a>	Thermodynamics in Energy Technology	5	Autumn	I-II

<a href="#">EEN-E1040</a>	Measurement and Control of Energy Systems	5	Autumn	I-II
<a href="#">EEN-E2001</a>	Computational Fluid Dynamics L	5	Spring	III-IV
<a href="#">EEN-E2002</a>	Combustion Technology	5	Spring	III-IV
<a href="#">EEN-E2004</a>	Mass Transfer L	5	Spring	III-IV
<a href="#">EEN-E2007</a>	Energy, Environment and Emission Control	5	Autumn	II
<a href="#">EEN-E3001</a>	Fundamentals of Industrial Energy Engineering	5	Spring	III-IV
<a href="#">EEN-E3002</a>	Power Process Simulation	5	Spring	IV-V
<a href="#">EEN-E3003</a>	Industrial Drying and Evaporation Processes	5	Spring	IV
<a href="#">EEN-E3004</a>	District Heating and Cooling	5	Spring	III
<a href="#">EEN-E3005</a>	Exercises in Energy Technology L, V	5	Autumn and Spring	I-V
<a href="#">EEN-E3006</a>	Energy Markets	5	Autumn	I
<a href="#">EEN-E3007</a>	Process Integration and Energy Optimization L	5	Autumn	II
<a href="#">EEN-E4001</a>	Comfortable and Healthy Indoor Environments	5	Spring	III
<a href="#">EEN-E4002</a>	Heating and Cooling Systems	5	Spring	III
<a href="#">EEN-E4003</a>	Ventilation and Air Conditioning Systems	5	Spring	IV
<a href="#">EEN-E4004</a>	Fundamentals of HVAC Design	5	Spring	IV-V
<a href="#">EEN-E4005</a>	Sustainable Building Energy Systems	5	Spring	V
<a href="#">EEN-E4006</a>	Advanced HVAC Design	5	Autumn	I-II
<a href="#">EEN-E4007</a>	Building Energy Optimisation	5	Autumn	I-II

## Building Technology

Course Code	Course Name	Credits	Autumn/Spring	Teaching Period
<a href="#">CIV-E1010</a>	Building Materials Technology	5	Autumn	I
<a href="#">CIV-E1020</a>	Mechanics of Beam and Frame Structures	5	Autumn	I
<a href="#">CIV-E1030</a>	Fundamentals of Structural Design	5	Autumn	II
<a href="#">CIV-E1040</a>	Construction Management	5	Autumn	II
<a href="#">CIV-E1050</a>	Heat and Mass Transfer in Buildings	5	Autumn	I
<a href="#">CIV-E1060</a>	Engineering Computation and Simulation	5	Autumn	II
<a href="#">CIV-E2020</a>	Concrete Technology L	5	Spring	III
<a href="#">CIV-E2030</a>	Experimental Methods in Building Materials L	5	Spring	V
<a href="#">CIV-E2040</a>	Maintenance and Repair of Structures L	5	Autumn	II

<a href="#">CIV-E2050</a>	Operations Management in Construction L	5	Spring	III
<a href="#">CIV-E2060</a>	Production Technology of Concrete Structures L	5	Spring	IV
<a href="#">CIV-E2070</a>	Strategic Management of Construction L	5	Spring	V
<a href="#">CIV-E3010</a>	Applied Building Physics and Design L	5	Spring	V
<a href="#">CIV-E3020</a>	Design of Energy Efficient Buildings L	5	Autumn	II
<a href="#">CIV-E3030</a>	Indoor Air Quality L	5	Spring	IV
<a href="#">CIV-E3040</a>	Indoor Environment Technology L	5	Autumn	I
<a href="#">CIV-E3050</a>	Fire Dynamics and Simulation L	5	Spring	III
<a href="#">CIV-E3060</a>	Fire Risk and Evacuation Analysis L	5	Autumn	I
<a href="#">CIV-E4010</a>	Finite Element Methods in Civil Engineering L	5	Spring	IV
<a href="#">CIV-E4020</a>	Design of Bridges L	5	Autumn	II
<a href="#">CIV-E4030</a>	Engineering Design Exercises L	5	Autumn	II
<a href="#">CIV-E4040</a>	Reinforced Concrete Structures L	5	Spring	III
<a href="#">CIV-E4050</a>	Prestressed and Precast Concrete Structures L	5	Autumn	I
<a href="#">CIV-E4060</a>	Steel Structures L	5	Spring	V
<a href="#">CIV-E4070</a>	Composite Steel Structures L	5	Autumn	I
<a href="#">CIV-E4080</a>	Material Modelling in Civil Engineering L	5	Spring	V
<a href="#">CIV-E4090</a>	Mechanics of Plate and Shell Structures L	5	Spring	III
<a href="#">CIV-E4100</a>	Stability of Structures L	5	Spring	IV
<a href="#">CIV-E4110</a>	Timber Engineering L	5	Spring	IV
<a href="#">CIV-E4120</a>	Timber Structures L	5	Autumn	I
<a href="#">CIV-E5010</a>	Geometry & Lightweight: Structures and Architecture L	5	Spring	III
<a href="#">CIV-E5020</a>	Structures and Architecture: Parametric Engineering L	5	Spring	IV
<a href="#">CIV-E5030</a>	Structures and Architecture: Informed Structures L	10	Autumn	I-II
<a href="#">CIV-E5040</a>	Structures and Architecture: Design Build Advanced L	5 - 10	Spring	III-IV

