

*Note that due to the effects of the COVID-19 virus, course descriptions may change.
Check the latest information on courses on the MyCourses website.*

SPT-E1010: Land Use Planning Systems D, 5 cr
SPT-E1021: Foundations of Mobility Systems D, 5 cr
SPT-E1030: Planning Theory D, 5 cr
SPT-E1041: Transport Planning and Policy D, 5 cr
SPT-E1050: Systems Thinking for Sustainable Living Environment D, 5 cr
SPT-E1060: Seminar on Spatial Planning and Transportation Engineering D, V 5 cr
SPT-E1070: Planning Studio D, V, 10 cr
SPT-E3010: Participatory Planning D, 5 cr
SPT-E4010: Transport Modelling D, 5 cr
SPT-E4020: Traffic Flow Theory D, 5 cr
SPT-E4030: Traffic Management D, 5 cr
SPT-E4040: Integrated Urban Transport D, 5 cr
SPT-E4050 – Transport Economics D, 5 cr
SPT-E5010: Urban and Regional Development D, 5 cr
SPT-E5020: Urban Experience D, 5 cr
SPT-E8010: Smart and Liveable City Studio D, V, 10 cr
SPT-E8020: Special Course in Spatial Planning and Transportation Engineering D, V, 1 - 15 cr
SPT-E8030: Summer School in Spatial Planning and Transportation Engineering D, V, 2 - 10 cr
D = master's level course, also qualifies to postgraduate studies, V = varying content

SPT-E1010 - Land Use Planning Systems D

Departments: Department of Built Environment

Scope: 5

Status: Spatial Planning and Transportation Engineering, common studies (compulsory)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Autumn I / 2021-2022 Autumn I

Teacher-in-Charge: Hanna Mattila

SDG goals: Sustainable cities and communities, Climate action, Life on land

Substitute: Maa-20.3510 Strategic Urban and Regional Planning OR Maa-78.3220 Maankäytön strategiat ja suunnitteluyhteistyö

Prerequisite: -

Outcome: After the course a student:

- Can analyse planning systems and their role and importance in land use planning
- Can evaluate elements and characteristics of planning systems

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- Is familiar with different types of planning systems, and can analyse and compare their characteristics to the Finnish planning system
- Understands societal, spatial and legal contexts of land use planning
- Can utilize planning and policy instruments in studio courses and in planning work

Content:

- Finnish planning system & international examples of different kinds of planning systems.
- Elements and characteristics of planning systems, covering both statutory planning, as well as "soft", non-statutory, planning and policy instruments with which urban and regional structures can be steered.
- Socio-spatial and legal contexts of land use planning.

Workload: Lectures, independent work & group work.

Assessment: The course consists of lectures, independent work & group work. Evaluation is based on learning outcomes - group assignments as well as individual assignments (exam, essay, learning diary or similar) will be evaluated

Material: Academic articles / book chapters / reports / legal and policy texts. (to be announced in the first lecture)

Registration: Max. number of students is 40. Priority is given to the students of the Master's Programme Spatial Planning and Transportation Engineering.

SPT-E1021 - Foundations of Mobility Systems D

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, common studies (compulsory)

Level: Master's level

Also qualifies to postgraduate studies: Yes

Course with varying content: No

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Autumn I / 2021-2022 Autumn I

Teacher-in-Charge: Milos Mladenovic

SDG goals: Decent work and economic growth, Industry, innovation and infrastructure, Reduced inequalities, Sustainable cities and communities, Climate action

Substitute: Yhd-71.3225 Transportation System Planning SPT-E1020 Transport Systems Planning

Prerequisite: -

Outcome: A student who has passed the course will be able to:

- understand historical trajectories of urban and transport systems
- explain travel behavior phenomena using a combination of economic, psychological, and sociological approaches
- evaluate urban transport vehicles and emerging mobility technologies
- explain interaction between land use and transport system
- interpret scientific literature in transport studies

Content:

- History of transportation
- Individual travel behavior and collective traveling activity patterns

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- Transport vehicles and emerging technologies
- Urban and transport system dynamics

Workload: - Lectures and in-class activities (60 h) - Individual learning (75 h)

Assessment: In-class activity (35%) Assignments (35%) Review paper and presentation (30%)

Material:

- Lectures and guest lectures
- Discussion sessions
- Individual assignments
- Review paper and presentation
- Course material and scientific literature

Registration: Maximum number of students on the course is 40. Priority will be given to students in the Master's Programme in Spatial Planning and Transportation Engineering.

