

Vinnitsia National Technical University
Faculty power industry and electromechanics
Department power stations and systems

INNOVATIVE AND PSYCHOLOGICAL ASPECTS OF MODERN EDUCATION

**Mandatory
Professional
II (master's) level higher education**

Field of knowledge **14 Electrical engineering**
Specialty **141 Electricity, electrical engineering and electromechanics**

Educational programs: **Innovative and Psychological Aspects of Modern Education**

Teacher: **Khoma Oleg**
Language teaching: **Ukrainian**

Semester - **1**
Credits EPSTS **3**
Lectures **18 hours**
Practical - **18 hours**
Independent work - **54 hours**
Type of control: **credit**

Prerequisites for studying the discipline

The discipline "Innovative and psychological aspects of modern education" is based on the knowledge and skills acquired during the study of the disciplines "Philosophy", "Personality Psychology", "History and Culture of Ukraine"; discipline complements such disciplines as "Philosophy of education", "Philosophy of science and technology", "Methodology and organization of scientific research".

Competencies that the applicant must master as a result of studying the discipline

GC01. Ability to abstract thinking, analysis and synthesis, personal and professional development.

GK06. Ability to make informed decisions, apply best practices in professional activities.

GK07. Ability to learn and master current knowledge, be responsible for contributing to professional knowledge and practice and/or evaluating the results of teams and collectives.

GK09. Ability to work independently and in a team, motivate people and move towards a common goal.

SC09. The ability to understand and take into account social, environmental, ethical, economic and commercial considerations affecting the implementation of technical solutions in electric power, electrical engineering and electromechanics.

Program results of studying the discipline

PH9. Protect own intellectual property rights and respect the similar rights of others.

PH10. Search for educational programs, grants and scholarships of the European Union and other countries.

PH12. To participate in international scientific conferences and seminars devoted to modern problems in the field of electric power engineering, electrical engineering and electromechanics.

PH16. Adhere to the principles of democracy and respect for the rights of citizens.

PH19. To demonstrate respect for the identity of representatives of different cultures and faiths.

1. Description of the academic discipline

Name of indicators	Field of knowledge, specialty, educational programs, level of higher education	Characteristics of the academic discipline	
		full-time education	external form of education
The number of credits is 3	Branch of knowledge 14 Electrical engineering	Mandatory professional	
Modules - 2	Specialty 141 Power engineering, electrical engineering and electromechanics Educational program: Innovative and Psychological Aspects of Modern Education	Year of training (course):	
Content modules – 2		1	1
		Semester	
		1st	1st
The total number of hours is 90		Lectures	
Weekly hours for full-time education: classrooms - 2	Level of higher education: second (master's)	18	5
		Practical, seminar	
		18	5

student's independent work - 3			
		Independent work	
		54	80
		type of control	
		credit	

2. Program of educational discipline

Information volume of the academic discipline

Content module 1: *Pedagogy and psychology of higher education*

Topic 1. Philosophical and methodological foundations of the development of modern education. Philosophy of education. Paradigms of education. The concept of innovativeness in modern education. Innovative foundations of modern scientific approaches in education.

Topic 2. History, current state and prospects for the development of education and higher education. History of education and higher education. The crisis of education and higher education. Innovative processes in Western and Ukrainian education: a comparative analysis. Reforming education in Ukraine. Ukraine and the Bologna process. Cross-border cooperation in the space of higher education.

Topic 3. Quality of higher education: modern understanding and Ukrainian context. The essence of the concept of "quality of education" and its genesis in the field of higher education. Standards and recommendations for quality assurance in the European area of higher education. Interdisciplinary cooperation in the space of higher education.

Topic 4. The role of the university in the innovative development of society. Missions and strategies of the university. Development of the leadership potential of a modern university: foundations and tools. Topic 5. Psychological foundations of innovations in education. Basics of psychology. Basics of pedagogy. Pedagogical psychology. The role of the psychological concept in modern education. Psychological readiness for innovations in education.

Topic 6. Psychological and pedagogical process in the modern higher education system. Systemic nature of education. Purpose and content of education and higher education. Education standards. Psychological and pedagogical process in education. Educational activities in higher education. Research work of students.

Topic 7. Psychological characteristics of student age. General characteristics of studentship. Self-determination as the main neoplasm of student age. Professionalization of the student's personality as a future specialist with a higher education. Subjectivity as the basis of development and self-actualization of the individual. Development and characteristics of individual subjectivity. The influence of

subjectivity on self-determination and professionalization of a student. Controversies and crises of student age. Typological features of modern students.

