

№	Field name	Detailed content, comments
1.	Name of the faculty	Faculty of information radio technologies and technical information security
2.	The level of higher education	Master
3.	Code and title of specialty	171 – Electronics
4.	The type and title of the educational program	Educational program Systems, technologies and computer means of multimedia
5.	Code and title of the discipline	ББ 2.3 Modern animation technologies
6.	Number of ECTS credits	4
7.	The structure of the course (distribution by type and hours of training)	Lectures - 4 hours, practical - 24 hours, laboratory work - 12 hours, consultations - 8 hours, independent work - 72 hours, semester control - combined exam
8.	Schedule (terms) of study of the subject	Course -1, semester - 2
9.	Prerequisites for learning the discipline	Introduction to the specialty, Introduction to 3-D graphics, 3-D graphics, Computer animation, Post video processing and animation.
10.	Abstract (content) of the discipline	Fundamentals of the theory and practice of three-dimensional graphics; creation of animation of three-dimensional models with the subsequent creation of a three-dimensional scene.
11.	Competencies, knowledge, skills, understanding that a higher education acquirer has in the learning process	General competencies: 1. Ability to abstract thinking, analysis and synthesis. 2. Ability to apply knowledge in practical situations. 3. Knowledge and understanding of the subject area and understanding of professional activity. 5. Ability to conduct research at the appropriate level. 6. Ability to search, process and analyze information from various sources. Professional competencies: 6. Ability to use information technology, methods of intellectualization and visualization, artificial intelligence, cloud computing and supercomputer computing for research and analysis of processes in electronic systems. 8. Ability to demonstrate and use knowledge of modern computer and information technologies and tools of engineering and research, calculations, data processing and analysis, modeling and optimization. 9. Ability to demonstrate and apply in practice knowledge of methods for modeling dynamic systems, evaluation of system efficiency and methods for assessing the

		quality of measurements in electronic systems. 10. Ability to use technical equipment and facilities, decision-making systems, software and tools for conducting a scientific experiment and processing the results of experimental research. 13. Ability to demonstrate and use knowledge of methods and technologies of development, testing and application of information-measuring, microprocessor electronic systems, data conversion and transmission systems. 14. Ability to apply knowledge of methods of processing and display of information in modern electronic systems and to demonstrate the ability to design, calculate and program microprocessor electronic tools and systems.
12.	Learning outcomes of a Higher Education applicant	6. Analyze technical and economic indicators, reliability, ergonomics, patent purity, market needs, investment climate and compliance of design decisions, research and development with the legislation of Ukraine on intellectual property. 12. Follow the principles of large-scale implementation of modern information technologies, means of communication, methods of improving energy and economic efficiency of development, production and operation of electronic equipment. 15. Organize and manage research, innovation and investment activities, business projects and production processes, taking into account technical, technological and economic factors. 17. Practice information and scientific research, use databases and knowledge, critically interpret and interpret the results, draw conclusions and form areas of research based on domestic and foreign experience. 18. Solve and coordinate the development, selection and use of the necessary equipment, tools and methods in the organization of the production process, taking into account technical and technological capabilities.
13.	Assessment system in accordance with each task for taking tests/exams	The final score is calculated by the formula: $O_{\text{д}}^{\text{екз}} = 0,6 \cdot O_{\text{сем}} + 0,4 \cdot O_{\text{екз}}$, where $O_{\text{сем}}$ – semester grade in a 100-point system, $O_{\text{екз}}$ – score for the exam in a 100-point system.
14.	The quality of the educational process	The policy of academic integrity, updating the content of the discipline on the basis of

		modern practices, scientific achievements, recommendations of employers.
15.	Methodological support	1. 3D Animation for the Raw Beginner Using Autodesk Maya 2 / Roger King– London, 2019 – 440p. 2. Animation Methods: Rigging Made Easy: Rig Your First 3D Character in Maya/David A. Rodriguez – Createspace,2013.–172p. 3. William Vaughan, Digital Modeling – New Riders, 2012. – 432p. 4. Rig it Right! Maya Animation Rigging Concepts, 2nd / Roger King– London, 2019 – 256 p. 5. Compositing Visual Effects in After Effects: Essential Techniques/ Lee Lanier–Routledge, 2015. – 270p. 6. Компьютерная анимация. Создание 3D-персонажей в Maya / Алексей Сафонов – Питер, 2012 – 208с. 7. Методичні вказівки до практичних занять з дисципліни «Сучасні технології анімації» для студентів спеціальності 171 «Електроніка» / Упоряд.: Толстих Є.Г.,Бобнев Р.О. – Харків: ХНУРЕ, 2019. 8. Методичні вказівки до лабораторних занять «Сучасні технології анімації» для студентів спеціальності 171 «Електроніка» / Упоряд.: Толстих Є.Г., Бобнев Р.О. – Харків: ХНУРЕ, 2019.
16.	The developer of the Syllabus	Senior lecturer Yelyzaveta Tolstykh, yelyzaveta.tolstykh@nure.ua