## Geoengineering

Course Code	Course Name	Credits	Autumn/Spring	Teaching Period
<a href="#">GEO-E1010</a>	Engineering Geology	5	Spring	IV
<a href="#">GEO-E1020</a>	Geotechnics	5	Autumn	I
<a href="#">GEO-E1030</a>	Structural Design of Roads	5	Autumn	II

<a href="#">GEO-E1040</a>	Rock Excavation	5	Spring	III
<a href="#">GEO-E1050</a>	Finite Element Method	5	Autumn	II
<a href="#">GEO-E2010</a>	Advanced Soil Mechanics L	5	Spring	IV
<a href="#">GEO-E2020</a>	Numerical Methods in Geotechnics L	5	Spring	V
<a href="#">GEO-E2030</a>	Rock Mechanics L	5	Autumn	I
<a href="#">GEO-E2040</a>	Rock Construction L	5	Spring	V
<a href="#">GEO-E2050</a>	Bituminous Materials and Mixtures L	5	Spring	III
<a href="#">GEO-E2060</a>	Seminar in Geoengineering L, V	5	Autumn	I-II
<a href="#">GEO-E2071</a>	Special Assignment in Geoengineering L	1-10	Autumn and Spring	I-II and III-V
<a href="#">GEO-E2080</a>	Foundation Engineering and Ground Improvement	5	Autumn	II
<a href="#">GEO-E3010</a>	Economic Geology and Mineral Economics L	5	Autumn	II
<a href="#">GEO-E3030</a>	Road Maintenance and Rehabilitation L	5	Spring	V (odd years)
<a href="#">GEO-E3040</a>	Geometric Design of Roads	5	Spring	IV (even years)

## Geoinformatics

Course Code	Course Name	Credits	Autumn/Spring	Teaching Period
<a href="#">GIS-E1010</a>	Geodesy and Positioning L	5	Autumn	I
<a href="#">GIS-E1020</a>	From Measurements to Maps L	5	Autumn	I
<a href="#">GIS-E1030</a>	Introduction to Spatial Methods	5	Autumn	I
<a href="#">GIS-E1040</a>	Photogrammetry, Laser Scanning and Remote Sensing L	5	Autumn	II
<a href="#">GIS-E1060</a>	Spatial Analytics L	5	Autumn	II
<a href="#">GIS-E1070</a>	Theories and Techniques in GIS L	5	Autumn	II
<a href="#">GIS-E3010</a>	Least-Squares Methods in Geoscience L	5	Spring	III
<a href="#">GIS-E3020</a>	Digital Image Processing and Feature Extraction L	5	Spring	III
<a href="#">GIS-E3030</a>	Advanced Laser Scanning L	5	Spring	IV
<a href="#">GIS-E3040</a>	Advanced Photogrammetry L	5	Spring	IV
<a href="#">GIS-E3050</a>	Advanced Remote Sensing L	5	Spring	V
<a href="#">GIS-E4011</a>	Geographic Information Management L	5	Spring	III
<a href="#">GIS-E4020</a>	Advanced Spatial Analytics L	5	Spring	III-IV
<a href="#">GIS-E4030</a>	GIS Development L	5	Spring	V
<a href="#">GIS-E5030</a>	Physical Geodesy L	5	Spring	V

<a href="#">GIS-E5040</a>	Mathematical Geodesy L	5	Spring	IV
<a href="#">GIS-E6010</a>	Project Course L, V	10	Autumn	I-II