SPT-E1030 - Planning Theory D

Name (FI): Suunnitteluteoria L

Name (SV): Planeringsteori L

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, common studies (compulsory)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English, Finnish, Swedish

Grading scale: 0-5

Teaching Periods: 2020-2021 Autumn I-II / 2021-2022 Autumn I-II

Teacher-in-Charge: Hanna Mattila

SDG goals: Gender equality, Sustainable cities and communities, Peace, justice and strong institutions

Substitute (FI): Maa-78.3210 Maankäytön suunnittelun teoria ja historia P

Substitute (SV): Maa-78.3210 Maankäytön suunnittelun teoria ja historia P

Substitute: Maa-78.3210 Maankäytön suunnittelun teoria ja historia P

Prerequisite: -

Outcome: A student who has passed the course will be able to:

- understand broader philosophical and societal discourses that are related to the societal role and tasks assigned to planning,
- understand the interplay of planning and other major societal forces (e.g. other sectors of public governance, (global) markets, NGOs),
- understand possibilities and limitations of planning to make a difference in society
- elaborate conceptually various ethical implications related to choices made in planning,
- associate and evaluate critically various theoretical responses to different types of planning problems,
- engage reflectively in discourses concerning contemporary planning challenges.

Content:

- Modern planning theory covering both procedural and substantive planning theories.

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- The origins of planning theoretical thought.
- The contemporary challenges for and in planning (e.g. globalization and urbanization, urban complexities and inequalities, climate change and forms of sustainability, civil society transformation, managerialism and politics).
- The changing and multiple roles of the planner.

Workload (FI): 26 h luentoja, 110 h itsenäistä työskentelyä ja työskentelyä pienryhmissä

Workload (SV): 26 h lecturer, 110 h individuellt kursarbete och arbeta i små grupper

Workload: 26 h lectures, 110 h independent work and working in small groups

Assessment (FI): Kurssi koostuu 26 t luennoista / kontaktiopetuksesta ja 110 t itsenäisestä työstä sekä työskentelystä pienissä ryhmissä. Arviointi perustuu oppimistuloksiin ja opiskelijat arvioidaan luentopäiväkirjojensa ja / tai esseetehtäviensä (80%) ja keskusteluun osallistumisen perusteella (20%).

Assessment (SV): Kursen består av 26 timmar av föreläsningar / kontakt undervisning och 110 timmar självständigt arbete och arbete i små grupper. Utvärderingen bygger på lärandemål och eleverna utvärderas utifrån sina föreläsningdagböcker och / eller uppsatssuppgifter (80%) och deras deltagande i diskussionen under sessionerna (20%).

Assessment: The course consists of lectures/contact teaching, independent work, and working in small groups. Evaluation is based on learning outcomes and the students are assessed based on a) their written works (learning diaries, essays) and b) participation in the discussions during the contact teaching sessions.

Material (FI): Kurssikirjallisuus ilmoitetaan ensimmäisellä luennolla.

Material (SV): Kurslitteratur som tillkännages i den första föreläsningen.

Material: Course literature to be announced in the first lecture.

Registration (FI): Korkeintaan 40 opiskelijaa (etusija annetaan Master's Programme in Spatial Planning and Transportation Engineering –ohjelman opiskelijoille).

Registration (SV): Max. mängd studenter 40 (företråde ges studenterna på Master's Programme in Spatial Planning and Transportation Engineering).

Registration: Via Sisu. Max. amount of students 40 (priority is given to the students of the Masterss Programme in Spatial Planning and Transportation Engineering).

SPT-E1041 - Transport Planning and Policy D

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, common studies (compulsory)

Level: Master

Also qualifies to postgraduate studies: Yes

Course with varying content: No

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Autumn II / 2021-2022 Autumn II

Teacher-in-Charge: Milos Mladenovic (2020-2021), Dominic Stead (2021-2022)

SDG goals: Decent work and economic growth, Industry, innovation and infrastructure, Reduced inequalities, Sustainable cities and communities, Responsible consumption and production, Climate action

Substitute: Yhd-71.2115 Liikennepoliittikka ja -talous SPT-E1040 Transport Policy and Economics

Prerequisite: -

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Outcome: After taking this course, you will be able to:

- explain the interactions between land use and transport policies
- evaluate the goal setting and means of land use and transport policies
- differentiate between different types of policy instruments used in land use and transport plans
- analyze and assess the impacts of policies and instruments
- identify the reasons for the constancy and flux of different policies

Content: The course contents include:

- Planning and policy paradigms and processes
- Relations between land use and transport policies
- Modeling transport systems
- Planning cultures; Policy entrepreneurs; Path dependency; Policy layering, conversion, drift and displacement
- Policy effectiveness and acceptability; Policy packages and calibrations
- Evaluation techniques in land use and transport planning

Workload: - Lectures 40 h - Exercises 21 h - Individual work 60 h - Groupwork 12 h

Assessment: In-class activity Individual assignments Group assignment

Material: Course compendium and lecture slides

Registration: The maximum number of students in the course is 40. Priority will be given to students of the Master's Programme in Spatial Planning and Transportation Engineering.

