SMART CITY SOLUTIONS
CURRICULUM: 3 SEMESTERS

Programme Director: Prof. Roland Dieterle

SEMESTER 1 (€ 4.000)
URBANISM, BUILDINGS, INFORMATION

30 CP / 30 w.p.s.

MODULE 1 BS
BASICS OF SMART SOLUTIONS

ML: Prof. Dieterle

6 CP / 6 w.p.s.

1.1 CDD
Global Climatic & Demographic Developments/ Challenges
1.5 CP / 1.5 w.p.s.

1.2 SME
Sustainable Macroeconomics
1.5 CP / 1.5 w.p.s.

1.3 CD
Societal Developments/ Challenges
1.5 CP / 1.5 w.p.s.

1.4 SPM
Smart City Parameters & Measuring
1.5 CP / 1.5 w.p.s.

MODULE 2 SU
SMART URBANISM

ML: Dr. Kuhla v. B.

6 CP / 6 w.p.s.

2.1 SCC
The Smart City in a Smart Region
1.5 CP / 1.5 w.p.s.

2.2 SUD
Smart Urban Development Principles & Concepts
1.5 CP / 1.5 w.p.s.

2.3 SSI
Smart Social Infrastructure & Accommodation
1.5 CP / 1.5 w.p.s.

2.4 STP
Smart Town Planning; Land Policy
1.5 CP / 1.5 w.p.s.

MODULE 3 SB
SMART BUILDINGS

ML: Prof. Binder

6 CP / 6 w.p.s.

3.1 SAC
Smart Architecture Concepts
1.5 CP / 1.5 w.p.s.

3.2 SEC
Smart Energy Concepts
1.5 CP / 1.5 w.p.s.

3.3 SET
Smart Engineering & Technologies
1.5 CP / 1.5 w.p.s.

3.4 BIM
Planning & Building Processes (incl. BIM, Certification etc)
1.5 CP / 1.5 w.p.s.

MODULE 4 IM
SMART INFORMATION MODELLING

ML: Dr. Seelig

6 CP / 6 w.p.s.

4.1 SDC
Smart Data Components
1.5 CP / 1.5 w.p.s.

4.2 GIS
Geographic Information Systems
1.5 CP / 1.5 w.p.s.

4.3 CIM
City Information Model
1.5 CP / 1.5 w.p.s.

4.4 DPS
Digital Platforms & Services
1.5 CP / 1.5 w.p.s.

SEMESTER 2 (€ 4.000)
INFRASTRUCTURE, FINANCE, MANAGEMENT

30 CP / 30 w.p.s.

MODULE 5 EM
SMART ENERGY & MOBILITY

ML: Prof. Dr. Schmidt

6 CP / 6 w.p.s.

5.1 SEG*
Smart Energy Generation
1.5 CP / 1.5 w.p.s.

5.2 SGS*
Smart Grid Solutions
1.5 CP / 1.5 w.p.s.

5.3 SMM*
Smart Mobility Strategies & Management
1.5 CP / 1.5 w.p.s.

5.4 SEM
Smart Operations & Maintenance
1.5 CP / 1.5 w.p.s.

MODULE 6 RR
SMART RESOURCES & RESILIENCE

ML: Prof. Dr. Schmidt

6 CP / 6 w.p.s.

6.1 SWW*
Smart Water & Waste Management
1.5 CP / 1.5 w.p.s.

6.2 PPR
Pollution Prevention & Recovery Strategies (Air, Soil, Water)
1.5 CP / 1.5 w.p.s.

6.3 SUB
Smart Urban Biosphere & Habitat (incl. Nutrition)
1.5 CP / 1.5 w.p.s.

6.4 RSM
Resilience Strategies & Measures (Flood, Drought, Sea Level, Hurricane)
1.5 CP / 1.5 w.p.s.

MODULE 7 SF
SMART SUSTAINABLE FINANCE

ML: Prof. Dr. Popovic

6 CP / 6 w.p.s.

7.1 FMI
Financial Markets & Institutions
1.5 CP / 1.5 w.p.s.

7.2 SFI
Sustainable Finance
1.5 CP / 1.5 w.p.s.

7.3 IPF
Infrastructure & Project Finance
1.5 CP / 1.5 w.p.s.

7.4 DFI
Digitalization, Financial Innovation & Financial Tech.
1.5 CP / 1.5 w.p.s.

MODULE 8 GM
SM. GOVERNANCE, CITIZENS & MANAGEM.