## Mechanical Engineering

Course Code	Course Name	Credits	Autumn/Spring	Teaching Period
<a href="#">MEC-E1003</a>	Machine Design Project	5	Autumn	I-II
<a href="#">MEC-E1004</a>	Principals of Naval Architecture	5	Autumn	I-II
<a href="#">MEC-E1005</a>	Modelling in Applied Mechanics	5	Spring	V
<a href="#">MEC-E1010</a>	Dynamics of Rigid Body	5	Autumn	I
<a href="#">MEC-E1020</a>	Fluid Dynamics	5	Autumn	I
<a href="#">MEC-E1030</a>	Random Loads and Processes L	5	Autumn	I
<a href="#">MEC-E1040</a>	Dynamics of Structures L	5	Autumn	II
<a href="#">MEC-E1050</a>	Finite Element Method in Solids	5	Autumn	II
<a href="#">MEC-E1060</a>	Machine Design	5	Autumn	I
<a href="#">MEC-E1070</a>	Selection of Engineering Materials	5	Autumn	I
<a href="#">MEC-E1080</a>	Production Engineering	5	Autumn	I-II
<a href="#">MEC-E1090</a>	Quality Management and Metrology	5	Autumn	II
<a href="#">MEC-E1500</a>	Special Assignment in Mechanical Engineering L, V	1-10	Any semester	Any period
<a href="#">MEC-E2001</a>	Ship Hydrodynamics	5	Autumn	II
<a href="#">MEC-E2002</a>	Ship Buoyancy and Stability	5	Autumn	II
<a href="#">MEC-E2003</a>	Passenger Ships L	5	Autumn	II
<a href="#">MEC-E2004</a>	Ship Dynamics L	5	Spring	IV-V
<a href="#">MEC-E2005</a>	Ship Systems	5	Spring	III
<a href="#">MEC-E2007</a>	Ship Structures and Construction L	5	Spring	IV-V
<a href="#">MEC-E2009</a>	Marine Risks and Safety L	5	Autumn	I
<a href="#">MEC-E2010</a>	Computational Fluid Modelling L	5	Autumn	I-II
<a href="#">MEC-E2011</a>	Ship Design Portfolio	5	Spring	III-V
<a href="#">MEC-E2012</a>	Computational Marine Hydrodynamics L	5	Autumn	I
<a href="#">MEC-E3001</a>	Product Development Project L, V	10-15	Autumn-Spring	I-V
<a href="#">MEC-E3002</a>	Methods in Early Product Development L	5	Autumn	I
<a href="#">MEC-E3003</a>	System Engineering Design L	5	Spring	III

<a href="#">MEC-E4001</a>	Winter Navigation L	5	Spring	III
<a href="#">MEC-E4002</a>	Ice Loads on Structures L	5	Spring	IV
<a href="#">MEC-E4003</a>	Ice Mechanics L	5	Autumn	I
<a href="#">MEC-E4004</a>	Model Scale Testing in Ice L	5	Autumn	II
<a href="#">MEC-E5001</a>	Mechatronic Machine Design	5	Spring	III
<a href="#">MEC-E5002</a>	Mechatronics Project	10	Spring	III-IV
<a href="#">MEC-E5003</a>	Fluid Power Basics	5	Spring	III-IV
<a href="#">MEC-E5004</a>	Fluid Power Systems	5	Autumn	I-II
<a href="#">MEC-E5005</a>	Fluid Power Dynamics L	5	Autumn	I-II
<a href="#">MEC-E5006</a>	Vehicle Mechatronics L	5	Autumn	II
<a href="#">MEC-E5010</a>	Advanced Project on Mechatronics V	5	Any semester	Any period
<a href="#">MEC-E6001</a>	Engineering Metals and Alloys L	5	Spring	V
<a href="#">MEC-E6002</a>	Welding Technology and Design L	5	Spring	V
<a href="#">MEC-E6003</a>	Materials Safety L	5	Autumn	I
<a href="#">MEC-E6004</a>	Non-destructive Testing L	5	Autumn	II
<a href="#">MEC-E6005</a>	Engineering Materials Seminar L	5	Spring	V
<a href="#">MEC-E6006</a>	Engineering Materials Laboratory L	5	Autumn	I-II
<a href="#">MEC-E7001</a>	Production Systems Modelling L	5	Spring	III
<a href="#">MEC-E7002</a>	Manufacturing Methods I	5	Spring	III-IV
<a href="#">MEC-E7003</a>	Manufacturing Methods II	5	Spring	IV-V
<a href="#">MEC-E7005</a>	Advanced Casting Technology L	5	Spring	IV
<a href="#">MEC-E7006</a>	Advanced Manufacturing L	5	Spring	IV
<a href="#">MEC-E7007</a>	Factory Project	5	Autumn	I-II
<a href="#">MEC-E8001</a>	Finite Element Analysis L	5	Spring	III
<a href="#">MEC-E8002</a>	Continuum Mechanics and Material Modelling L	5	Spring	III
<a href="#">MEC-E8003</a>	Beam, Plate and Shell Models L	5	Spring	IV
<a href="#">MEC-E8005</a>	Thin-walled Structures L	5	Autumn	I
<a href="#">MEC-E8006</a>	Fatigue of Structures L	5	Autumn	II
<a href="#">MEC-E8007</a>	Fracture Mechanics L	5	Spring	V

