



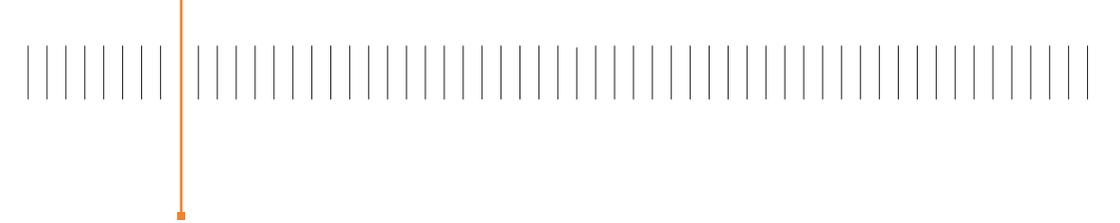
# Urban Systems

Main Research Area "Urban Systems"

**The Masters Programmes**

Sustainable Urban Technologies

Urban Culture, Society, and Space



Do you want to understand complex connections in urban systems from both an academic and a practical point of view?

Do you want to develop sustainable solutions for cities in interdisciplinary teams?

Do you want to take a leading role in large-scale integrated urban development projects?

The new Masters programmes (as part of the Main Research Area “Urban Systems”) at the University of Duisburg-Essen prepare you for working in these and other fields related to urban issues.

All the essentials about the “Sustainable Urban Technologies” and “Urban Culture, Society and Space” Masters programmes are covered in this brochure.

## Main Idea

The complexity of urban systems can only be adequately grasped by employing interdisciplinary approaches, and key urban problems can no longer be developed in separate academic disciplines alone. This interdisciplinarity is currently mirrored in 'real-world' praxis, which demands the cooperation of the humanities, social sciences, natural sciences and engineering. Up to now, institutions of higher education have been very hesitant to react to such praxis-oriented developments: before the establishment of our pro-grammes there were no such academic programmes in Urban Studies in Germany that allowed students to combine courses from the areas of technology and the natural sciences with courses in the humanities and social sciences. Further, there had also been no opportunities for students to practically apply urban design in the context of advanced academic urban studies.

Bearing in mind this need for interdisciplinary courses in urban systems, we developed the two closely linked Masters Programmes "[Sustainable Urban Technologies](#)" and "[Urban Culture, Society, and Space](#)" as part of the Main Research Area "**Urban Systems**". Students in these programmes will acquire competencies from diverse academic disciplines central to understanding and sustainably designing urban systems. Above all, students will acquire knowledge of various disciplinary codes; this is of key importance to interdisciplinary collaborations in research and professional contexts.

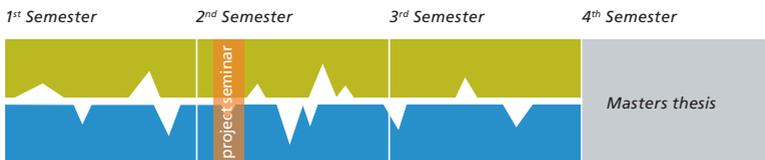


## Basics of the Courses

Both Masters courses are modularly structured and include disciplinary introductory, intermediate and advanced-level modules: the focus in the “Sustainable Urban Technologies” course is on engineering and natural sciences; the focus in the “Urban Culture, Society and Space” course is on the social sciences and humanities.

Both programmes also overlap considerably in terms of interdisciplinary approaches and content. These overlaps are primarily placed in the Integrative Modules and the Complementary Modules in the first and second semesters of study as well as in the Practical Project in the third semester. In particular, the Complementary Modules and the Practical Project both impart special knowledge of the subject areas focused on in the parallel programmes (see pages 10&11).

The fourth semester is devoted to writing a Master’s thesis; the thesis is of crucial importance to the entire course of studies, as it demonstrates a student’s ability to productively address central urban issues while applying academic/scientific expertise with a clear view towards creating interdisciplinary connections and links to other areas related to urban systems.





## Qualification Goals

- The ability to take on high levels of responsibility and work productively on complex urban projects
- The ability to analyze, assess, communicate and solve complex urban problems
- Interdisciplinary competencies, i.e. the ability to acquire, understand and use various terminologies/codes of particular disciplines
- Organization of cross-sectional communication with authorities and companies
- Moderation of communication and decision-making processes in formal and informal planning projects
- The ability to consult individuals, businesses, corporate bodies, etc. on urban projects
- The ability to explore complex urban problems with a focus on either engineering and natural sciences or from the perspective of the humanities, social and educational sciences
- The ability to engage in interdisciplinary cooperation in research and professional projects related to urban issues

## Target Competencies

It is our expressed goal to enable our students to understand complex urban issues which are new to them. Working with interdisciplinary approaches, our students will be enabled to independently identify specific problems and describe and analyze them in a methodologically sound manner with the goal of developing creative solutions.

<i>Sustainable Urban Technologies</i>	<i>Urbane Culture, Society and Space</i>
Design for a mid to large-scale urban development project	Fundamentals of urban semiotics and urban hermeneutics
Identification of pollutants in bodies of water	Methods for analyzing and contextualizing cultural forms of expression
Methods of waste management	History of the city/urban spaces
Application of logistical coordination methods	Image building for cities and regions, location factors
Logistics management methods	Neighborhood management
Mechanical, chemical and biological methods of analysis	Moderation and mediation techniques (for urban planning processes)
Techniques for developing urban infrastructure and transport concepts	Methodologies of quantitative and qualitative studies, use of statistical methods, use of SPSS
Processes of spatial mapping and layout	Intercultural competencies

## Professional Fields

<i>Sustainable Urban Technologies</i>	<i>Urbane Culture, Society and Space</i>
Strategic city planning and development (including: zoning and master planning, as well as specific topics like integrated energy concepts, integrated concepts for using waste water, etc.)	Strategic city planning and development (including: zoning and master planning, as well as specific topics like development clusters, creative milieus, etc.)
Restoring, maintaining, and modifying urban infrastructure and transport systems	Moderating and mediating formal and informal participatory processes in urban development
Developing and managing large-scale urban projects (i.e. converting old industrial sites for a variety of new uses, e-city development)	City marketing, city promotion and cultural management (image building and increasing soft location factors, management of large-scale events)
Urban research	Urban consulting



## Praxis-Oriented Project and Seminar

The praxis-oriented project is a key component of the Masters programme. In the second semester of the programme, students attend the project seminar (Module 4), in which they work on an interdisciplinary project on a topic central to urban research and practical concerns (e.g. "Healthy City"): in groups of three to five, students will work together to develop approaches and potential solutions to urban problems.

During their course of studies, students complete an internship of at least three months (Module 7) to prepare them for future professional work. The internship project presents students the opportunity to gain practical experience in transdisciplinary project work while also enabling them to reflect on 'real world' praxis from an academic/scientific perspective through work on exemplary large-scale urban projects (urban development, design, and restructuring, city planning, city management, infrastructure projects, city administration, urban research, etc.).



## Professional Support in the Search for Internships

Students will receive intensive guidance in looking for appropriate internships. This guidance will be provided by the Centre for Water and Environmental Research (ZWU) and the Centre for Logistics and Traffic (ZLV) (both part of the Main Research Area "Urban Systems"), which have long-standing contacts to companies and authorities.

### Information:

#### *Prerequisites for Admission*

*The primary prerequisite for enrolment is a Bachelors Degree in a relevant field (i.e. in the natural sciences, engineering or planning or social sciences, education, the humanities or geography). In addition, applicants are required to certify their English language skills and take part in an oral aptitude test with the examining committee. For further information, consult: <http://www.uni-due.de/urbane-systeme/>.*

#### *Applying for the Aptitude Test*

*Aptitude tests and admissions for the programmes are always prior to the winter semester. Your application (with all required documents) and registration form for the aptitude test should be sent to the contact persons listed on the final page of this brochure.*