SPT-E1050 - Systems Thinking for Sustainable Living Environment D

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, common studies (compulsory) and Master's Programme in Creative Sustainability (Real Estate and Water Management), advanced studies (compulsory).

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Autumn II / 2021-2022 Autumn II

Teacher-in-Charge: Raine Mäntysalo

SDG goals: Good health and well-being, Reduced inequalities, Sustainable cities and communities, Responsible consumption and production, Climate action, Partnerships for the goals

Substitute: Maa-78.3330 Urban Systems

Prerequisite: No prerequisites

Outcome: As an outcome of the course, the student will achieve understanding of the large scale systemic principles and the multi-dimensional interdependencies of sustainability. The student will learn to define and discuss the key concepts related to systems thinking in the context of sustainable living environment. The student will get skills to apply systems thinking in the context of sustainable urban living environment.

Content: Theoretical foundation for large scale systemic principles and multi-dimensional interdependencies of sustainability. Complex adaptive systems and key concepts related to systems thinking in the urban context in a

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group assignment in which a selected case city is examined. Applying systems thinking in the context of sustainable living environment.

Workload: The course work consists of lectures, and group and individual work.

Assessment: Learning diaries, selected readings and performance on the group assignment. Evaluation criteria will be specified during the course.

Material: The literature of the course will be specified during the course. Some readings may be given as a pre-assignment to the course.

Registration: Via Sisu

SPT-E1060 - Seminar on Spatial Planning and Transportation Engineering D, V

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, common studies (compulsory)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Autumn I-Spring V / 2021-2022 Autumn I-Spring V

Teacher-in-Charge: Milos Mladenovic, Dominic Stead

SDG goals: Sustainable cities and communities

Substitute: Maa-20.3408 Seminars in Real Estate and Planning

Prerequisite: At the beginning the student has to contact his supervisor/ instructor for her master's thesis topic.

Outcome: The purpose of the course is to prepare an initial research plan and to proceed in the research and writing task for a Master's thesis. The course supports abilities of searching and critiquing relevant literature, designing a research methodology and time plan, and writing the thesis. After the course, the student

- knows about different types of master's theses and has a general understanding of the workload and schedule
- has formulated research questions for her/his individual topic and chosen appropriate materials and methods to answer them
- has basic knowledge of qualitative and quantitative research methods
- has basic skills for information retrieval for her/his subject
- knows how to cite publications in her/his text, to use referencing software, and to write a list of references
- has written a personal research plan for her/his master's work, including the abstract and the content plan, and is able to present and discuss the topic

Content: The course consists of introductory lectures, independent work, and individual seminar presentation(s). Every student will have an individual supervisor and an instructor.

Workload: The workload will be presented in the course syllabus.

Assessment: The following teaching methods are used during the course:

- lectures, including guest lectures on research methods and information retrieval
- student homework
- student presentations and mutual feedback discussions
- individual feedback for draft versions

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- an individual seminar presentation
- an individual opponent task

Active participation of the students is essential.

The course incorporates visiting lectures on the following topics:

- qualitative research and theme interview
- statistical and geographic
- information methods information retrieval

Detailed study material is provided for the use of bibliography, the structure of the research plan and the master's thesis, and other relevant topics.

Material: Detailed study material is provided for the use of bibliography, the structure of the research plan and the master's thesis, and other relevant topics.

Registration: Students in the Masters's Programme in Spatial Planning and Transportation Engineering are prioritized.

SPT-E1070 - Planning Studio D, V

Departments: Department of Built Environment

Scope: 10

Status: Master's Programme in Spatial Planning and Transportation Engineering, common studies (compulsory)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Autumn I-II / 2021-2022 Autumn I-II

Teacher-in-Charge: Raine Mäntysalo

Substitute: Maa-20.3520 Shared Project A, Spatial Planning V OR Yhd-71.3270 Urban Transport Systems OR Yhd-71.3280 Shared Project C, Urban Engineering

Prerequisite:

Outcome: Capabilities in:

- integrative and participatory land use and transportation system planning in the context of urban and regional strategic spatial planning,
- the use of scenario planning tools in developing strategic frames for urban and regional development, thus enabling coping with uncertainty,
- strategic longer range assessment of short term decisions in land use and transportation,
- the strategic use of normative and legislative planning tools and various incentives related to the land use and transportation system,
- measuring land use functions with their implications to transportation,
- planning urban logistics and the public transportation network
- the use of theoretical concepts and models in planning work.

Content: A planning case requiring the integration of land use and transportation system planning with a strategic perspective in municipal and further regional contexts:

- Analyses of existing urban and regional structure and transportation system and related development trajectories and existing plans and policies, with the use of relevant data and data systems.

