ADVANCED INFORMATION SYSTEMS FOR IE (This flyer will be updated soon)	
Offered by	Department of Industrial Engineering and Innovation Science
Language	English
Primarily interesting for	All students, but most relevant for students with background in: Major Industrial Engineering Major Applied Mathematics Major Web Science, Major Software Science
Prerequisites	Required courses: - Recommended courses: -
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Content and composition

Information systems are the primary enabler of digital transformation in business. Organizations increasingly depend on their information systems to align internal organization structures and deal with the complexity and changeability of markets. As overseeing operations becomes too complicated for humans, business requirements related to information systems are growing exponentially. Up-to-date, complete and accurate information from big data has become a necessity to survive in an increasingly competitive world. Rapid developments in information technology enable application types unimaginable a few years ago. Increasing complexity and dependence on information systems are driving significant changes across many sectors, from logistics, mobility services and hi-tech manufacturing to healthcare.

In this specialized elective package, you will get a deeper understanding of the role of business information systems in digitalization. In the Business Information Systems Management course, we will discuss the strategic importance of the effective use of these systems. We will focus on the fundamental concepts related to their acquisition, implementation and management to drive the digital transformation efforts in organizations. Performance analysis of business processes and their re-design based on simulation methods are studied in the Business Process Simulation course. After following this course, the students will have a good overview and handson experience with quantitative analysis of business problems. Healthcare Information Systems teaches students applications of Information Systems in the area of Healthcare.

Course code	Course name	Level classification
1BK20	Business Process Simulation	3.
1BK70	Business Information Systems Management	3.
1BK00	Healthcare Information Systems	1.

Course description

Business Process Simulation (1BK20)
Business Process Simulation is a tool for analyzing the performance of a business process and the impact of certain changes to these processes. Simulation is used when analytical techniques such as queuing theory or a direct experiment in practice cannot be used. A model of the business process is built and executed in a simulation tool in order to get insights in the performance indicators and bottlenecks in the process. Based on this information ideas for redesigning the process (to make it more efficient) can be generated or checked for their impact. In this course, you work in a group on a simulation project for a realistic case. You will apply a simulation methodology to arrive at recommendations for improvement and redesign of the business processes.

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elective package

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Business Information Systems Management (1BK70)

To operate in the modern business ecosystem, organizations require a range of business information systems, such as Enterprise Resources Planning (ERP), Customer Relationship Management (CRM), Business Intelligence and Performance Management, Supply Chain Management (SCM) systems. This course starts with a discussion on the way digital technologies have influenced the business landscape. It continues with the introduction of some key concepts around information systems to provide a solid understanding of business information systems management. We then focus our attention on the main types of enterprise systems, basic issues related to the selection, implementation, architecture, and use of such systems. The students also get a hands-on experience on widely-used enterprise systems.

Healthcare Information Systems (1BK00)

Health care industry is one of the most information intensive sectors in our society. Consequently, information systems that support health care operations are advancing rapidly. They improve the operational excellence as well as the management of modern health care organizations. In this course, you learn about information technology and information management functions in health care organizations as well as current health care computing issues that health service managers face.