# Modular Constructions

## Masters Programme Sustainable Urban Technologies

Sem.	WS/SS	Module	CP <sup>1</sup>	CH <sup>2</sup>	Description
1.	WS	1	15	8	Module 1: Integrative Module I - Introduction to Urban Systems
			3	2	1.1: Key Issues in Urban Systems (lecture)
			4	2	1.2: Introduction: Sustainable Urban Technologies (lecture/seminar)
			4	2	1.3: Introduction: Urban Culture, Society and Space (lecture/seminar)
			4	2	1.4: Introduction: First Steps into Urban Planning (lecture/seminar)
	2+3	10+5	4+2	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <b>Modul 2.A.: Introductory Module - Sustainable Urban Technologies</b> (students have to choose 2 from various courses on offer)                 </div> <div style="width: 45%;"> <b>3A: Interdisciplinary Complementary Module - Urban Culture, Society and Space I</b> </div> </div>	
2.	SS	4	10	4	Module 4: Integrative Module II - „Healthy City“ <i>practically oriented seminar</i>
		5+6	15+5	6+2	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <b>Module 5A: Intermediate Module - Sustainable Urban Technologies</b> (students have to choose 3 from various courses on offer)                 </div> <div style="width: 45%;"> <b>Module 6A: Interdisciplinary Complementary Module - Urban Culture, Society and Space II</b> </div> </div>
3.	WS	7	20		Module 7: Internship Project ( <i>external, three months</i> )
		8	10	4	<b>Module 8A: Advanced Module - Sustainable Urban Technologies</b> (students have to choose 2 from various courses on offer)
4.	SS	9	25		Modul 9: Master Thesis <i>Oral Examination</i>
			5		
Σ Disciplinary (without MA Thesis/Colloq.)			35	14	<b>Notes</b> <ol style="list-style-type: none"> <li>CP: ECTS credit points</li> <li>CH: Credit Hours: Taught hours per week</li> <li>Interdisciplinary Complementary Modules: These will be specially offered courses from the “other” masters programme</li> <li>Introductory Modules, Intermediate Modules, Advanced Modules: There will be individual specialisation classes on offer to choose from (5 CP each), so students can build up individual profiles of expertise.</li> </ol>
Σ Integration			25	12	
Σ Complementary			10	4	
Masters Thesis + Oral Examination			30		
Practical Project/Internship (Module 7)			20		
Σ			120	30	

## Masters Programme **Urban Culture, Society and Space**

Sem.	WS/SS	Module	CP <sup>1</sup>	CH <sup>2</sup>	Description
1.	WS	1	15	8	Module 1: Integrative Module I - "Introduction to Urban Systems"
			3	2	1.1: Key Issues in Urban Systems (lecture)
			4	2	1.2: Introduction: Sustainable Urban Technologies (lecture/seminar)
			4	2	1.3: Introduction: Urban Culture, Society and Space (lecture/seminar)
			4	2	1.4: Introduction: First Steps into Urban Planning (lecture/seminar)
		2+3	10+5	4+2	Module 2B: Introductory Module - Urban Culture, Society and Space (students have to choose 2 from various courses on offer)
2.	SS	4	10	4	Module 4: Integrative Module II - "Healthy City" <i>practically oriented seminar</i>
		5+6	15+5	6+2	Module 5B: Intermediate Module - Urban Culture, Society and Space (students have to choose 3 from various courses on offer)
3.	WS	7	20		Module 7: Internship Project ( <i>external, three months</i> )
		8	10	4	Module 8B: Advanced Module - Urban Culture, Society and Space (students have to choose 2 from various courses on offer)
4.	SS	9	25		Modul 9: Master Thesis <i>Oral Examination</i>
			5		
Σ Disciplinary (without MA Thesis/Colloq.)			35	14	
Σ Integration			25	12	
Σ Complementary			10	4	
Masters Thesis + Oral Examination			30		
Practical Project/Internship (Module 7)			20		
Σ			120	30	

<b>Notes</b>
1. CP: ECTS credit points
2. CH: Credit Hours: Taught hours per week
3. Interdisciplinary Complementary Modules: These will be specially offered courses from the "other" masters programme
4. Introductory Modules, Intermediate Modules, Advanced Modules: There will be individual specialisation classes on offer to choose from (5 CP each), so students can build up individual profiles of expertise.

## Contact

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