

Hochschule für Technik Stuttgart

Study and Examination Regulations

Master Programme
Smart City
Solutions

(Full-time – or part-time)

As of: 4 December 2019

Please note: The English version of the Study and Examination Regulations has been created for reference purposes. Only the original German version is legally binding. In this context, Hochschule für Technik Stuttgart cannot assume any liability for damages arising from misinterpretations of the German original in the English version.

Pursuant to § 8 (5) in conjunction with § 32 (3) and (4) of the Act on Higher Education in Baden-Württemberg (Landeshochschulgesetz - LHG) from 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 11 December 2019:

Approval by the Rector was granted on 11 December 2019.

§ 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 comprehensive approach to Smart Cities. The focus of the Master programme lies on urban planning and development, also in the context of a 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 Period

1.1 Full-time study: The regular study period of the programme is three semesters.

1.2 Part-time study: The regular study period of the programme is five semesters.

(2) Modules and Programme Language

The Study and Examination Plan as shown 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 is to be produced in English and shall be presented in a 20-minute presentation in English.

(3) Deadlines

The Master thesis is to be completed within 18 weeks. Prerequisite for admission to the Master's thesis and the beginning of module 10 is the successful completion of 48 credit points of the overall study credits.

(4) Modules, Types of Examinations, Overall Grade

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

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

(5) Master 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, Infrastructure | Abbr. | 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 CP SEMESTER 1 | | 30 | 30 | |
| | | | | |
| Semester 2 Information, Management, Finance | Abbr. | 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 + KL 90 |
| Module 8 Smart Governance, Citizens & Management | GM | 6 | 6 | SA |
| Module 9 Case Study 2 | CS 2 | 6 | 6 | SA |
| TOTAL CP SEMESTER 2 | | 30 | 30 | |
| | | | | |
| Semester 3 Master Thesis | Abbr. | SWS | CP | PL |
| Module 10 Master Thesis Project | TP | 10 | 10 | SA |
| Module 11 Master Thesis | MT | 7 | 20 | MA |
| TOTAL CP SEMESTER 3 | | 17 | 30 | |

SWS= hours per week **PL**= type of examination: SA (written paper), KL (written examination)

| Summary full-time study | SWS | CP |
|--------------------------------|------------|-----------|
| Semester 1 | 30 | 30 |
| Semester 2 | 30 | 30 |
| Semester 3 | 17 | 30 |
| TOTAL CP | 77 | 90 |

| Summary part-time study | SWS | CP |
|---|------------|-----------|
| Semester 1 At least 3 modules (without Case Study 1 and 2) | 18 | 18 |
| Semester 2 At least 3 modules (without Case Study 1 and 2) | 18 | 18 |
| Semester 3 Case Study 1 + 1 modul | 12 | 12 |
| Semester 4 Case Study 2 + 1 modul | 12 | 12 |
| Semester 5 - Master Thesis | 17 | 30 |
| TOTAL CP | 77 | 90 |

Table 1b: Overview Modules and Courses

(Not all sub-modules listed below are offered every semester)

| Modules and Courses | SWS | CP |
|---|------------------------------|------------------------------|
| Module 1: Basics of Smart Solutions <ul style="list-style-type: none"> • Global Climatic & Demographic Developments/ Challenges • Sustainable Macroeconomics • Societal Developments & Challenges • Smart City Parameters & Measuring | 1,5 1,5 1,5 1,5 | 1,5 1,5 1,5 1,5 |
| Module 2: Smart Urbanism <ul style="list-style-type: none"> • The Smart City in a Smart Country • Smart Urban Development Principles & Concepts • Smart Social Infrastructure & Accommodation • Smart Town Planning; Processes & Legal basis | 1,5 1,5 1,5 1,5 | 1,5 1,5 1,5 1,5 |
| Module 3: Smart Buildings <ul style="list-style-type: none"> • Smart Architecture Concepts • Smart Energy Concepts • Smart Engineering & Technologies • Planning & Building Processes (BIM, Certification, etc.) | 1,5 1,5 1,5 1,5 | 1,5 1,5 1,5 1,5 |
| Module 4: Smart Information Modelling <ul style="list-style-type: none"> • Smart Data Components • Geographic Information Systems • City Information Model (CIM) • Digital Platforms & Services | 1,5 1,5 1,5 1,5 | 1,5 1,5 1,5 1,5 |
| Module 5: Smart Energy & Mobility <ul style="list-style-type: none"> • Smart Energy Generation • Smart Grid Solutions • Smart Mobility Strategies & Management • Smart Operations & Maintenance | 1,5 1,5 1,5 1,5 | 1,5 1,5 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 | | |
| • Principles of Public Policy & Governance | 1,5 | 1,5 |
| • Public Services and Public Sector Management | 1,5 | 1,5 |
| • Lean & Agile Management Approaches | 1,5 | 1,5 |
| • Leadership & Stakeholder Management | 1,5 | 1,5 |
| Module 9: Case Study | | |
| • Case study 1: Urbanism, Building, Information | 6 | 6 |
| • Case study 2: Infrastructure, Management, Finance | 6 | 6 |
| Module 10: Master Thesis Project | | |
| • Thesis / Project Preparation | 2 | 2 |
| • Master Thesis Project | 8 | 8 |
| Module 11: Master Thesis | | |
| • Academic Writing /MT Proposal | 3 | 3 |
| • Master Thesis | 2 | 15 |
| • MT Presentation & Abstract | 2 | 2 |

These Study and Examination Regulations shall be effective for the summer semester 2020.

Approval by the Rector:

Stuttgart, 11 December 2019

Prof. R. Franke
Rector

Evidence of notice

Authentication

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Effective from: