

Integrative secondary-education programs and research in smart cities context

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Agenda

- Smart Cities Education at UAS Technikum Wien
- Master Degree Program - “Integrative Urban Development – Smart City”
- Supporting activities towards Smart City
- Research project „Way2 Smart – Korneuburg“
- Conclusion

UAS Technikum Wien – Facts and Figures

UAS Technikum Wien is the largest purely technical university of applied sciences in Austria

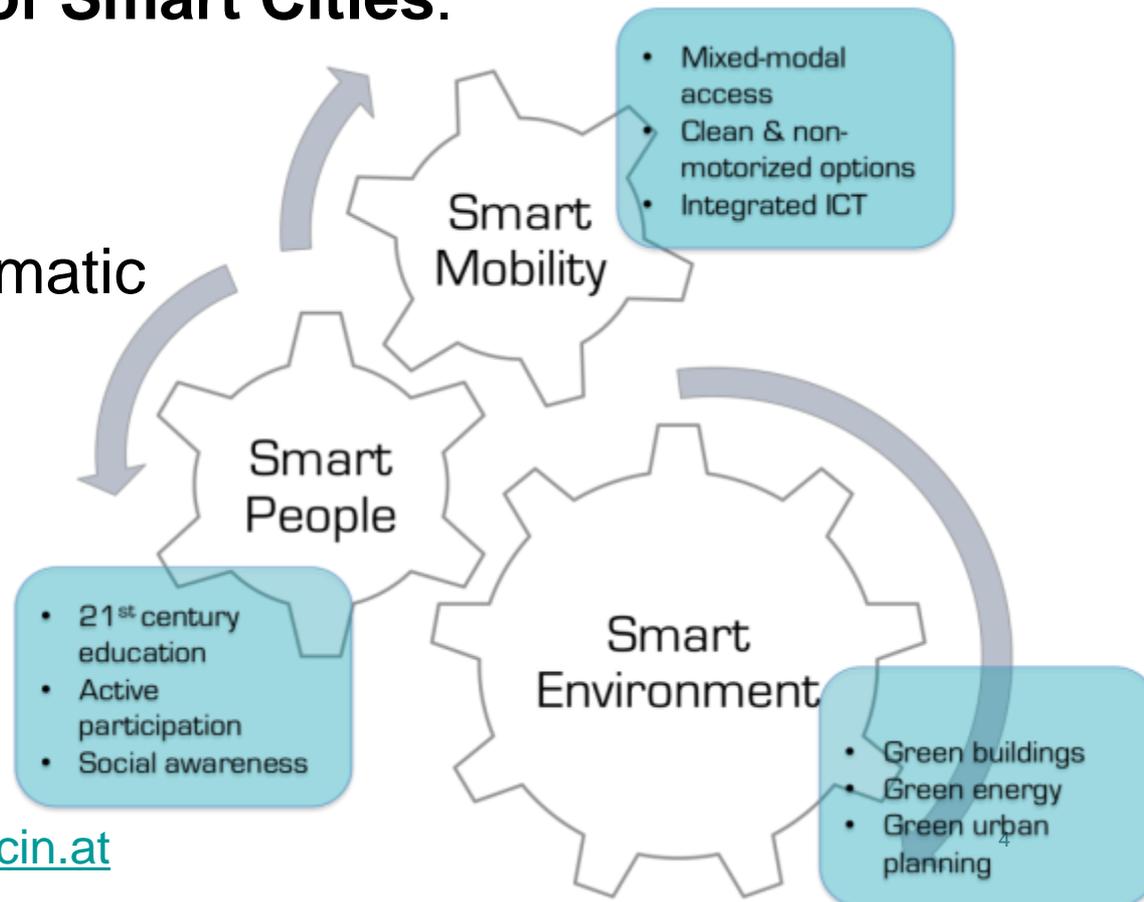
- **13 Bachelor's Degree programs**
- **17 Master's Degree programs**
- 15 Departments
- 4 Study centers
- 4107 Students (2014/15)
- 7699 Alumni
- 130 Full-Time lecturers
- 488 Lecturers from the business World



EU-ASCIN – European Academic Smart Cities Network

The EU-ASCIN project provided a solid foundation for Smart Cities deployment through setting up an **academic network in the area of Smart Cities.**

Main focus on the thematic corner stones



EU-ASCIN – European Academic Smart Cities Network

Timeframe 11/2013 - 10/2016, funded by city of Vienna

The EU-ASCIN project provided a solid foundation for Smart Cities deployment through setting up an **academic network in the area of Smart Cities**.