Topic 8. Psychological foundations of pedagogical activity of a teacher of a higher school. Professionalism and pedagogical skill of the teacher. Pedagogical activity of the teacher. Professional and personal aspects of teacher professionalism. Pedagogical skill of the teacher. Pedagogical culture of the teacher. The teacher's image and authority. Typologies of teachers.

Topic No. 9. Pedagogical communication as the basis of the pedagogical process in higher education. Pedagogical communication. Pedagogical position of the teacher. Pedagogical communication as a form of pedagogical communication. Contradictions in the pedagogical communication of the teacher and students. Dialogic communication (communication) as a condition for the effectiveness of the pedagogical process in higher education. Communicative competence of the teacher.

Topic 10. Pedagogical conflict and ways to resolve it. Conflicts as a form of social existence (a form of communication). Peculiarities of pedagogical conflicts and their psychological analysis. Causes of pedagogical conflicts. Pedagogical conflict management. Resolving pedagogical conflicts. Peculiarities of conflicts in distance learning and Internet communication and ways to resolve them.

Topic 11. Rhetorical culture of a higher school teacher. The essence and significance of the rhetorical culture of a higher school teacher. Rhetorical culture of a higher school teacher as a multidimensional personal and professional education. The concept of rhetoricalization of the educational process. The structure of the rhetorical culture of a higher school teacher.

Content module 2: *Innovative technologies in education*

Topic 12. Higher school didactics. Theoretical foundations of the organization of the educational process. Definition and tasks of didactics. Didactic system. Educational process in higher education. Laws, regularities and principles of education. Goals and content of higher education.

Topic 13. Psychological and pedagogical analysis of student learning. A student as a subject of educational and professional activity. The student's subjectivity as the psychological basis of his readiness for learning. Prerequisites for students' success in educational and professional activities. Adaptation of students to the conditions of a higher educational institution.

Topic 14. Teaching methods in higher education. Methods, means and forms of the educational process. Teaching methods in higher education. Problems of higher education teaching methods. The role of knowledge, abilities and skills in determining the competence (professional competence) of an individual. Teaching methods and tools. Forms of organization of the educational (learning) process.

Topic 15. Innovative technologies (methods) in education. Methodology and technology. Classification of pedagogical technologies. The concept of pedagogical innovation. Traditional and innovative training. Types of innovative learning technologies. Digital and blended education. Media education as an innovative technology. Classroom and extracurricular teaching methods.

Topic 16. Active and interactive technologies (methods) of learning. Definition of active and interactive learning technologies (methods). Types of interactive learning

technologies (methods). Game methods (technologies) of learning. Examples of didactic and business games.

Topic 17. Independent work as the basis of innovations in modern education. Independent work of students and its methodology. Properties of classroom, non-classroom and creative (including research) independent work in higher education. Educational and methodical support of the student's independent work by the teacher. The integrability of sciences in the process of independent work of the student. Peculiarities of independent work during Internet education.

Topic 18. Diagnostics of educational achievements in modern education. The value of diagnostics during the educational process in higher education. Peculiarities of control, verification and assessment of students' knowledge. Methods of collecting statistical data, their analysis to identify the dynamics of knowledge. Psychological toolkit of pedagogical diagnostics.

Topics of practical classes

#	Topic name	Hours	
		full-time education	external form of education
	<i>Content module 1</i>		
1	Philosophical and methodological foundations of the development of modern education.	1	0,5
2	The current state and prospects for the development of education and higher education. Purpose and quality of education. Innovativeness of modern education.	1	0,5
3	Psychological foundations of innovations in education.	2	1
4	Psychological and pedagogical process in the modern educational system of the higher school.	1	-
5	Psychological and pedagogical principles of teacher and student activity.	1	-
6	Pedagogical communication.	1	-
7	Management of pedagogical conflicts and their resolution.	1	-
8	Rhetorical culture of the teacher and students.	1	-
	<i>Content module 2</i>		
9	Didactic process in higher education.	1	-
10	Psychological and pedagogical analysis of student learning.	1	0,5
11	Teaching methods in higher education. Forms of organization and training methods.	1	0,5
12	Innovative technologies and teaching methods.	2	1
13	Distance and mixed education.	1	-
14	Didactic and business games in the educational process.	1	0,5
15	Independent work as the basis of innovations in modern education.	1	0,5
16	Diagnostics of educational achievements in modern education.	1	-
	<i>Total</i>	18	5

