

Hochschule für Technik Stuttgart

Study- and Examination Regulations

**Master Programme
Smart City Solutions**

Date: 23.02.2022

Pursuant to § 8 (5) in conjunction with § 32 (3) and (4) of the Act on Higher Education in Baden-Württemberg (Landeshochschulgesetz - LHG) of 13 March 2018 (Journal of Laws, p. 85), the Senate of Hochschule für Technik Stuttgart (hereinafter referred to as University) adopted the following Study and Examination Regulations (SPO) on 23 February 2022. Approval by the Rector has been granted on 23 February 2022.

§ 46 Master Programme Smart City Solutions - SCS

In an international environment, students acquire interdisciplinary skills in the field of Smart City Solutions. Students are trained by specialists to become generalists for a holistic approach to Smart Cities. The focus of the Master Programme lies on urban planning and development, also in the context of the Smart Region, intelligent architecture and building services, digitalisation processes such as GIS, Smart City Information Modelling, and digital services. The syllabus is complemented by smart infrastructure for transport and energy, resource management, financing for Smart Cities as well as management and governance skills.

(1) Regular Study Duration

- 1.1 Full-time: The regular study duration is 3 semesters (Table 1b).
- 1.2 Part-time: The regular study duration is 5 semesters (Table 1c).

(2) Modules and Language of Instruction

The Study and Examination Plan specified in Table 1a shows the allocation of modules to the respective semester as well as the examinations required for a successful completion of the Master Programme. The language of instruction and examination is English. The Master Thesis must be written in English language and must be presented in a 20-minute presentation in English language.

(3) Deadlines

The Master thesis must be completed within 18 weeks.

The successful completion of 48 Credit Points of all examinations is a prerequisite for admission to the Master Thesis.

(4) Modules, Types of Examinations, Overall Grade

Table 1a specifies the module examinations as well as the types of examination required for the successful completion of a module.

For the calculation of the overall grade, the module grades are weighted according to the Credit Points as specified in Table 1a. The module grades are calculated on the basis of the individual learning units (Table 1d) of the module, weighted by the respective Credit Points.

(5) Academic Degree

The successful completion of the Master Programme will be awarded with the academic degree Master of Engineering (M. Eng.).

Table 1a: Study and Examination Plan

| Semester 1 – Urbanism, Buildings, Information | Abbrev | SWS | CP | PL |
|--|---------------|------------|-----------|-----------|
| Module 1 – Basics of Smart Solutions | BS | 6 | 6 | SA |
| Module 2 – Smart Urbanism | SU | 6 | 6 | SA |
| Module 3 – Smart Buildings | SB | 6 | 6 | SA |
| Module 4 – Smart Information Modelling | IM | 6 | 6 | SA |
| Module 9 – Case Study 1 | CS 1 | 6 | 6 | SA |
| TOTAL SEMESTER 1 | | 30 | 30 | |

| Semester 2 –Management, Finance, Infrastructure | Abbrev. | SWS | CP | PL |
|--|---------|-----|----|------------|
| Module 5 – Smart Energy & Mobility | EM | 6 | 6 | SA + KL 45 |
| Module 6 – Smart Resources & Resilience | RR | 6 | 6 | SA |
| Module 7 – Smart Sustainable Finance | SF | 6 | 6 | SA |
| Module 8 – Smart Governance, Citizens & Management | GM | 6 | 6 | SA |
| Module 9 – Case Study 2 | CS 2 | 6 | 6 | SA |
| TOTAL SEMESTER 2 | | 30 | 30 | |

| Semester 3 Master Thesis | Abbrev. | SWS | CP | PL |
|---------------------------------|---------|-----|----|---------|
| Module 10 – Master Thesis | MT | 7 | 30 | SA + MA |
| TOTAL SEMESTER 3 | | 7 | 30 | |

Table 1b: Overview Full-time Study

| | Learning Units | SWS | CP |
|-------------------|-------------------------|-----|----|
| Semester 1 | Modules 1-4, Module 9.1 | 30 | 30 |
| Semester 2 | Modules 5-8, Module 9.2 | 30 | 30 |
| Semester 3 | Module 10 | 7 | 30 |
| TOTAL | | 67 | 90 |