- Internationally coordinated area of **studies with focus on smart cities**
- International and **interdisciplinary projects** like a summer school, project workshops, laboratory and internships
- Network is **supported by a web-platform** where current information about **technologies, standards, competences and activities of network partners** will be permanently published.

Implementation of the smart cities specialisation

Bachelor's
degree program
Renewable
Energy
Technologies

Bachelor's
degree program
Transport and
Environment

Smart City
specialisation

- Energy Technologies
PV, solarthermal, heat pumps,
windpower
- Power Plants
Combined heat power, district
cooling, grids
- Building-Energy-Design
passiv-houses, E-Plus buildings
- **Smart Cities (new 2015)**

- Socio-Technical Aspects of
Smart Cities
- Smart City Influencing
Factors
- Big Data in Smart Cities
passiv-houses, E-Plus
buildings
- Urban Energy Supply
Systems

Master Degree Program “Integrative Urban Development – Smart City”

Key Facts

Degree: Master of Science in Engineering

Start: Winter term 2016/17

Students in 1st semester: 28

Language: German

Form: Part-Time

Duration: 4 semesters

Profile of course program by fields of competence

KF	Competences	ECTS	%
PRA	Project handling	12	10%
WA	Scientific working	36	30%
SCG	Smart City basics	6	5%
SMC	Smart City competences	48	40%
ST	Socio-technical competences	12	10%
WM	Business, Management, and Law	6	5%
		120	100%

Content: Smart Cities in Mobility, Energy, and ICT context (possibility for many elective courses)

Smart City Master Program

Module plan of the Master Program Integrative Urban Development – Smart City

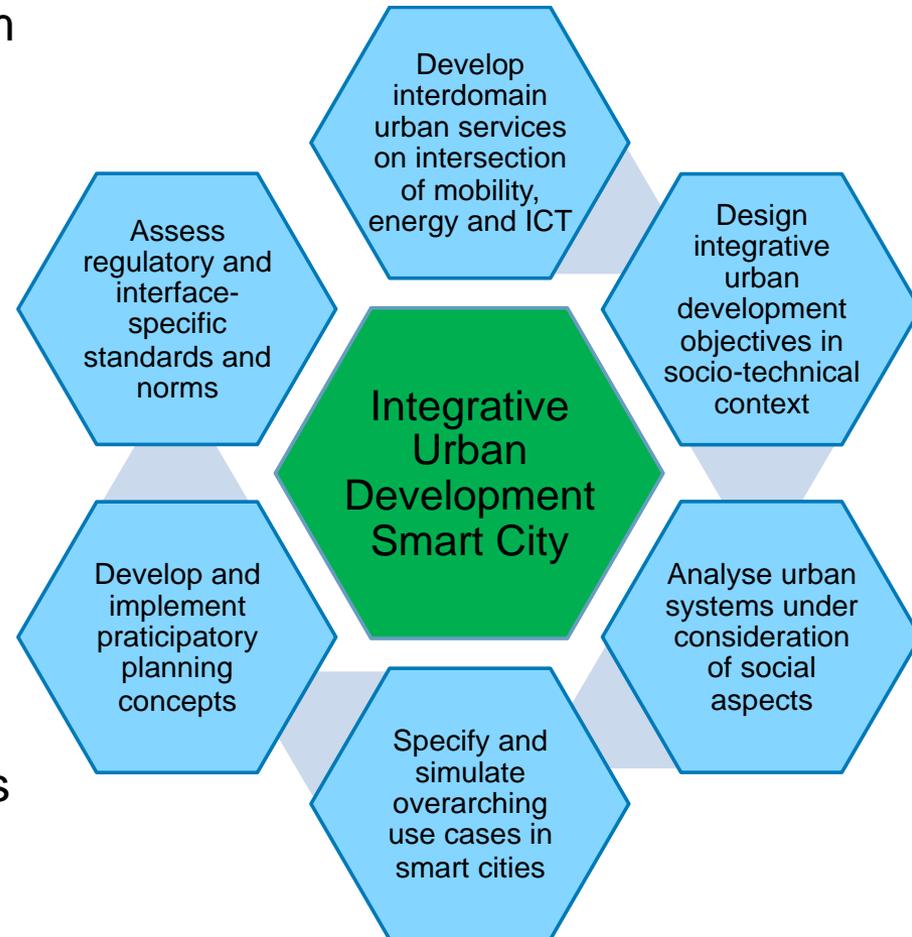
Semester	ECTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Semester 1	M11	6 ECTS			SCG	M12	6 ECTS			SMC	M13	6 ECTS			SMC	M14	6 ECTS			PRA	M15	6 ECTS			ST						
	Adjustment module					Urban Mobility					Elective Module 1					Project 1				Smart City Perspective											
Semester 2	M21	6 ECTS			SMC	M22	6 ECTS			SMC	M23	6 ECTS			SMC	M24	6 ECTS			PRA	M25	6 ECTS			ST						
	Urban Renewable Energy					ICT					Elective Module 2					Project 2				Business Cooperation											
Semester 3	M31	6 ECTS			SMC	M32	6 ECTS			SMC	M33	6 ECTS			SMC	M34	6 ECTS			WA	M35	6 ECTS			WM						
	Urban Planning					Simulation					Elective Module 3					Specialization				Business											
Semester 4	M41	30 ECTS																												WA	
	Master Module																														

