

Information for applicants for the W1  
Junior Professorship  
without Tenure Track

**„ Building Information Modelling “**

in the Department „Civil Engineering“ of the  
Faculty of Engineering

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## I. UNIVERSITY DUISBURG-ESSEN

The University of Duisburg-Essen is located in a region boasting the highest concentration of universities in Europe. Almost 42,000 students are enrolled here and, with a total 3,640 academic and non-academic staff members, the university clearly occupies an important position among the employers in the region. Established on 1 January 2003, the result of the merger between two previously independent institutions – the University of Duisburg and the University of Essen (both of which were first founded in 1972) – the University of Duisburg-Essen is the youngest university in North Rhine-Westphalia.

This new twin-campus university in the center of the Rhine-Ruhr region has made good use of opportunities given to strengthen and showcase its research and teaching potential, a potential recognized well beyond the borders of the region. Offering a broad range of subjects, the University of Duisburg-Essen has already notched up a good name for itself in fields as disparate as social sciences, economics, the humanities, design, engineering and natural sciences, including medicine. Students from 130 nations come here to pursue their studies.

Students can graduate on the basis of the traditional degree structure in education and medicine. Or they can obtain a new Bachelor's or Master's degree in a growing number of disciplines. A high priority is given to expanding these consecutive – often interdisciplinary – courses since they meet international standards and attract students from far and near. Furthermore, the University offers working professionals ("mature students") a number of attractive courses which, thanks to the modern integrated e-learning methods on offer, are geared to the learning speed of the individual student.

In many disciplines the University Duisburg-Essen belongs to the Top 10 of the most successful research universities in Germany. External funding was doubled within the last five years.

The University has five main research areas:

- nanosciences
- genetic medicine and medical biotechnology
- urban systems, logistics and transport, and
- empirical education research
- transformation of contemporary societies.

During its founding phase, the University's innovative management also attracted a large amount of attention mainly because of the broad-based project approach taken to quality development. All the faculties and central institutions of the University have their products, services and processes regularly reviewed by the University's own Center for University and Quality Development.

Further Information:

[https://www.uni-due.de/imperia/md/content/dokumente/ppt/ppt\\_praesentation\\_ude\\_en.pdf](https://www.uni-due.de/imperia/md/content/dokumente/ppt/ppt_praesentation_ude_en.pdf)



## II. THE FACULTY OF ENGINEERING

The Faculty of Engineering Sciences of the University of Duisburg-Essen, offers - in addition to the classical fields of Mechanical, Electrical and Electronics, Information Technology and Applied Cognitive Sciences, Material Sciences, Technical Teaching, and Civil Engineering - a nationwide uniquely integrated spectrum of interdisciplinary engineering options that meet each and every demand of the modern and innovative education and research.

With approximately 5.500 students, a third of whom are from the international scene, the faculty is a strong and respected partner for the industries in the region and beyond. Graduates from our programs enjoy a high reputation as a result of the broad technical know-how as well as the uniquely interdisciplinary and internationally oriented structure of the programs. Classical courses such as Mechanical, Electrical, Material Sciences, Civil, and Applied Information Technology, rub shoulders with modern disciplines like Nanotechnology, Applied Cognitive and Media Science, Media Technology and Economic Engineering. In addition, social competency is strongly developed due to team work and interaction with the international students. Of particular note is the integrated international Bachelor/Masters Programs offered under the name "International Studies in Engineering (ISE)", where 50% of the courses are in English. These courses are, as a result of our global standards and versatility, are not only sought after by the international students but also by many Germans enrolling at the university.

In the area of research, the department has an established investment of 60 million EUR for equipment and infrastructure, to develop the latest technologies and to continue with fundamental research. With three DFG special research areas and a DFG graduate program in the areas of Nanotechnology and Materials, the University is a frontrunner in this field in Germany as well as internationally. But also the fields of

- Mechatronics and Automation,
- Biomechanics,
- Ship Technology
- Microsystems and Medical Technology,
- Information Technology and Media,
- Energy and Environmental Studies
- Production and Material Technology
- Automotive Engineering

are core areas of research. The department has achieved a high international reputation, which is evident from the numerous research projects currently being worked on.

By focusing on these areas, the faculty has achieved a high international reputation, which is reflected in numerous research projects. In addition, the five affiliated institutes

- "Institute for Energy and Environmental Technology (IUTA)"
- "The fuel cell research center ZBT GmbH (ZBT),"
- "Institute of Mobile and Satellite Radio Technology (IMST)"
- "IWW Water Centre"
- "Development Centre for Ship Technology and Transport Systems (DST, formerly VDB)"
- and the "Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)",

working closely with the faculty and implement a research budget of over 35 million euro each year. Due to all the projects that have been completed with the industry and other research institutes, the department and the affiliated institutes have now earned a reputation as an excellent partner for complex technological solutions as well as an ideal recruiting ground for top graduates.

### III. Department of Civil Engineering

The Department of Civil Engineering has their teaching and research profile continuously developed and adapted to the constantly changing requirements. The subject areas of the department cover the whole range of constructions science aspects. This starts with basic research sciences like engineering mathematics, mechanics and computational mechanics on geotechnical engineering, structural engineering and materials science, up to application-oriented sciences such as massive construction, metal and lightweight construction and building operations and construction management. With issues of infrastructure, especially in conurbations deal the subject areas of hydraulic engineering, water and waste management, urban planning and construction as well as road construction and transport. The focus of research activities are new, intelligent materials and building systems, energy optimization, urban development, supply and technical issues and further topics. It is cooperated closely with leading companies in the construction industry, commercial enterprises and regional authorities.