Table 1c: Overview Part-time Study

| | | SWS | CP |
|-------------------|--------------------------------------|-----|----|
| Semester 1 | mind. 2 Modules from 1-4, Module 9.1 | 18 | 18 |
| Semester 2 | mind. 2 Modules from 5-8 Module 9.2 | 18 | 18 |
| Semester 3 | 2 Modules from 1-4 | 12 | 12 |
| Semester 4 | 2 Modules from 5-8 | 12 | 12 |
| Semester 5 | Module 10 | 7 | 30 |
| TOTAL | | 67 | 90 |

Table 1d: Learning Units (Not all learning units have to be offered every semester.)

| Modules and Courses | SWS | CP |
|--|------------|-----------|
| Module 1: Basics of Smart Solutions | | |
| • Global Climatic & Demographic Developments & Challenges | 1,5 | 1,5 |
| • Sustainable Macroeconomics | 1,5 | 1,5 |
| • Societal Developments & Challenges | 1,5 | 1,5 |
| • Smart City Parameters & Measuring | 1,5 | 1,5 |
| Module 2: Smart Urbanism | | |
| • Smart City & Smart Region | 1,5 | 1,5 |
| • Smart Urban Development Principles & Concepts | 1,5 | 1,5 |
| • Smart Social Infrastructure & Accommodation | 1,5 | 1,5 |
| • Smart Town Planning & Land Policy | 1,5 | 1,5 |
| Module 3: Smart Buildings | | |
| • Smart Architecture Concepts | 1,5 | 1,5 |
| • Smart Energy Concepts | 1,5 | 1,5 |
| • Smart Engineering & Technologies | 1,5 | 1,5 |
| • Planning & Building Processes (incl. BIM, Certification) | 1,5 | 1,5 |
| Module 4: Smart Information Modelling | | |
| • Smart Data Components | 1,5 | 1,5 |
| • Geographic Information Systems | 1,5 | 1,5 |
| • City Information Model (CIM) | 1,5 | 1,5 |
| • Digital Platforms & Services | 1,5 | 1,5 |
| Module 5: Smart Energy & Mobility | | |
| • Smart Energy Generation | 1,5 | 1,5 |
| • Smart Grid Solutions | 1,5 | 1,5 |
| • Smart Mobility Strategies & Management | 1,5 | 1,5 |
| • Smart Operations & Maintenance | 1,5 | 1,5 |

| | | |
|---|---------------------------|----------------------------|
| Module 6: Smart Resources & Resilience <ul style="list-style-type: none"> Smart Water & Waste Management Pollution Prevention & Recovery Strategies (Air, Soil, Water) Smart Urban Biosphere & Habitat (incl. Nutrition) Resilience Strategies & Measures (Flood, Drought, Sea Level, Hurricane) | 1,5 1,5 1,5 1,5 | 1,5 1,5 1,5 1,5 |
| Module 7: Smart Sustainable Finance <ul style="list-style-type: none"> Financial Markets & Institutions Sustainable Finance Infrastructure & Project Finance Digitization, Financial Innovation & FinTech | 1,5 1,5 1,5 1,5 | 1,5 1,5 1,5 1,5 |
| Module 8: Smart Governance, Citizens & Management <ul style="list-style-type: none"> Principles of Public Policy & Governance Public Services and Public Sector Management Lean & Agile Management Approaches Leadership & Stakeholder Management | 1,5 1,5 1,5 1,5 | 1,5 1,5 1,5 1,5 |
| Module 9: Case Study <ul style="list-style-type: none"> Case study 1: Urbanism, Building, Information Case study 2: Infrastructure, Management, Finance | 6 6 | 6 6 |
| Module 10: Master Thesis <ul style="list-style-type: none"> Academic Writing Master Thesis Proposal Master Thesis Research Master Thesis Project in Smart Cities Master Thesis Presentation & Abstract | 1,5 1,5 2 0 2 | 1,5 1,5 2 23 2 |

These Study and Examination Regulations shall be effective for all students commencing their studies by the winter semester 2022/2023.

Approval by the Rector:

Stuttgart, 23 February 2022

Prof. Dr. Katja Rade
Rector

Evidence of notice

Authentication

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