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- The generation of alternative scenarios for long term development that inform the making of a visionary strategic frame.
- The making of an integrative strategic land use and transportation plan, in which short term planning choices are justified by a policy based on the created longer term strategic frame.

Workload: Learning sessions (incl. lectures, workshops and meetings with instructors) 70 hours, group work and individual studying 200 hours.

Assessment: Regular attendance is required. The study work consists of several compulsory planning and analysis assignments related to the planning case, involving both group and individual work. Assessment is based on performance on the assignments and partly also on activity in class.

Material: Course literature and planning case -related documents and data.

Registration: Students in the Master's Programme in Spatial Planning and Transportation Engineering are prioritized.

SPT-E3010 - Participatory Planning D

Name (FI): Vuorovaikutteinen suunnittelu D

Name (SV): Interaktiv planering D

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, advanced studies (optional)

Level: Maisteritaso, tohtoritaso

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English, Finnish, Swedish

Grading scale: 0-5

Teaching Periods: 2020-2021 Spring IV / 2021-2022 Spring IV

Teacher-in-Charge: Marketta Kyttä

SDG goals: Gender equality, Reduced inequalities, Sustainable cities and communities, Climate action, Partnerships for the goals

Substitute: Maa-78.3230 Osallistuminen ja arviointi suunnittelussa

Prerequisite: -

Outcome: During the course the student:

- Reflects his/her personal attitudes towards participatory planning and which approaches she/he finds most useful
- Learns to understand the meaning of participation in the various phases of planning process and in relation to societal and political context and decisionmaking processes.
- Can recognize and name various theoretical and practical approaches in the multifaceted field of participatory planning
- Learns to know a variety of participation methods including digital tools and e-participation and will test some of them.

Content: During the course, the student will be introduced participatory planning as a multifaceted, sometimes contested field with various approaches, ideals and methodologies. These approaches have evolved during the (rather short) history of participatory planning. The varying viewpoint concern for example:

- How participation is organized? Participatory planning can be formally organized but also informal, self-organized activity. Who are the participants? The participants can be either organized groups or randomly selected individuals.

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- What kind of knowledge participatory planning produces? The knowledge produced in participatory planning process can be both generalizable and scientific or specific and local.
- What is the focus of participatory planning? The focus of participatory planning can be on the process or on the outcome. The scale of participatory planning can be the master plan level or detailed plan level.
- Which methods should/can be used in participatory planning? There is an abundance of available methods for participatory planning, both more traditional and methods applying new technology.
- What is the role of participatory planning in planner's identity and in planning profession? Planning can be seen both as a closed profession and as deliberative planning the role of participation varies accordingly.
- When participatory planning should be applied? There are various views about when participatory planning is most useful, important and influential.

Workload: Detailed description of workload:

Lectures & discussions 26 h (13 x 2 h)

Methodological exercises 6 h

Reading and reflection 63 h

Writing 20 h

Total 135 h

Assessment (SV): Kursen betygsätts enligt skalan 1-5. Vitsordet beräknas på följande sätt:

- 10 % personliga reflexioner
- 10 % aktivt deltagande på föreläsningarna
- 80 % individuellt kursarbete

Assessment (FI): Kurssisuoritukset arvioidaan asteikolla 1-5. Arvosana lasketaan seuraavasti:

- 10 % yksilöllinen reflektio
- 10 % aktiivinen osallistuminen luennoilla
- 80 % yksilöllinen kurssityö

Assessment: The course will be assessed with the scale 0-5. The score is calculated based on the following rules:

- 10 % individual reflections
- 10 % active participation in classes
- 80 % individual course assignment

Registration (FI): Via Sisu. Master's programme in Spatial Planning and Transportation Engineering –ohjelman opiskelijat ovat etusijalla. Kurssille otetaan korkeintaan 40 opiskelijaa.

Registration (SV): Via Sisu. Studenter på Master's programme in Spatial Planning and Transportation Engineering prioriteras. Det maximala antalet studenter är 40.

Registration: Via Sisu. Students of the Master's programme in Spatial Planning and Transportation Engineering are prioritized. The maximum number of students is 40.

SPT-E4010 - Transport Modelling D

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, advanced studies (optional)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

*Note that due to the effects of the COVID-19 virus, course descriptions may change.
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Grading scale: 0-5

Teaching Periods: 2020-2021 Spring III / 2021-2022 Spring III

Teacher-in-Charge: Claudio Roncoli

SDG goals: Good health and well-being, Reduced inequalities, Sustainable cities and communities, Climate action

Substitute: Yhd-71.3235 Traffic Studies and Forecasting

Prerequisite:

Outcome: A student who has passed the course will be able to:

- Justify data collection and management methods and technology;
- Apply trip-based, discrete-choice and activity-based models for transport systems planning;
- Apply network theory to transport systems planning;
- Explain differences and similarities between different models used for transport systems planning;
- Follow scientific literature in transport systems modelling.

