



Study programme

Major: Systems Engineering (Cloud and DevOps)

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Postgraduate study programme

Basic information

Faculty name:	Faculty of Computer Science, Electronics and Telecommunications
Major name:	Systems Engineering (Cloud and DevOps)
Level:	postgraduate
Number of ECTS credits necessary to complete studies at a given level:	31
Cycle start date:	2022/2023, winter semester
Duration of studies (number of semesters):	2

Recruitment conditions, including admission requirements

In order to enroll into programs:

BS/MS diploma in engineering, IT, mathematics, or physics

Students must pass English test to confirm the required level B2

Students must undergo the technical test and interview

3+ YEARS of experience in IT

Working with one of programming languages Java, JavaScript, .NET, Python

Nice to have:

Soft Skills: Leadership, Efficient Business, Customer focused Communication, etc.

Limit of admission to postgraduate studies along with an indication of the minimum number of people admitted, conditioning the launch of the edition of postgraduate studies

25 people (minimum 12)

Required documents and place of their submission

- application form;
- a copy of the university diploma certified by the University;
- confirmation of payment of the registration fee in the amount of PLN 500;
- confirmation of payment of the fee for postgraduate studies for the first semester of studies, not later than within 14 days before starting the postgraduate studies

Address for submitting documents:

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General goals of education within postgraduate studies

DevOps is a highly demanded business capability that seeks to optimize business operations (versus the sole IT operations). The Goal of DevOps practices is to remove the gap between Devs and Ops and introduce an iterative and continuous approach to change integration and delivery. The program aims to get students familiar with latest DevOps and Cloud tools, frameworks and approaches and to prepare students for joining real projects and teams as a Cloud and DevOps engineer. The Systems Engineering course is designed to provide students with the basic necessary knowledge and skills related to Cloud Service, as well as the most typical flows and best practices of its tools and capabilities usage. It is aimed at

employees of all specializations who work on projects that plan to or already use Cloud. The training increases expertise, provides answers to the most frequently asked questions, clarifies the most frequent misunderstandings, and encourage Cloud usage.

The study program includes 122 hours of theoretical and practical didactic classes: 101 hours of webinars and workshops and 21 hours of individual mentoring with leading industry experts.

Postgraduate studies graduate profile

The graduate will be a person who knows modern IT related engineering best practices and has grounded skills in DevOps methodology, version control systems, networking, cloud computing, CI/CD tools, IaC tools and ready to take part in complicated production projects.

Rules for completing postgraduate studies, including the rules of participation in classes, rules for controlling classes and rules for taking exams, rules for crediting and registering for the next semester

The program is designed to be practical and flexible. Contact hours, that include webinars, workshops and individual mentoring with leading industry experts, are held in a time convenient for the working students - on the working days in the evening or on Saturdays. Theoretical materials are presented on a digital platform. The online content includes text, videos, infographics, and interactive activities.

There are several types of knowledge check: quizzes, practical tasks and final tests. To succeed in the program students have to pass all the quizzes and complete the practical tasks in due time. At the end of the course students have to take final testing. As well, students have to complete the project based practice and present the results of the work in a form of demo.

All learning processes of the program take place online, meaning that students do not have to attend any classes on campus or in a physical location. Attendance of the online events does not affect students' grades; however, students are strongly recommended to attend all online events.

The duration rules and form of internships, including in particular the conditions for their implementation, the internship control system and their control (if required)

The purpose of the project based practice (internship) is to familiarize students with the real industry standards of IT projects based on practical participation in the activities with the industrial partner, the formation of the ability to apply gained theoretical knowledge in professional activities, and the expansion of practical skills for independent work. The result of the practice under the postgraduate program will be gaining the production experience and the preparation of project portfolio.

The duration of the practice is 12 weeks. The Project based practice includes three main stages: introduction stage, experimental stage, and final stage (demo).

In the scope of the internship, students will participate in real or pet projects (5 students in a project team) matching with real production projects. Participants will bear different project roles and have an opportunity to see how these roles interact and work together. Students' workload will be spread between synchronous teamwork, mentoring sessions, and self-study.