Smart City Master – Competences and employment possibilities

Competences to be gained in the new Master Program

Considering the prospective employment possibilities, several key areas could be identified, including

- i) **infrastructure planning implementation and maintenance,**
- ii) **management and urban planning** such as city administration,
- iii) **industry** such as technology in mobility and energy domains as well as
- iv) **services** such as education and consulting



Smart City activities at the UAS Technikum Wien

- **Endowed professorship**

Relating to the subject of Energy Performance of Buildings Directive (EPBD) which requires that **all new buildings to be nearly zero-energy** by the end of 2020 (EPBD 2014), the **user's behaviour and diversity are the main foci**, which are not yet integrated in the daily building planning process

- **Smart Cities Competence Team**

The main objective of the competence team for Intelligent Technologies in Smart Cities (KiTSmart) is **to develop smart cities related courses and support scientific dissemination in the research community and considering the gender and diversity aspects.**

Demonstration project „Korneuburgs Way2Smart“

Until 2036 the forecasts predict at least **50 % increase in population** of Korneuburg. To meet the needs of a growing city - citizens, politicians and administration - planned Korneuburg's path to 2036: with **ambitious objectives in terms of energy and CO2-saving and concentration on “social togetherness”**.

The three years project is funded by the Austrian Climate and Energy Fund, with a strong consortium composed by

- grid operators,
- energy planners,
- mobility planners
- and architects, but also the municipality of Korneuburg.



Korneuburgs Way2Smart” -Goals

Rehabilitation of two municipality-owned **residential buildings**
creation of a mobility hub in the area of the rehabilitated objects and
thus create alternatives to the use of private cars.

As accompanying measures,

(i) **communications programmes** are to reconcile measures and needs of existing and new tenants on a level-playing field with experts.

(ii) Tenants and other citizens will be informed of and mobilised for the objective of the energy-self-sufficiency of Korneuburg.

(iii) Property developers are involved in the process which is **monitored by social scientists**



CONCLUSION

- Integration of smart cities into Bachelor degree programs
- An independent smart cities oriented Master's program starts in September 2016
- The demonstration project “Korneuburgs Way2Smart” as a exemplary of the two buildings offer housing for young people
- Motivated existing and new tenants, enhanced local traffic, documented progress towards achieving the Korneuburg 2036 Vision statement and master plan

THANK YOU FOR YOUR ATTENTION

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