



“At present, high software quality at reasonable costs is clearly a necessary precondition for business success. Thus, software quality assurance is an important topic within this masters program.”

Prof. Dr. Peter Liggesmeyer, University of Kaiserslautern



MASTER SOFTWARE ENGINEERING FOR EMBEDDED SYSTEMS

Part Time Course
of Study

Target Group

The distance education program is designed for professionals working in the field of software development who need to acquire advanced know-ledge of emerging technologies and who wish to broaden their software engineering skills by pursuing graduate-level education in software engineering for embedded systems.

The program targets three kinds of graduates with a special emphasis on the first one: graduates of engineering disciplines such as electrical, mechanical, or industrial engineering; graduates of IT disciplines such as computer science; and graduates of non-engineering disciplines such as mathematics, physics, etc.

Accreditation

The distance learning course is accredited by ASIIN.



www.academy.fraunhofer.de

Duration and Costs

- The course fee for the entire course is €12,000. This covers all course-related costs (course contents, participation in online phases, on-campus events, etc.). This fee does not cover the cost of travel and accommodation or the university registration fee (about €90 per semester). In addition, participants have to pay a one-time Master examination fee of €500.
- The standard course length is 2 years (based on part-time studies).

Degrees and Admission Requirements

You should have at least 2 years of work experience in software development and possess a graduate degree either in electrical engineering, mechanical engineering, computer science, physics, mathematics, or a similar discipline.

Completing the distance course entitles you to receive a Master of Science degree from the University of Kaiserslautern.

YOUR CONTACTS AT IESE

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Fraunhofer IESE in Kaiserslautern performs applied research in the areas of software development, software quality management, and software competence management. Its customers come from domains where products

are dominated by software: automotive and transportation systems, medical systems, as well as information systems and applications in the public sector.

YOUR CONTACT AT DISC

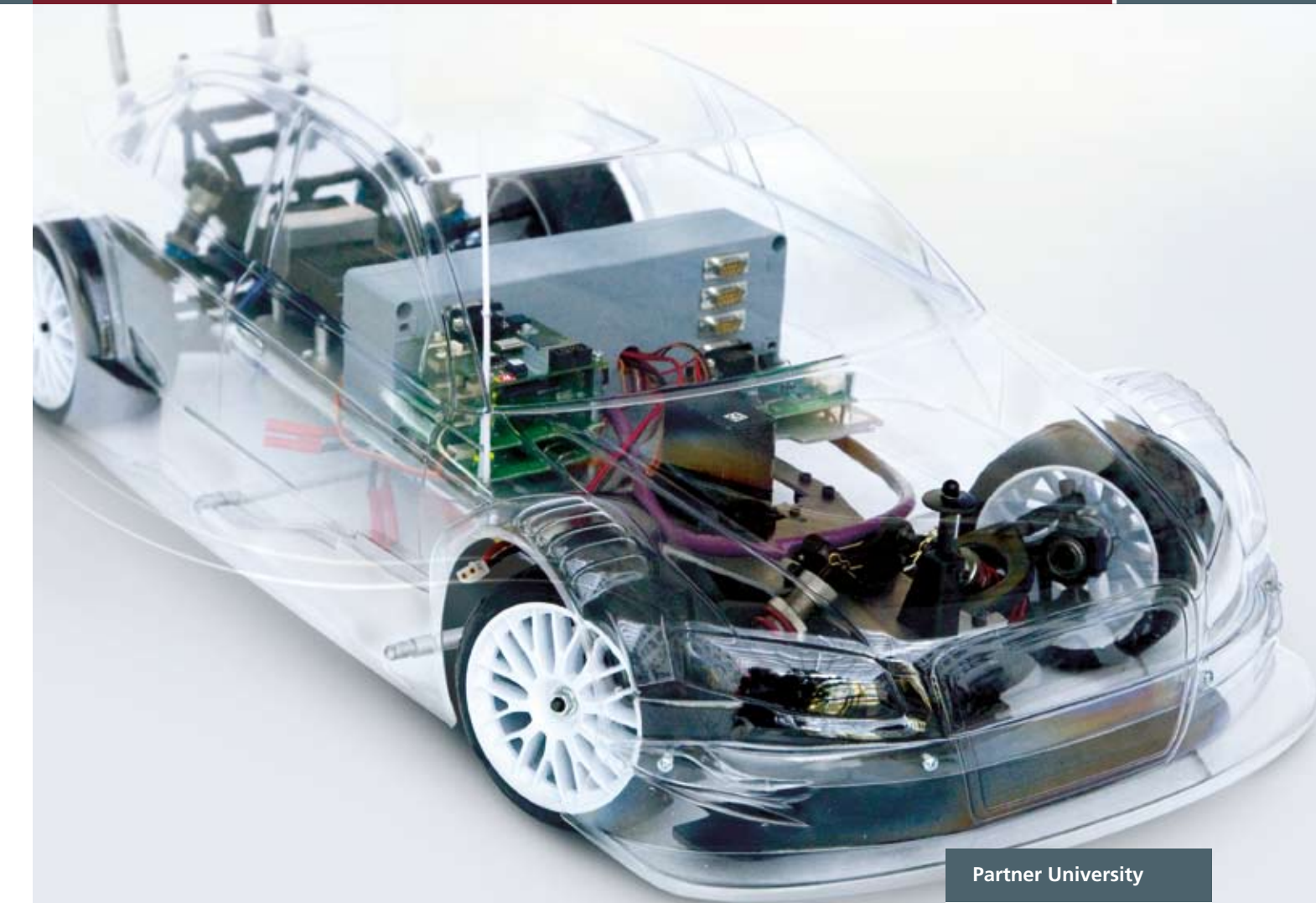
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DISC is a central scientific unit of the University of Kaiserslautern. It is the leading provider of graduate distance education in Germany. The high-quality programs are offered to a national and international audience.