ML: Prof. Dr. Rein

6 CP / 6 w.p.s.

8.1 PPG
Principles of Public Policy & Governance
1.5 CP / 1.5 w.p.s.

8.2 PSS
Public Services & Public Sector Management
1.5 CP / 1.5 w.p.s.

8.3 LAM
Lean & Agile Management Approaches
1.5 CP / 1.5 w.p.s.

8.4 LSM
Leadership & Stakeholder Management
1.5 CP / 1.5 w.p.s.

SEMESTER 3 (€2.000)
MASTER THESIS

30 CP / 30 w.p.s.

MODULE 10 TP
MASTER THESIS PROJECT

ML: Prof. Dieterle

10 CP / 10 w.p.s.

10.1 TPP
Thesis / Project Preparation
2 CP / 2 w.p.s.

10.2 MTP
Thesis-Project
8 CP / 8 w.p.s.

MODULE 11 MT
MASTER THESIS

ML: Prof. Dieterle

20 CP / 20 w.p.s.

11.1 AWP
Academic Writing / MT Proposal
3 CP / 3 w.p.s.

11.2 MTT
Master Thesis
15 CP / 15 w.p.s.

11.3 TPA
MT Presentation & Abstract
2 CP / 2 w.p.s.

MODULE 9 CS
CASE STUDY
FOCUS: INTEGRATION OF ALL MODULES

ML: Dr. Nadine Kuhla von Bergmann

12 CP / 12 w.p.s.

NOTE: IN ADDITION LECTURERS OF MODULES 1-8 CONTRIBUTE TO SUPERVISION OF RESPECTIVE CASE STUDY CHAPTERS (0.5 OUT OF 1.5 W.P.S. PER LEARNING UNIT)
* JOINT LECTURES WITH IITM STUDENTS

LU 9.1 / CS 1
CASE STUDY 1
FOCUS: URBANISM, BUILDING & INFORMATION

COURSE INTRODUCTION / CASE STUDY INTRODUCTION

AP: M1 - Prof. R. Dieterle, M2 - Dr. N. Kuhla v. Bergmann, M3 - Dipl. Ing. C. Krumrey , M4 - Dr. S. Seelig

6 CP / 6 w.p.s.

LU 9.2 / CS 2
CASE STUDY 2
FOCUS: INFRASTRUCTURE, MANAGEMENT & FINANCE

FINAL CASE STUDY PRESENTATION

AP: Prof. R. Dieterle, Dr. N. Kuhla v. Bergmann, NN (Finance); NN (Resources); NN (Energy, Mobility)

6 CP / 6 w.p.s.

ELECTIVES AND DEEPENDINGS

IN ORDER TO ENABLE STUDENTS TO SPECIALIZE AND DEEPEN THEIR KNOWLEDGE, THE CASE STUDYS ALLOW THEM TO DEEPEN THEIR KNOWLEDGE OF DIFFERENT SUBJECT AREA. IN ADDITION, LECTURES OF THE MASTER'S RPOGRAMME INTERNATION PROJECT MANAGEMENT CAN BE ATTENDED TO SPECIALISE IN INDIVIDUAL SUBJECTS. THESE CAN ONLY BE VISITED ADDITIONALLY, NOT IN PLACE OF SMART CITY SOLUTIONS LECTURES. ECTS AND GRADES OF LECTURES FROM IPM CAN NOT BE CONSIDERED IN SCS.

REMARKS

> **w.p.s.**
Weekly Semester Hours; Teacher's Count

> **SUPERVISION MT**
0.6 w.p.s. (MTT) plus 0.3 (MTP) for Supervisors 1 & 2 related to cohort size 25 students