The study of civil engineering in the Department of Civil Engineering of the Faculty of Engineering is based on internationally accredited Bachelor of Science and Master of Science degree programs and stands for modularization, internationalization as well as for integrating economics content in the basic studies. The seven semester Bachelor programme of Civil Engineering is based on four optional specializations in the three semester Master of Science degree program: Structural Engineering, Construction Management and Infrastructure Systems, Material Science and Applied Mechanics and Computational Mechanics. In addition to the present study programme of civil engineering it is offered the Bachelor of Science and Master of Science degree programs Industrial Engineering with the focus construction. The plan is an international Master of Science degree program which is called "Membranbau".

The Department of Civil Engineering is involved with services in the education for teacher post and building technology. Furthermore, the Department of Civil Engineering within the Faculty of Engineering is involved in the Master of Science degree programs Systems Engineering, Public Transport Management, Transnational Ecosystem-based Water Management, Water Science and Management and Technology of Water and Wastewater.

In the course of the international teaching exist partnerships in double degree programs with universities in Japan, Malaysia and Indonesia.

By including industry representatives of major German companies in the Ruhr region in the "Advisory Council of Civil Engineering" the connection of the university operation in teaching and research is guaranteed to meet the needs of the labour market.

The teaching and research areas of the Department of Civil Engineering are manifold, whereby the third-party funded research plays an important role.

## **IV. REQUIREMENTS FOR THE POSITION “BUILDING INFORMATION MODELING”**

### **1. Research**

In the Department of Civil Engineering, in the faculty of engineering exist in the study programme of civil engineering 12 institutes. The person who fills the position will be responsible for research and teaching in the field of Building Information Modeling.

Future points of the task field within the methods of BIM are:

- create the digitization of the entire project value based on existing software solutions
- development of BIM methodology in project management
- management of information in the entire value from the idea, planning, design and engineering, construction and operation of construction and infrastructure buildings and facilities to the dismantling
- modelling, simulation and optimization of project and production processes
- development of virtual reality and augmented reality applications

It is expected that the treatment of theoretical and application-oriented topics as well as the cooperation with companies and / or other institutions. An internationally visible research activity at a high level is desirable.

The person who fills the position must prove the ability of interdisciplinary research, particularly with engineering disciplines.

The willingness to represent the subject area on a regional and national level to the outside, as well as the acquisition of external funding is expected. Corresponding non-university work experiences are also provided, such as experience in leadership.

### **2. Teaching**

The junior professor will be expected to teach in the accredited bachelor and master study of civil engineering.

The person who fills the position is also expected that he / she uses new media in the lectures and updated regularly the teaching methods. This includes the willingness to teach in English and to participate in didactic further qualifications.

Desirable are applications from professionals with high scientific qualification and didactic aptitude, which can meet these requirements.

### **3. Further requirements**

Provided are a research focus in the field of digitization of project processes throughout the entire life cycle in the building. Provided are a research focus in the field of digitization the project processes through the whole life cycle in the

building. In addition, there are in a holistic approach the disciplines of architecture, civil engineering, electrical and engineering integrated as part of the method BIM.

#### **4. Relevance of the Professional Activities and Time Involved**

The teaching load is 4 hours per semester week of 45 minutes in the first working phase and 5 hours in the second working phase.

Participation in university autonomy and the independent third-party funds are required.

### **V. STAFFING AND FACILITIES**

Details shall be agreed in the course of the appeal and agreed.

### **VI. LEGAL FRAMEWORK**

The Law on the Higher Education in North Rhine-Westphalia (Higher Education Act - HG) from 16.09.2014, the university system has been fundamentally reshaped from 1.10.2014.

The universities are defined by the state supported, unincorporated public bodies. State funding is based on their duties, the agreed objectives and the services provided. They have a global budget and are not subject to transfer relationship with the Ministry of Innovation, Science, Research and Technology of North Rhine-Westphalia.

#### Legal status of the high school teachers and university teachers

Professors are employed by the statutory requirements, basically public officers for life. Professors can also be employed on a contract under private law.

Junior professors are appointed for a period of three years to public offer in time. The public officer status of junior professor is to be extended with his or her consent during the third year for another three years if he or she has proved to be a university professor. Otherwise, the public officer can be extended with the consent of the junior professor by up to one year. During the sixth year the public officer of a junior professor can be extended with his or her consent by one year if he or she has proved to be a university professor. Junior professors are also engaged in a contract under private law.

For further information, (laws, directives etc.), please visit [https://www.uni-due.de/verwaltung/organisation/peo\\_professoren.php](https://www.uni-due.de/verwaltung/organisation/peo_professoren.php) (in German)



## VII. SALARY

On 1 January 2005, the C-grade for professors was replaced for all newly appointed professors by a performance-oriented remuneration. It is part of the service law reform. The formerly standard seniority grades in the salary scale W (W for 'science') replaced by a system of basic salaries (W2, W3) plus "performance bonuses". The W salary scale shall apply from 1 January 2005 for all newly appointed professors and those who transfer to the W salary.

The current pay tables for grades W1, W2 and W3, see <http://www.lbv.nrw.de/beztab/beso.php> (in German).

In addition, performance-related salary components, so-called performance bonuses. You can on the occasion of appointment and tenure negotiations (appointment and tenure bonuses), for outstanding achievements in research, teaching, art, training and professional development (special performance bonuses) and for the performance of functions or specific tasks within the university self-management or the university management (functional performance bonuses) will be awarded. For third-party funds, research and teaching allowances may be paid in certain circumstances.

Temporary performance bonuses are subject to the conclusion of target and performance agreements within the framework of appointment and tenure negotiations.

In the framework of appointment negotiations, any appointment-related performance bonuses are negotiated individually with the Rector of the University of Duisburg-Essen.

Information and legal bases the W salary scale available on the Internet at the following address: <http://www.hochschulverband.de/cms/index.php?id=296> (in German)