The syllabus of the discipline

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| № | Field name | Detailed content, comments |
|  | Name of the faculty | Faculty of Computer Science |
|  | The level of higher education | Bachelor's |
|  | Code and title of specialty | 126 Information systems and technologies |
|  | The type and title of the educational program | EPP «Information technologies of the Internet of Things» |
|  | Code and title of the discipline | \_\_ТА\_\_\_ Theory of algorithms |
|  | Number of ECTS credits | 4 |
|  | The structure of the course (distribution by type and hours of training) | 24 h. – 12 lectures, 24 h.– 6 practical works, 8 h. – 4 consultations, 64 h. – independent work , semester control: combined exam |
|  | Schedule (terms) of study of the subject | First course, 1st semester |
|  | Prerequisites for learning the discipline | Disciplines "Discrete Mathematics" and "Fundamentals of Programming" are studied in parallel. |
|  | Abstract (content) of the discipline | Mandatory discipline of professional and practical training, contains content modules:  1. Basic concepts of algorithm theory  2. Search and sorting algorithms  3. Data structures.  4. Algorithmic strategies |
|  | Competencies, knowledge, skills, understanding that a higher education acquirer has in the learning process | Possession of basic knowledge in the field of theory of algorithms, skills to apply this knowledge in research and professional activities; ability to analyze and synthesize scientific and technical, natural science information using the methods of algorithm theory; knowledge of the application of modern methods and algorithms for searching, sampling and sorting information during the analysis, synthesis and design of information systems of different nature. |
|  | Learning outcomes of a Higher Education applicant | Ability to analyze the logical and algorithmic structure of physical and technological processes, information processing processes in nature and society;    implement basic algorithms by means of algorithmic language; to develop new mathematical methods and effective algorithms for implementing the functions of information systems and technologies in applied areas; analyze and choose computational methods for solving problems of information systems design according to the criteria of minimizing computing costs, stability, complexity, etc. |
|  | Assessment system in accordance with each task for taking tests/exams | 1. Work out and defend practical classes.  2. Perform Individual homework  3. Get at least 60 points per semester.  4. Pass the combined exam.  Semester grade : (9-15)х6 practical works +(6-10)х Individual homework =(60-100) points.  Exam score  =(60-100) points.  The exam is combined in the form of a computer. test and practical task (test of 20 tasks, duration of 30 minutes, practical task - algorithm development). |
|  | The quality of the educational process | Adherence to the principles of academic integrity (<http://lib.nure.ua/plagiat>). Update of the working program of the discipline - 2019. Practical classes are performed in the laboratory of the department, software - Visual Studio 2019 |
|  | Methodological support | 1. Complex of educational and methodical support of educational discipline "Theory of algorithms" of preparation of bachelors of specialty 126 - Information systems and technologies [Electronic resource] / KhNURE; developed. T.G. Bilova. - Kharkiv, 2018. - 169 p . <http://catalogue.nure.ua/knmz>. |
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