Content:

- Introduction to Transport Modelling
- Data management
- Trip generation
- Trip distribution
- Modal split
- Traffic assignment
- User equilibrium vs System optimal
- Activity-based modelling
- Integrated land-use and transport models

Workload:

Contact sessions 40 h

Individual learning 40 h

Exercises 55 h

Assessment: Calculation exercises, home assignments and project.

Material:

Registration: Via Sisu

SPT-E4020 - Traffic Flow Theory D

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, advanced studies (optional)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Spring IV / 2021-2022 Spring IV

Teacher-in-Charge: Claudio Roncoli

SDG goals: Good health and well-being, Sustainable cities and communities, Climate action

Substitute: Yhd-71.3240 Liikennevirran ominaisuudet

*Note that due to the effects of the COVID-19 virus, course descriptions may change.
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Prerequisite: -

Outcome: A student who has passed the course is able to

- Describe the main characteristics of traffic flow
- Represent traffic phenomena using different methods and tools
- Recognise how traffic congestion starts and propagate
- Select and apply appropriate methods and techniques for analysing traffic-related problems Interpret and elaborate different type of traffic data
- Follow scientific literature in traffic flow theory

Content:

- Basic characteristics of traffic flow,
- Tools for analysing traffic behavior and characteristics,
- Macroscopic and microscopic modelling of traffic flow,
- Analysis of traffic operations for various facilities

Workload:

- Contact sessions 40 h
- Exercises 55 h
- Group-work 40 h

Assessment: Calculation exercises, home assignments and project assignment.

Registration: Via Sisu

SPT-E4030 - Traffic Management D

Departments: Department of Built Environment

Scope: 5

Status: Master's programme in Spatial Planning and Transportation Engineering, advanced studies (optional)

Level: Master

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Spring V / 2021-2022 Spring V

Teacher-in-Charge: Iisakki Kosonen

SDG goals: Good health and well-being, Sustainable cities and communities, Climate action

Substitute: Yhd-71.3250 Liikenteen hallinta

Prerequisite: -

Outcome: After the course, the student should be able to:

- Plan the use of road signs
- Plan the timing of traffic signals
- Understand of the multi-level/multi-objective nature of the traffic control and mobility management
- Understand the need of intelligent systems in order to achieve the objectives related to safety, fluency, environmental effects, energy, economy, level of service
- Choose the best technologies and services against the given requirements and to evaluate the benefits
- Construct a vision of what is required from the future transport system to solve the major challenges

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Content:

- Mobility management, traffic control, intelligent transportation system (ITS).
- Traditional traffic control with signs and traffic signals.
- The use of sensor-, communication, data processing technologies in real-time systems and services.
- The use of mobile devices and applications in transport and mobility.
- Traffic information and control systems, road charging, incident management, automated law enforcement, route guidance, multi-modal door-to-door guidance, Mobility as a Service (MaaS).
- Intelligent road, intelligent vehicle, driving support systems, self-driving cars.
- Sustainable energy solutions, electric mobility.

Workload: The workload of students consists of lectures, exercises and other work and well as independent work.

Assessment: Exercise work, final exam

Material: Slides of the lectures <https://mycourses.aalto.fi>, Textbook, additional material

Registration: Via Sisu

SPT-E4040 - Integrated Urban Transport D

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering

Level: Master

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Spring III / 2021-2022 Spring III

Teacher-in-Charge: Milos Mladenovic

SDG goals: Decent work and economic growth, Industry, innovation and infrastructure, Reduced inequalities, Sustainable cities and communities, Climate action

Substitute: -

Prerequisite: SPT-E1020, SPT-E1040

Outcome: A student who has passed the course will be able to:

- understand the dimensions of transport system integration
- evaluate macroscopic planning and operations concepts
- evaluate microscopic operations and design concepts
- formulate interrelated system components

Content: The course content will include:

- Transit-oriented development
- Transit network planning and operations
- Demand-responsive transport systems
- Parking management
- Terminals
- City logistics
- Street design

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- Emerging mobility services

Workload:

- Lectures and in-class activities (60 h)
- Individual learning (75 h)

Assessment: In-class activity (45%) Assignments (55%)

Material:

- Lectures and guest lectures
- Discussion sessions
- Individual and group in-class exercise
- Assignments
- Course material and scientific literature
- Site visit

Registration: Maximum number of students on the course is 40. Priority will be given to students in the Master s Programme in Spatial Planning and Transportation Engineering.