Course Code	Course Name	Credits	Autumn/Spring	Teaching Period
<a href="#">REC-E3100</a>	Real Estate Economics L	6	Autumn	I
<a href="#">REC-E3200</a>	Institutions in Real Estate Economics L	6	Autumn	I
<a href="#">REC-E3300</a>	Facility and Property Management L	6	Autumn	II
<a href="#">REC-E3400</a>	Housing Economics L	6	Autumn	II
<a href="#">REC-E3500</a>	Urban Economics L	6	Spring	III
<a href="#">REC-E3600</a>	Real Estate Market Analysis L	6	Spring	III
<a href="#">REC-E4100</a>	Real Estate Finance L	6	Spring	IV
<a href="#">REC-E4200</a>	Real Estate Development L	6	Spring	IV
<a href="#">REC-E4300</a>	Real Estate Valuation L	6	Spring	V
<a href="#">REC-E4400</a>	Real Estate Business and Entrepreneurship L	6	Spring	IV-V
<a href="#">REC-E4500</a>	Land Management L	6	Spring	V
<a href="#">REC-E4600</a>	Economic Law L	6	Any semester	Any period

### Spatial Planning and Transportation Engineering

Course Code	Course Name	Credits	Autumn/Spring	Teaching Period
<a href="#">SPT-E1010</a>	Land Use Planning Systems L	5	Autumn	I
<a href="#">SPT-E1020</a>	Transport Systems Planning L	5	Autumn	I-II
<a href="#">SPT-E1030</a>	Planning Theory L	5	Autumn	I-II
<a href="#">SPT-E1040</a>	Transport Policy and Economics L	5	Autumn	II
<a href="#">SPT-E1050</a>	Systems Thinking for Sustainable Living Environments L	5	Spring	III-IV
<a href="#">SPT-E1070</a>	Planning Studio L, V	10	Autumn	I-II
<a href="#">SPT-E3010</a>	Participatory Planning L	5	Spring	IV
<a href="#">SPT-E4010</a>	Transport Modelling L	5	Spring	III
<a href="#">SPT-E4020</a>	Traffic Flow Theory L	5	Spring	IV
<a href="#">SPT-E4030</a>	Traffic Management L	5	Spring	V
<a href="#">SPT-E5010</a>	Urban and Regional Development L	5	Spring	V
<a href="#">SPT-E5020</a>	Urban Experience L	5	Spring	III
<a href="#">SPT-E8010</a>	Smart and Liveable City Studio L, V	10	Spring	IV-V

### Water and Environmental Engineering

<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Autumn/Spring</b>	<b>Teaching Period</b>
<a href="#">WAT-E1011</a>	Water & Environment	10	Autumn	I
<a href="#">WAT-E1030</a>	Computational Methods in Water and Environmental Engineering	5	Autumn	I
<a href="#">WAT-E2010</a>	Groundwater Hydrology L	5	Autumn	II
<a href="#">WAT-E2020</a>	Environmental Hydraulics L	5	Spring	V
<a href="#">WAT-E2030</a>	Hydrological Modelling L	5	Spring	III
<a href="#">WAT-E2040</a>	Surface Water Resources L	5	Spring	IV
<a href="#">WAT-E2060</a>	Sustainable Built Environment L	5	Autumn	II
<a href="#">WAT-E2070</a>	Sustainable Global Technologies (SGT) Studio L	10	Spring	III-V
<a href="#">WAT-E2080</a>	Water and Governance L	5	Spring	III
<a href="#">WAT-E2090</a>	Water and People in a Changing World L	5	Spring	V
<a href="#">WAT-E2100</a>	Urban Water Systems L	5	Autumn	II
<a href="#">WAT-E2110</a>	Design and Management of Water and Wastewater Networks L	5	Spring	IV
<a href="#">WAT-E2120</a>	Physical and Chemical Treatment of Water and Waste L	5	Spring	III
<a href="#">WAT-E2130</a>	Modelling and Control of Water and Wastewater Treatment Processes L	5	Spring	V
<a href="#">WAT-E2140</a>	Sustainability in Environmental Engineering L	5	Autumn	II
<a href="#">WAT-E2150</a>	Environmental Risk Analysis L	5	Spring	IV
<a href="#">WAT-E2170</a>	Circular Economy in Environmental Engineering L	5	Spring	V
<a href="#">WAT-E2180</a>	Biological Treatment of Water and Waste L	5	Spring	IV
<a href="#">WAT-E3020</a>	State of the World and Development L	2	Autumn	I