

Python programming workshop

Department that provides teaching	Automation of electromechanical systems and electric drive
Possible restrictions	No restrictions
HE level	First (undergraduate)
Specialties for which the discipline is adapted	141 "Electric power engineering, electrical engineering and electromechanics"
Course	3
The scope of the discipline and the distribution of hours of classroom and independent work	4 ECTS credits classroom classes: lectures – 36 hours, computer workshops – 36 hours independent work - 48 hours
Language of teaching	Ukrainian
Requirements for starting the study of the discipline	Basic knowledge of higher mathematics, computing and programming languages
What will be studied	<p>The subject studies: the basic syntax of the Python language , the basics of procedural, structural, object-oriented and functional programming in the Python language , the use of libraries for the development of programs for various purposes, including mathematical calculations and graphing, working with web applications and databases, data analysis and others.</p> <p>At computer workshops, students in the Jupiter Notebook environment (Anaconda 3) in the Python programming language will create programs for various purposes, which will allow you to familiarize yourself with the capabilities of this programming language.</p>
Why is it interesting/should be studied?	<p>Currently, the Python programming language is perhaps the easiest to learn, but due to a number of advantages, such as efficiency and cross-platform, it is used for: data analysis, data visualization, machine learning, software development, web application development, scripting and other tasks.</p> <p>A separate advantage of this programming language is a large number of open libraries, which allow you to significantly increase the speed of creating relationships.</p> <p>Therefore, students' acquisition of knowledge and skills in the use of the Python programming language will significantly improve their qualifications as specialists in electromechanics and automation.</p>
What you can learn	<ul style="list-style-type: none"> – gain knowledge about the basic syntax of the Python language ; – create software applications in the Jupiter Notebook environment (Anaconda 3) in the Python programming language ; – develop using specialized libraries.
How to use acquired knowledge and skills	The acquired knowledge and skills will allow to increase the professional level of future specialists in electromechanics and automation, both in the field of development and operation of automatic control devices, and in related areas related to the development of application programs, including for processing data of experiments, modeling processes in automatic control systems and other areas.
Information support of the discipline	<p>Syllabus, lecture notes, methodological instructions for computer workshops.</p> <ol style="list-style-type: none"> 1. A.V. Yakovenko Fundamentals of programming . Python . Part 1. - Kyiv: KPI named after Igor Sikorskyi, 2018. – 195 p. 2. A tutorial on Python. Access mode: https://docs.python.org/uk/3/tutorial/index.html
Semester control	Test