SPT-E4050 – Transport Economics

Department: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2021-2022 Spring (Period III) (a new course for 2021-2022)

Teacher-in-Charge: Prottoy Akbar

SDG goals: Sustainable cities and communities, climate action

Substitute: No

Prerequisite: No prerequisites

Learning Outcome: At the end of the course, the student will be able to:

- recognize tools available to urban planners to influence travel behavior and minimize negative spillovers to society
- contribute productively to discussions on the effectiveness of various contemporary transportation policies
- use data to analyse the social costs and benefits of new (and planned) projects and policies

Content:

Issues in Transportation Economics

- Demand for transportation
- Pricing and supply of transportation
- Externalities, such as road congestion and pollution
- Policy interventions, such as congestion pricing and vehicle taxation
- Project evaluation using data
- Discrete choice models and cost-benefit analyses

Workload: will be announced in the course syllabus

Assessment: will be announced in the course syllabus

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Material: will be specified during the course

Registration: Via Sisu

SPT-E5010 - Urban and Regional Development D

Name (FI): Kaupunkien ja alueiden kehittäminen L

Name (SV): Urban och regional utveckling L

Departments: Department of Built Environment

Scope: 5

Status: Master's programme in Spatial Planning and Transportation Engineering, advanced studies (optional)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

Languages of attainment: English, Finnish, Swedish

Grading scale: 0-5

Teaching Periods: 2020-2021 Spring V / 2021-2022 Spring V

Teacher-in-Charge: Tuomas Ilmavirta

SDG goals: Sustainable cities and communities, Life on land

Substitute: Maa-78.3240 Kaupunkien ja alueiden kehittämisen politiikat

Prerequisite: -

Outcome (FI): Kurssin suoritettuaan opiskelija

- tuntee kaupunkien ja alueiden kehitystä koskevan teoreettisen keskustelun ja osaa käydä akateemisia keskusteluja aiheesta
- pystyy kriittisesti analysoimaan kaupunkiympäristöä, kaupunkikehitystä ja siihen liittyviä politiikkoja: niiden tavoitteet ja keinot sekä suhde aluesuunnitteluun
- tunnistaa ja osaa analysoida suunnittelun ja kaupunkikehityksen kiistanalaista luonteeltaan yhteiskunnallista taustaa ja voi vastaavasti pohtia omaa roolia suunnittelijana

Outcome (SV): Efter kursen en student:

- känner till den teoretiska diskussionen om stads- och regional utveckling och kan delta i akademiska diskussioner om temat
- kan kritiskt analysera stadsmiljöer, stadsutveckling och relaterad politik: deras mål och medel såväl som deras relation till fysisk planering
- känner igen och kan analysera den omtvistade naturen samhälleliga sammanhanget för planering och stadsutveckling, och kan reflektera över sin egen roll som planerare i enlighet därmed

Outcome: After the course a student: After the course a student:

- is familiar with the theoretical discussion on urban and regional development and can engage in academic discussions on the theme
- is able to critically analyse urban environments, urban development, and related policies: their aims and means as well as their relation to spatial planning
- recognizes and can analyse the contested nature societal context of planning and urban development, and can reflect on one's own role as a planner accordingly

Content (FI): Kurssi tarjoaa kriittisen yleiskuvan kaupunkien ja alueiden kehityksestä ja siihen liittyvistä teorioista.

Sisältää esimerkiksi seuraavat aiheet:

- Kaupungit ja alueet kaupungistuneessa maailmassa
- Historiallinen katsaus kaupunkikehitykseen

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Check the latest information on courses on the MyCourses website.*

- Kaupunkikehityksen ja aluesuunnittelun ajankohtaiset teemat ja nousevat suuntaukset
- Ihmiskeskeinen elinympäristö
- Kaupunkimuutos ja alueellinen eriytyminen

Content (SV): Kursen ger en kritisk översikt över stads- och regional utveckling och relaterade teorier. Inklusive t.ex. följande ämnen:

- Städer och regioner i urbaniserande värld
- Historisk översikt över stadsutveckling
- Aktuella teman och nya trender inom stadsutveckling och fysisk planering
- Mänsklig centrerad livsmiljö
- Stads ändring och rumslig differentiering

Content: The course provides a critical overview of urban and regional development and related theories. Including e.g. following topics:

- Analysis of urban environments & urban development
- Policies and politics of urban development
- Urban change and spatial differentiation
- Human-centred living environment
- Topical theoretical themes and emerging trends in urban development

Workload (FI): 24 h luentoja, 116 h itsenäistä työtä ja pienryhmätyöskentelyä

Workload (SV): 24 h lecturer, 116 h individuellt arbete och arbete i små grupper

Workload: Lectures, independent work and working in small groups.

Assessment (FI): Assessment is based on learning outcomes, students are assessed based on their individual performance during the course. (40% on classes and reading seminars, and 60% on exam / course work)

Assessment (SV): Bedömningen bygger på lärandemål, eleverna bedöms utifrån deras individuella prestationer under kursen. (40% på lektioner och lässeminarier och 60% på examens- / kursarbete)

Assessment: Assessment is based on learning outcomes and course work (individual assignments and group work).

