

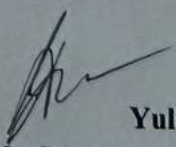
Ministry of Education and Science of Ukraine
Sumy National Agrarian University

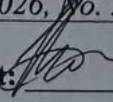
Course Syllabus of the Educational Component
OC7. MODERN MULTIMEDIA TECHNOLOGIES
(Mandatory)

Specialty: G13 Food Technologies

Educational Program Craft Technologies and Gastronomic

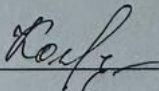
Innovations Level of Higher Education Bachelor (First (Bachelorship) Level)

Developer:  Yuliia RUDENKO, Doctor of Pedagogical Sciences, Associate Professor of the Department of Cybernetics and Informatics

Reviewed, approved, and authorized at the meeting of the Department of Cybernetics and Informatics	Protocol dated 09 June 2026, No. 22
	Head of the Department:  Igor SHELEHOV

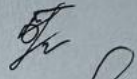
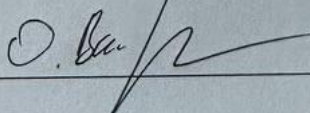
Agreed:

Guarantor of the Educational Program:



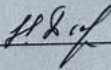
Olena Koshel

Dean of the Faculty where the Educational Program is implemented:

Nataliia BOLHOVA

Review of the course syllabus (attached) provided by:



O. Viunenko

Methodologist of the Quality of Education, Licensing, and Accreditation Department:

N. Pasko

Registered in the electronic database: date: _____ 2026

1. GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT**1. GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT**

Parameter	Description
Name of the EC	OC7 Modern Multimedia Technologies
Faculty / Department	Food Technologies
Status of the EC	Mandatory
Program / Specialty (programs), of which the EC is a component (filled for mandatory ECs)	EP - Craft Technologies and Gastronomic Innovations Specialty G13 – Food Technologies
The EC can be offered for (filled for elective ECs)	—
NQF Level	6th
Semester and duration of study	1st semester, (weeks 1-15)
Number of ECTS credits	5
Total volume of hours and their distribution	Contact work (classes): 60 hours total • Lectures: 30 hours • Practical / Seminar: — • Laboratory: 30 hours Independent work: 90 hours
Language of instruction	Ukrainian
Teacher / Coordinator of the educational component	Associate Professor of the Department of Cybernetics and Informatics, Doctor of Pedagogical Sciences Rudenko Yuliia Oleksandrivna
Contact information	snikolb@gmail.com; classroom 308e.
General description of the educational component	The educational component is based on modern scientific and practical knowledge in the field of multimedia technologies. The course is oriented toward the formation of digital competencies and the use of creative approaches to the use, creation, and distribution of media products in the industry.
Goal of the educational component	Acquisition by students of a complex of knowledge in the field of multimedia technologies, systems, and methods of storing and reproducing text, graphic, sound, and video information, their components, and the acquisition of practical skills and theoretical knowledge necessary for a creative approach in further professional work. Master algorithms for creating modern multimedia products, computer software, and technical tools in the field of multimedia: graphic, text, sound, and video editors. Master conceptual models of development, distribution, processing, use, and storage of multimedia documents; strategy of multimedia systems selection.
Prerequisites for studying the EC, connection with other educational components of the EP	1. The educational component is based on the general education course of Informatics. 2. The educational component is the basis for studying the discipline "Engineering and Computer Graphics".

Academic integrity policy	When performing laboratory work, writing essays, and during modular, attestation, credit, and examination papers, the student must strictly adhere to the rules of academic integrity. Upon detection of facts of cheating or academic dishonesty, the work performed by the student will be canceled.
Keywords	Multimedia, interactive technologies, digital services
Link to the course in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=3727