YOUR CONTACT AT FRAUNHOFER ACADEMY

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Fraunhofer Academy paves the route to excellence for technology managers and specialists based on the research activity conducted by the Fraunhofer Institutes in cooperation with selected partners.



Partner University





“Engineers for embedded systems need to master mechanics, electronics, and – increasingly – software. In this course, experienced engineers will learn state-of-the-art software engineering for embedded systems.”

Prof. Dr. Dieter Rombach, Executive Director, Fraunhofer IESE



“Excellence in software engineering and technical skills are essential prerequisites for developing embedded systems. In addition to this, experience in project management is needed to make these competencies pay. This distance education program is a practical guide to project management as a whole and project management techniques in particular.”

Dr. Gerhard Pews (sd&m AG)



“Developing complex software systems requires good development skills – and a lot of experience. Spreading knowledge and experience in a software development organization is crucial for success. The material covered in this course ranges from simple, light-weight techniques for daily use to reports on company-wide initiatives for experience and knowledge management.”

Prof. Dr. Kurt Schneider (Leibniz Universität Hannover)



HIGH DEMAND FOR SOFTWARE ENGINEERING PRACTITIONERS

Today, traditionally hardware-dominated product domains are increasingly integrating software. But many of the companies and organizations in these traditional domains such as the medical devices industry or the automotive industry still employ mostly engineers without any profound education or training in software and systems engineering.

The growing complexity of secure and high-quality software in embedded systems, and the constant changes in new software engineering methods and tools pose new challenges for the industry. Engineers from the embedded systems domain have to receive additional education in software engineering and hence change their way of thinking about software development in general compared to conventional product development.

Boost your Career with a Post-Graduate Software Engineering Education

Industry has expressed an enormous demand for a high-quality, part-time opportunity for re-training the existing professional engineering work force in software engineering.

Therefore, the Fraunhofer Institute for Experimental Software Engineering (IESE) and the Distance and International Studies Center (DISC) of the University of Kaiserslautern have decided to offer a part-time, high-quality distance study program in “Software Engineering for Embedded Systems”. It provides a theoretical scientific background as well as practical methods, techniques, and tools that consider management issues on the one hand, and software development for embedded systems issues on the other hand.

Career Compatibility Allows You to Balance Job and Education

The Distance Education Program is an ideal solution for practitioners who are looking for new perspectives in their career. You can focus your studies on management and engineering topics, which will get you ready for positions such as head of research & development or project leader in industry. The innovative concept offers a number of advantages. As with traditional distance learning courses, it allows you to combine your studies with your professional and family commitments, enabling you to work on the course anywhere, and at any time. You will receive textbooks for each module and can study these wherever you want. Additionally, online phases increase communication between students and allow intensive support as preparation for the exams.

As a highlight, at the end of each semester, on-campus phase will be organized at Fraunhofer IESE. During those times, experts from industry as well as from science will provide practical insights into software engineering, and you can experience first-hand how Europe's largest research center for applied research is collaborating with its clients. A great opportunity to make new contacts in research and industry.

Become an Agent of Change!

By selecting the best available experts worldwide as authors, the high-quality learning materials reflect not only the state of the art of science, but also the software engineering requirements of industry in the embedded systems domain. The

experts are high-ranking researchers who are recognized in industry because of their profound practical experiences. This ensures that you will acquire new competencies that will help you to improve the products and processes in your organization. The course will enable you to gain a better understanding of software engineering principles and to assess and select the best technologies for your work. It will prepare your organization for future changes, challenges, and innovations that will increase your company's competitive edge.

Course Contents

Software engineering focuses on the specification of system structure and behavior, and on the implementation of these specifications; the activities required in order to assure that the specifications have been met; and the development of such systems across space (distributed development, subcontracting) and time (evolution, maintenance).

In the course, you will first engage in four fundamental course modules that will provide you with the basic knowledge in the domain of software development and project management for embedded systems. After that, you must either enroll in a more development-oriented software engineering course or in a more management-focused course. The engineering option is geared towards students who work in the technical field of software development or who intend to switch to more development-related activities. The management part is directed towards students who will manage engineering teams in the future.

