Department of Software Engineering

invites engineers to study on MSc level in informatics
in the specialization of

INFORMATION SYSTEMS ENGINEERING

A GRADUATE'S PROFILE

A graduate from the specialization *Information Systems Engineering*:

- knows how to analyze business processes and is able to choose appropriate technological solutions;
- is prepared for development of information systems of high complexity and high quality characteristics, in accordance with identified user requirements;
- knows how to collaborate with teammates and has expertise in project management.

SPECIALIZATION COURSES

Semester 1	**Knowledge bases**	The aim of the course is to present students with issues related to the systematic and formal description of problem domains (ontologies) and techniques related to the semantic analysis of web data (Semantic Web initiative).
	Requirements Engineering	Methods and techniques of requirements elicitation, specification and analysis, principles of cooperation with stakeholders, as well as requirements management, requirements measurability and traceability.
	Software Project Management	Key themes related to the planning and organization of software projects, building an effective team, its management, communication with stakeholders, scheduling and estimating the projects.
	Software Usability	A modern approach to software quality encompasses the concepts of usability and user experience. This course explores the methods and principles of usability assessment from cognitive, behavioral, and affective perspectives.
	Safety Critical Systems	Safety of humans and of natural environment is a paramount requirement related to application of systems and technologies. This module presents methods and techniques of safety risk analysis and principles of safety engineering of software intensive systems. It also covers issues of safety analysis and demonstration (safety cases).
	Business Data Processing	Wherever data are present, the information and knowledge is also be important. This course shows how to transform data into business knowledge by adapting high-quality data management, processing and analysis.
Semester 2	**Quality and Testing Engineering**	The aim of the course is to introduce quality engineering and testing according to TMAP BOK (Body of Knowledge).
	IT Product Management	Practical product manager's skills learnt in a series of workshops: design thinking, business models of products and services, business idea and product presentation, market and sells analysis.
	Information Systems Evolution Management	Information system development and evolution management including business process, organization and technology change management. Management of IT Services Level Agreements.
	Software Usability Lab	Course introduces practical aspects of Software Usability and User eXperience issues, such as eye-tracking, behavioral observations, emotion recognition and accessibility.
	Information Security Management	Security of information assets is a prerequisite for achieving business goals of companies and organizations. It is also important for ensuring privacy of citizens and consumers. This module presents methods and techniques of security requirements identification and analysis and their use to provide an adequate security protection system.
Semester 3	**Strategies for Information Systems**	Course focuses on customer's perspective on IT – software/hardware acquisition, managing IT infrastructure, cost/benefit analysis of IT projects, defining strategies and principles for effective IT resources.

EDUCATIONAL METHODS AND TOOLS

- We pay attention to all components of competence: knowledge, skills, and social attitudes
- We introduce workshops and case studies instead of traditional teaching classes
- We teach by problems solving rather than memorizing
- We provide all necessary educational materials and aids
- We use the Moodle educational platform (https://enauczanie.pg.edu.pl/)
- We involve IT industry and business experts into educational process

INDIVIDUAL DEVELOPMENT OPPORTUNITIES

- Participation in national and international research projects
- Flexible choice of courses with Individual Study Program
- A wide range of topics of MSc projects, including those proposed by students

EXAMPLES OF MASTER'S THESIS TOPICS

- Assessing the impact of business analysis on the quality of the implemented system
- Scrum Master competency model in the Scrum methodology
- Implementing full-text search in a multi-search engine
- Managing functional testing to ensure requirements traceability
- Managing requirements using requirements patterns
- Applying creative methods in software engineering
- Participant observation of programmers' emotional states
- Development of an educational application for children with autism
- Emotion monitor in human-computer interaction

MORE INFO

- https://eti.pg.edu.pl/en/kiop-en/didactics-dse/candidates/specialization-information-systems-engineering
- Information board on the 6th floor of EA, next to the staircase