2. LEARNING OUTCOMES OF THE EDUCATIONAL COMPONENT AND THEIR LINK TO PROGRAM LEARNING OUTCOMES

Learning Outcomes for the Educational Component (EC) After studying the educational component, the student is expected to be able to...	Program Learning Outcomes (PLOs) addressed by the EC	Assessment of Learning Outcomes
ILO 1. Know the theoretical foundations of modern multimedia technologies.	PLO 3. Be able to apply information and communication technologies to support professional activities and conduct applied research.	Solving practical tasks, multiple-choice tests
ILO 2. Apply theoretical knowledge and practical skills in the use of multimedia tools for creating media products.	PLO 3. Be able to apply information and communication technologies to support professional activities and conduct applied research.	Solving practical tasks, multiple-choice tests
ILO 3. Be able to use tools for preparing and delivering multimedia presentations.	PLO 3. Be able to apply information and communication technologies to support professional activities and conduct applied research.	Multiple-choice tests, project-based assignments
ILO 4. Demonstrate skills in digital collaborative work.	PLO 3. Be able to apply information and communication technologies to support professional activities and conduct applied research.	Project-based assignments

Competencies to be Developed/Acquired through Course / Learning Activity and Non-Formal Education Evidence of Achievement

Data Visualization	Data Visualization Prometheus
General Competencies: • Ability to think critically, analyze, and synthesize information. • Ability to use information and communication technologies in professional activities.	Evidence of Learning Outcomes: Certificate of successful course completion indicating the number of study hours. The authenticity of the certificate can be verified via the link provided on the certificate.

Professional Competencies: • Ability to perform visual analysis of quantitative and qualitative indicators in a professional field. • Ability to create dynamic dashboards and interpret them in the context of professional tasks.	
Getting Started with ChatGPT General Competencies: • Ability to engage in lifelong learning and demonstrate digital adaptability. • Ability to communicate effectively in oral and written forms. Professional Competencies: • Ability to use artificial intelligence tools to automate professional activities. • Ability to critically evaluate the quality and reliability of AI-generated responses in a professional context.	Getting Started with ChatGPT Prometheus Evidence of Learning Outcomes: Certificate of successful course completion indicating the number of study hours. The authenticity of the certificate can be verified via the link provided on the certificate.

. CONTENT OF THE EDUCATIONAL COMPONENT (COURSE SYLLABUS)

Topic	Lectures	Laboratory Classes	Independent Study
Module 1			
Lecture 1. Introduction to Multimedia Technologies. Visualization Trends in the Food Industry	2	–	10
Laboratory Work 1. Creating a Personal Portfolio	–	2	–
Lecture 2. Tools for Preparing and Delivering Presentations	2	–	10
Lecture 3. Presentation Technologies (PowerPoint, Canva, Prezi)	2	–	–
Laboratory Work 2. Creating a Presentation of a Technological Process Using Different Services	–	2	–
Lecture 4. Infographics and Collages	2	–	10
Laboratory Work 3. Developing an Infographic and Collage of Production Stages	–	2	–
Lecture 5. Logo Design	2	–	–
Laboratory Work 4. Logo Development and Brand Story Justification	–	2	–
Lecture 6. MS Excel as a Data Visualization Tool	2	–	10
Laboratory Work 5. Visualizing Tabular Data in MS Excel	–	2	–
Lecture 7. Visualization of Tabular Data	2	–	–
Laboratory Work 6. Visualization of Tabular Data Using Online Services	–	2	–
Lecture 8. Dashboards and Analytics	2	–	10
Lecture 9. Data Visualization in Tableau and Looker Studio	2	–	–
Laboratory Work 7. Creating a Dashboard in Looker Studio	–	2	–
Laboratory Work 8. Creating a Dashboard in Tableau	–	2	–
Module 2			
Lecture 10. Animation of Technological Processes	2	–	10
Lecture 11. Animation Software Applications	2	–	–
Laboratory Work 9. Developing an Animation from a Template	–	2	–
Laboratory Work 10. Creating a Storyboard and Scenario in Animaker	–	2	–
Lecture 12. Video Production and Editing	2	–	10
Laboratory Work 11. Creating a Video Tutorial	–	2	–
Non-formal Education Course 1: Data Visualization (Prometheus)	–	–	10
Lecture 13. Cloud Technologies and Collaborative Work	2	–	10

Laboratory Work 12. Collaborative Work in Cloud Environments	–	2	–
Lecture 14. Virtual Environments, 3D, VR/AR Technologies	2	–	5
Laboratory Work 13. VR/AR Testing	–	2	–
Lecture 15. Artificial Intelligence in Multimedia	2	–	5
Laboratory Work 14. AI-Assisted Content Creation	–	2	–
Laboratory Work 15. Applied Multimedia Technologies	–	2	–
Non-formal Education Course 2: Getting Started with ChatGPT (Prometheus)	–	–	10
Total	30	30	90