Conditions for completing postgraduate studies and obtaining a certificate of completion of postgraduate studies, including the conditions and requirements related to the preparation of final papers and the implementation of the diploma process, as well as related to the organization and course of the final exam (its scope, mode and manner of its conduct, rules for determining the exam grade) final, guidelines for its course), if required, the rules for determining the final result of their completion

The Program is considered successfully completed if the student gains the average score no less than 70% for all modules included into the program.

In this case, a Final Certificate is awarded to the student at the end of the program.

Here are the course graded activities:

During the course students must perform practical tasks and submit their results according to the deadline set in the Learn Digital Platform. Each practical task is graded. The maximum score for practical task is 100 points.

During the course students must pass intermediate graded quizzes. Each quiz can bring 1 point to the student.

In the end, the course also includes a graded final assessment. The maximum score for the assessment is 100 points.

The points gained by a student for practical tasks, quizzes, and final assessment through the course sum up into the resulting score. The maximum possible score is equivalent to 100%.

Learning outcomes

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Knowledge

KEU symbol	Directional learning outcomes	CEU symbol
SESP_W01	Student knows the Agile principles, formulas, and different operating models	P6S_WG
SESP_W02	Student knows the main rules and principles of keeping code clean	P6S_WG
SESP_W03	Student knows the main principles of clean design and has a clear understanding of clean architecture, different layers within it, boundaries between these layers and benefits and drawbacks of this concept	P6S_WG
SESP_W04	Student knows how to apply engineering principles to visualize, analyze and design the development process	P6S_WG
SESP_W05	Student knows and understands DevOps methodology and its KPIs	P6S_WG
SESP_W06	Student knows modern VCSs (and Git as one of the most popular ones)	P6S_WG
SESP_W07	Student knows how to manage and administrate Windows and Linux operating systems	P6S_WG
SESP_W08	Student knows the basics of Python for DevOps	P6S_WG
SESP_W09	Student has a grounded knowledge of networking concepts and approaches	P6S_WG
SESP_W10	Student has a deep knowledge of cloud-based solutions and knows how to use it to scale the businesses and to reduce operating costs	P6S_WG
SESP_W11	Student has a deep knowledge of virtualization services, storage and database services available in Microsoft Azure	P6S_WG
SESP_W12	Student has a deep knowledge of virtualization services , storage and database services available in Amazon Web Services	P6S_WG

Skills

KEU symbol	Directional learning outcomes	CEU symbol
SESP_U01	Student has needed skills, empathy, and motivation to lead effective teams	P6S_UO
SESP_U02	Student is able to use and apply the Agile principles, formulas, and different operating models in his practice	P6S_UW
SESP_U03	Student is able to use in practice main rules and principles for keeping the code clean	P6S_UW
SESP_U04	Student is able to use and apply the clean design approach in practice	P6S_UW
SESP_U05	Student is able to apply engineering principles to visualize, analyze and design the development process	P6S_UW
SESP_U06	Student is able to keep the development lifecycle in an efficient manner	P6S_UW
SESP_U07	Student is able to use modern VCSs (and Git as one of the most popular ones) in practice	P6S_UW
SESP_U08	Student is able to manage and to administrate Windows and Linux operating systems	P6S_UW
SESP_U09	Student is able to use Python for DevOps	P6S_UW
SESP_U10	Student is able to use CI/CD tool effectively and knows how to automate the process and ensure quality and safety for continuous compliance	P6S_UW

KEU symbol	Directional learning outcomes	CEU symbol
SESP_U11	Student is able to use virtualization services , storage and database services available in Microsoft Azure	P6S_UW
SESP_U12	Student is able to use virtualization services , storage and database services available in Amazon Web Services	P6S_UW
SESP_U13	Student knows how to use IaC tools like Terraform and Ansible	P6S_UW
SESP_U14	Student is able to use modern DevOps tools integrated into enterprise delivery platform	P6S_UW

Social competence

KEU symbol	Directional learning outcomes	CEU symbol
SESP_K01	Continuous expansion of their knowledge and skills in the field of Cloud and DevOps	P6S_KK
SESP_K02	Critical assessment of own knowledge and new solutions and techniques in the field of Cloud and DevOps	P6S_KK
SESP_K03	Use the acquired knowledge to achieve important goals for society or to conduct entrepreneurial activities	P6S_KO
SESP_K04	Compliance with the law and ethical principles in projects related to Cloud and DevOps	P6S_KR
SESP_K05	Student knows how to encourage culture of innovations in the organization	P6S_KR