Studying in REMAGEN (Koblenz University of Applied Sciences)

Measurement Engineering and Sensor Technology

The challenge: Measurement Engineering and Sensor Technology

Demanding quality requirements call for advanced measuring and sensor technology. For any application, measuring systems bridge the gap between the existing physical characteristics and process control or process monitoring, both of which are usually digital. An important facet is the acquisition of the measured signal in the existing technical environment. The principles employed today range from thermal expansion to image processing and LASER technology. Consequently, there is an increasing demand for engineers with a strong foundation in physics, computer sciences and electrical engineering as well as a high level of expertise in measurement technologies with a detailed knowledge of applications and procedures in industry and science. Their main task is to bridge the gap between the physical parameters of the process and the electronic control systems, which necessitates an understanding of the process needs and the means of turning them into measurement solutions. Furthermore, new innovative applications of technical equipment and new business opportunities have to be identified.

Career Opportunities:

- Research and development (in industry and science)
- Manufacturing and quality control
- Marketing and Sales departments
- Teaching, training, education as well as skills development
- Self-employment
- Supervision of compliance with guidelines for the operation of measurement equipment
- Software engineering
- Project leadership in technical divisions

Topics of study:

During the **basic phase of the course** students are introduced to the basics of physics, mathematics and chemistry as well as to skills in technical subjects such as computer science, electrical and measurement engineering, electronics, technical mechanics, material science, law and economics.

In the **main part of the course** this knowledge is extended by lessons on an interdisciplinary basis. An overview of measurement and sensor applications in general prepares the students for their practical projects in close collaboration with either industrial companies or a university research department in Germany or abroad. In this working environment students have the opportunity to identify their personal areas of interest and to establish contact with possible future employers.

In the 5th and 6th semesters the lectures are organized in modules, each of which focuses on a specific field of measurement engineering and sensor technology. The theoretical knowledge is applied in extended practical exercises focusing on **material science and sensor principles, measurement electronics, imaging systems, optical measurement systems, measurement for quality control and analysis and signal computing.** These practical courses benefit from the industrial research and development projects at the Laboratory for Sensor Technology and Optical Measurement located on the campus. The equipment in the laboratory is available for education as well as for research projects.

Admission requirements:

The qualification necessary for admission is an advanced technical college certificate or a general qualification for university entrance. Application for registration for the summer or the winter semester is possible.

Final degree: Bachelor of Science

Duration of study:

Three semesters of basic studies and three semesters for the main study phase (including the practical project and the bachelor thesis).

Contact:

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