4. TEACHING AND LEARNING METHODS

Intended Learning Outcome (ILO)	Teaching Methods (activities conducted by the lecturer during classes and consultations)	Hours	Learning Methods (independent student activities)	Hours
ILO 1. To know the theoretical foundations of modern multimedia technologies.	Interactive lecture, practical classes	20	Studying theoretical material, completing practical tasks	30
ILO 2. To apply theoretical knowledge and practical skills in using multimedia tools for creating media products.	Problem-based lecture, practical classes, discussion of current issues	20	Studying theoretical material, completing practical tasks	30
ILO 3. To use tools for preparing and delivering multimedia presentations.	Interactive lecture, practical classes	10	Studying theoretical material	10
ILO 4. To demonstrate skills in digital collaborative work.	Interactive lecture, practical classes	10	Studying theoretical material, completing practical tasks	20
Total		60		90

5. ASSESSMENT OF THE EDUCATIONAL COMPONENT

5.1. Diagnostic Assessment (if applicable)

Diagnostic assessment is conducted at the beginning of the course to determine students' initial level of knowledge, skills, and competencies in multimedia technologies and data visualization tools. It may include entry testing, oral questioning, and review of prior practical experience.

5.2. Summative Assessment

No.	Summative Assessment Methods	Points Weight	/ in	Assessment Date
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		Total Grade	
Module 1 (35 points):			
1	Completion of laboratory/practical works (8 labs × 3 points)	24 points / 24%	According to the academic schedule
2	Mid-term test (multiple-choice test)	11 points / 11%	Week 7
3	Completion of Non-formal Education Course 1 (optional). Provides an alternative opportunity to obtain 10 points instead of testing or laboratory work	10 points / 10%	During the semester
Module 2 (35 points):			
4	Completion of laboratory/practical works (7 labs × 3 points)	21 points / 21%	According to the academic schedule
5	Mid-term test (multiple-choice test)	14 points / 20%	Week 15
6	Completion of Non-formal Education Course 2 (optional). Provides an alternative opportunity to obtain 20 points instead of testing or laboratory work	20 points / 20%	During the semester
7	Final exam (multiple-choice test)	30 points / 30%	Week 15

5.1.1. Assessment Criteria

Component	Assessment	Points / Weight in Total Grade	Date of Assessment
Laboratory works completion	Each completed laboratory work is assessed at 3 points	24 points	According to the academic schedule
Mid-term test (multiple-choice test)	Test includes 11/14 questions, each question is worth 1 point	11–14 points	Week 7 / Week 15
Non-formal education courses	Certificate submission and application for recognition according to the procedure of non-formal education credit transfer	10–20 points (alternative assessment)	During the semester
Final exam (multiple-choice test)	Test includes 30 questions, each question is worth 1 point	30 points	Week 15

Final Assessment Form and Admission Requirements

The final form of assessment is an **examination**. The total number of points for the discipline (maximum **100 points per semester**) is determined as the sum of points obtained by the student during the semester.

A student is **not admitted to the final assessment** in the discipline if they:

- have missed and not completed more than **20% of classes**;
- have not completed module control assessment stages;
- have not completed the mandatory set of tasks (laboratory works) *предусмотрен* by the working curriculum for the semester;
- have an unsatisfactory semester rating of **0–34 points**.

6. LEARNING RESOURCES (LITERATURE)

6.1. Main Sources

1. Modern Multimedia Technologies. Lecture course for 1st-year students of specialty G13 “Food Technologies” (full-time and part-time study), Bachelor’s degree / compiled by Yu.O. Rudenko – Sumy: SNAU, 2025.
2. Modern Multimedia Technologies. Methodological guidelines for laboratory work for 1st-year students of specialty G13 “Food Technologies” (full-time and part-time study), Bachelor’s degree / compiled by Yu.O. Rudenko – Sumy: SNAU, 2025.
3. Modern Multimedia Technologies. Methodological guidelines for independent work for 1st-year students of specialty G13 “Food Technologies” (full-time and part-time study), Bachelor’s degree / Yu.O. Rudenko – Sumy: SNAU, 2025.