Material (FI): Arviointi perustuu oppimistuloksiin, opiskelija arvioidaan henkilökohtaisen suorituksen perusteella kurssin aikana. (40% luokissa ja luentoseminaareissa ja 60% tentti / kurssityössä)

Material (SV): Academic readings. In addition, also material about urban development from various sources (planning documents, city strategies, media articles, videos, etc.)

Material: Academic readings. In addition, also material about urban development from various sources (planning documents, city strategies, media articles, videos, etc.)

Registration (FI): Via Sisu

Registration (SV): Via Sisu

Registration: Via Sisu

SPT-E5020 - Urban Experience D

Departments: Department of Built Environment

Scope: 5

Status: Master's Programme in Spatial Planning and Transportation Engineering, advanced studies (optional)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: No

Teaching language: English

MASTER'S PROGRAMME IN SPATIAL PLANNING AND TRANSPORTATION ENGINEERING / CURRICULA 2020-2021, 2021-2022 / COURSE DESCRIPTIONS

*Note that due to the effects of the COVID-19 virus, course descriptions may change.
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Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Spring III / 2021-2022 Spring III

Teacher-in-Charge: Marketta Kyttä

SDG goals: Good health and well-being, Reduced inequalities, Sustainable cities and communities, Climate action

Substitute: -

Prerequisite: -

Outcome: The aim of the course is to introduce the student the possibilities to use research on person-environment relationship in land use planning. The course explores the experiential world of an urban dweller or the user of urban places. After the course the student:

- Can identify the main approaches on person-environment transactions and human experiences in various urban settings
- Knows a variety of methodological approaches of environmental psychology and human-environmental research and has a capability to apply some of them in knowledge creation for land use planning projects
- Knows how to gather and analyze information about urban experiences and how to search scientific knowledge from empirical person-environment research

In addition she/he also

- Can critically evaluate the quality of urban spaces or the quality of plans from the point view of the human experience
- Can apply person-environment research in land use planning

Content: The course focuses on the study of urban experiences in relation to the physical characteristics of the settings. During the course the student will learn about the classic approaches in person-environment research and environmental psychology. These themes include:

- Aesthetic experiences
- Sense of community
- Perceived safety
- Restorative environments
- Childfriendly environments
- Place attachment

Each theme will be studied both theoretically and empirically. In addition, the course will cover some more holistic themes, such as social sustainability and various urban lifestyles.

When possible, a collaboration with a real-life planning case will be realized.

Workload: Workload: Lectures 24 h (6 x 4h) Online sessions 6 h Group work 50 h Individual assignments 55 h
Total 135 h (5 cr)

Assessment: The course utilizes student-centered learning methods. The methods include online learning, group work and lectures. Assessment is based on the project work that is realized in groups as well as on individual performance and assignments.

Registration: Max 40 students. The priority will be given to the students of Master's Programme in Spatial Planning and Transportation Engineering.

SPT-E8010 - Smart and Liveable City Studio D, V

Departments: Department of Built Environment

Scope: 10

Status: Master's Programme in Spatial Planning and Transportation Engineering, advanced studies (optional)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

*Note that due to the effects of the COVID-19 virus, course descriptions may change.
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Course can be repeated: No

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Spring IV-V / 2021-2022 Spring IV-V

Teacher-in-Charge: Aija Staffans

SDG goals: Sustainable cities and communities

Substitute: -

Prerequisite: For the project work of the course you should master at least one and be somewhat familiar with at least one of the following skills:

- You are able to utilize and combine various cad drawings and other data from different sources, often provided as autocad-files, potentially using different coordinate systems
- You are able to use either Revit or Archicad (and possibly Rhino/3dsmax + a rendering software) to open existing BIM models, quickly model, edit, and visualize anything from building parts to neighborhoods
- You are able to use a graphic suite of your choosing to create visually appealing illustrations, charts, drawings, maps and page layouts
- You are able to create real-time rendered 3d-scenes + simple logic and controls using a general purpose game engine such as Unity
- You are able to utilize GIS data provided in different formats and coordinate systems using a suite such as ArchGIS
- You can create interactive web-based visualizations HTML5 (with or without libraries such as D3) and/or mapping tool APIs, such as Google maps
- You are able to use advanced analysis methods either by powerusing Excel including Macros/Pivot tables, and/or using Matlab, Mathematica
- You are able to create simulations using traffic simulation software (e.g., VISSIM, Aimsun, Paramics, etc.) and/or use travel demand forecasting software (e.g., eMME, VISSUM, CUBE, etc.)
- You are proficient with some evaluation tools (e.g., accessibility assessment, cost-benefit analysis, multicriteria analysis, HDM, STEAM)
- You are able to create prototypes and implement algorithms using a programming language and a database management software of your choice (e.g., MS Visio, Simulink, Python, VBA, SQL)
- You are proficient with some of the traffic operations design tools (e.g., Synchro, Transyt 7F, HCS+, SIDRA)
- You are confident with your statistical analysis skills (e.g., SPSS, JMP, Minitab, R)
- You are able to utilize qualitative data analysis tools (e.g., NVivo, Atlas.ti)