6.2. Additional Sources

1. Tsarenko M.O. Computer Graphics: Lecture Course. – Odesa: Ushynsky University, 2022. – 34 p.
2. Sallenbacher J. Creative Personal Branding. – Kharkiv: Fabula, 2022. – 240 p.
3. Rawles D. Digital Branding: A Complete Step-by-Step Guide to Strategy, Tactics, Tools, and Measurement. – Kharkiv: Fabula, 2022. – 256 p.
4. Vyunenko O., Agadzhyanov-Gonzales K., Agadzhyanova S., Rudenko Yu. Information and Communication Technologies of E-Learning as a Basis for Innovations in Higher Education. Education. Innovation. Practice, 2023, Vol. 11, No. 4, pp. 13–19. DOI: 10.31110/2616-650X-vol11i4-002
5. Degtyaryova N.V., Rudenko Yu.O., Vernydub H.O. Developing Future Teachers’ Skills in Working with Scientific Texts. Pedagogy of Creative Personality Formation, 2022, Issue 68, Vol. 1, pp. 240–243.
6. Rudenko Yu.O., Agadzhyanova S.V., Agadzhyanov-Gonzales K.H., Batalova A.B. Use of Interactive Tools in Zoom Online Conferences as a Way to Improve the Quality of Higher Education. Science and Technology Today. Pedagogy Series, 2024, No. 3 (31), pp. 644–654.

7. Rudenko Yu.O. et al. Aspects of Using Simulation Modeling in Computer Science. Science and Technology Today. Technical Series, 2024, No. 9(37), pp. 808–817. DOI: 10.52058/2786-6025-2024-9(37)
 8. Rudenko Yu.O. et al. Analysis of Interactive Dashboards as Tools for Supporting the Educational Process. Science and Technology Today. Technical Series, 2025, No. 5(46), 2019. DOI: 10.52058/2786-6025-2025-5(46)
 9. Furniss M. *Art in Motion: Animation Aesthetics*, Revised Edition. – Eastleigh, UK: John Libbey, 2017. <https://muse.jhu.edu/book/56775> (accessed: 2023)
 10. Cavalier S. *The World History of Animation*. – London: Aurum Press, 2022. <https://www.ucpress.edu/book/9780520261129/the-world-history-of-animation>
 11. Yurchenko A., Semenikhina O., Rudenko Yu., Shamonia V. Digital Technology in IT Education: The View of a Ukrainian University. Proceedings of Admiral Makarov National University of Shipbuilding, 2023, No. 4(482), pp. 129–133. DOI: 10.15589/znp2023.4(482).15
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6.3. Software

1. Google Slides (presentation creation, collaboration, integration with video and graphics) <https://slides.google.com>
2. Canva Free (presentations, infographics, animations, video – free educational plan) <https://www.canva.com>
3. Prezi Basic (dynamic online presentations) <https://prezi.com>
4. Piktochart Free (infographics and reports) <https://piktochart.com>
5. draw.io / diagrams.net (flowcharts, diagrams, process maps) <https://app.diagrams.net>
6. Google Sheets (data visualization, charts, integration with Looker Studio) <https://sheets.google.com>
7. Tableau Public (data dashboards and analytics visualization) <https://public.tableau.com>
8. Google Looker Studio (interactive dashboards for monitoring and analytics) <https://lookerstudio.google.com>
9. Animaker (free plan) (animation and video creation) <https://www.animaker.com>
10. DaVinci Resolve (video editing and color correction) <https://www.blackmagicdesign.com/products/davinciresolve>
11. CapCut (video editing and AI tools) <https://www.capcut.com>
12. Figma (UI/UX design and collaboration) <https://www.figma.com>
13. Miro (online collaboration board) <https://miro.com>
14. Mozilla Hubs (VR environments) <https://hubs.mozilla.com>

15. Unity (3D and VR development) <https://unity.com>
16. Blender (3D modeling and rendering) <https://www.blender.org>
17. Sketchfab (3D model viewing and sharing) <https://sketchfab.com>
18. Runway ML (AI video editing) <https://runwayml.com>
19. D-ID (AI avatars and voice) <https://www.d-id.com>
20. Pictory AI (text-to-video tool) <https://pictory.ai>
21. Bing Image Creator / DALL-E (AI image generation) <https://www.bing.com/images/create>
22. Food Science & Technology – Amrita VLab (virtual labs)
<https://vlab.amrita.edu/?sub=3&brch=73>