Outcome: The aim of the course is to provide understanding of the multidimensional concept of 'smart and liveable city' and the ubiquitous ICT in our living environment, what this means in different contexts and how it can be applied and evaluated from a variety of perspectives in the practice of planning and design.

As an outcome of the course the student achieves knowledge of different urban systems in the context of liveability, and recognizes the wide-ranging expertise necessary to the planning and developing cities.

Students will learn to cope with the uncertainties in available planning data and, to consider the reliability of methods through a hands-on process in which their planning principles are constantly tested.

Students will get familiar with the evolving field of computational planning and planning support systems.

Finally, students will receive practical skills which support their professional development.

Content: The emphasis of the course is methodological. The students will conduct a series of methodological exercises related to planning and design. The course follows a human-centric framework and discusses widely the liveability of cities.

MASTER'S PROGRAMME IN SPATIAL PLANNING AND TRANSPORTATION ENGINEERING / CURRICULA 2020-2021, 2021-2022 / COURSE DESCRIPTIONS

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Students will work both individually and in small teams in cooperation with professionals in the field. Besides the weekly contact teaching, an intensive week will be arranged to support working together.

Lectures will be arranged related to liveability, smart cities and digitalized planning.

Workload:

Exercises 210 hours

Intensive week 30 hours

Lectures and readings 30 hours

Total 270 h (10 cr)

Assessment: The pedagogy of the course is based on collaborative and problem oriented approaches, as well as learning by doing, and seeks to achieve both double and triple loop learning. Collaborative methods, rich use of urban information and ICT-enabled tools, presentations and visualization skills are emphasized.

The course will be passed when the student has the following assignments accepted:

- 1) conducting all the planning related exercises on the smart and liveable city,
- 2) co-creating of the smart & livable city concept from a holistic and integrative perspective.

Therefore, 80 % participation in the classroom work is obligatory.

Material: Readings of the course (articles, book chapters etc.) will be specified later.

Registration: Max 15 students; masters' students from land use planning and transportation engineering, architecture, landscape architecture, real estate business, energy engineering, geo-informatics or other relevant master's programs.

SPT-E8020 - Special Course in Spatial Planning and Transportation Engineering D, V

Departments: Department of Built Environment

Scope: 1 - 15

Status: Master's programme in Spatial Planning and Transportation Engineering, advanced studies (optional)

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: Yes

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Autumn I-Spring V / 2021-2022 Autumn I-Spring V

Teacher-in-Charge: Claudio Roncoli, Marketta Kyttä, Milos Mladenovic, Raine Mäntysalo

SDG goals: Industry, innovation and infrastructure, Sustainable cities and communities

Substitute: Maa-78.3360 Maankäytön suunnittelun erikoistyö OR Maa-78.3370 Projektikurssi OR yhd-71.3180 Liikennetekniikan vaihtuva kurssi OR Yhd-71.3185 Liikenne- ja tietekniikan erikoistyö

Prerequisite: -

Outcome: Specialization in a certain thematic, agreed with one of the teachers in charge, in spatial planning and transportation engineering.

Content: To be agreed with one of the teachers in charge.

Workload: -

Assessment: Varying.

Material: To be agreed with one of the teachers in charge.

Registration: Through contacting one of the teachers in charge.

SPT-E8030 - Summer School in Spatial Planning and Transportation Engineering D, V

MASTER'S PROGRAMME IN SPATIAL PLANNING AND TRANSPORTATION ENGINEERING / CURRICULA 2020-2021, 2021-2022 / COURSE DESCRIPTIONS

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Departments: Department of Built Environment

Scope: 2 - 10

Status: Master's Programme in Spatial Planning and Transportation Engineering, advanced studies

Level: Master's level, doctoral level

Also qualifies to postgraduate studies: Yes

Course can be repeated: Yes

Teaching language: English

Languages of attainment: English

Grading scale: 0-5

Teaching Periods: 2020-2021 Summer / 2021-2022 Summer

Teacher-in-Charge: Hanna Mattila, Tuomas Ilmavirta, Milos Mladenovic

SDG goals: Industry, innovation and infrastructure, Sustainable cities and communities, Partnerships for the goals

Substitute: Maa-78.3351 IFHP Urban Planning and Design School

Futher information: Please see course's MyCourses page. Or contact teachers in charge of the course.