Independent work

#	Topic name	Hours	
		full-time education	full-time education
1	Philosophical and methodological foundations of the development of modern education.	3	4
2	History, current state and prospects for the development of education and higher education. Purpose and quality of education. Innovativeness of modern education. The role of universities in the development of education.	5	7
3	Psychological foundations of innovations in education.	4	5
4	Psychological and pedagogical process in the modern educational system of the higher school.	2	4
5	Psychological and pedagogical principles of teacher and student activity.	5	8
6	Pedagogical communication (interaction) as a methodological and methodical basis of higher school pedagogy.	3,5	3
7	Pedagogical conflict and ways to resolve it.	2,5	3
8	Rhetorical culture of a higher school teacher.	2	3
9	Higher school didactics. Theoretical foundations of the organization of the educational process.	3	5
10	Psychological and pedagogical analysis of student learning.	4	7
11	Teaching methods in higher education. Forms of organization and training methods.	3	5
12	Innovative technologies (methods) in education.	12	8
13	Independent work as the basis of innovations in modern education.	3	7
14	Diagnostics of educational achievements in modern education.	2	5
	Total	54	74

Individual tasks

Preparation of individual and group projects; reports at the annual scientific and theoretical conference of teachers, employees and students of VNTU; performing tasks from the "Workbook for independent work"; performance of psychological and pedagogical tests and creative tasks.

Teaching methods

Lecture, problem lecture, demonstration, in particular, with the use of multimedia teaching aids, practical work, preparation of creative works, essays, reports of a scientific and research nature, in particular, for the annual scientific and technical conference of teachers. , employees and students of VNTU.

Current control is carried out by writing colloquiums in the form of a control paper,

psychological and pedagogical tests, performing interactive tasks during classes and tasks from the "Workbook for independent work", project defense.

The final control of the knowledge of the students is carried out by compiling a non-differentiated assessment on topics covering the entire course of the discipline.

Non-differentiated assessment can be conducted using an oral survey and/or tests in the university's electronic system and additional written work.

Distribution of points received by students

Table 1 Distribution of points for mastering content modules during the 2nd semester for full-time students

Current testing and independent work						Final test	Sum
Content module 1			Content module 2			25 points	100
T1	T2...	T11	T12	T13...	T18		
45 points			30 points				

T1, T2 ... T18 – topics of content modules

Table 2 Evaluation of students' knowledge, abilities and skills in certain types of work and in general by modules (in points)

Type of work	Module 1	Module 2	Sum
1. Practical lessons	15	15	30
2. Current knowledge control tests	5	10	15
3. Colloquium	15	15	30
Total	35	40	75

Methodical support

1. Work program of the educational discipline "Innovative and Psychological Aspects of Modern Education".
2. Synopsis of lectures.
3. Methodical instructions for practical classes.
4. Workbook for independent work.
5. Questions for colloquiums.
6. Current knowledge control tests.
7. Final knowledge control tests.
8. A set of complex control works.

Course policy

Applicants and teachers must adhere to the norms of ensuring honor, dignity, mutual respect and trust, equality and tolerance of all participants in the educational process by observing the principles of academic integrity set forth in the "Regulations on Academic Integrity at VNTU".

In order to prevent and detect plagiarism in academic works, to develop the skills of correct work with sources of information and to implement the practice of proper citation, compliance with the requirements of scientific ethics and respect for intellectual property, and activation of independence and individuality when creating an author's work and responsibility for violations of generally accepted rules of citation

should be observed of norms **"Regulations on the prevention of academic plagiarism and the procedure for its detection in educational, scientific, qualification and scientific-methodological works at VNTU"**.

In order to recognize the learning results obtained during non-formal and/or informal education (which was obtained according to educational programs and did not involve the awarding of state-recognized educational qualifications by education level, but could end with the awarding of professional and/or partial educational qualifications, as well as education that was carried out in the manner of self-education), applicants can use the relevant procedures specified in the **"Regulations on the procedure for recognizing learning results obtained through informal and/or informal education at VNTU"**.

Applicants have the right to appeal the results of intermediate and final control measures, but only on the basis of reasoned explanations, in accordance with the **"Procedure for the organization and conduct of assessments, differentiated assessments, examinations at VNTU"**, as well as by directly contacting the educational ombudsman, according to the **"Regulations on the educational ombudsman on the rights of VNTU students"**.

In order to resolve conflict situations that may arise between applicants and other participants of the educational process and/or to prevent the occurrence of conflict situations, one should be familiar with the norms of the **"Code of Ethics of VNTU"**.

VNTU applicants must be guided by the principle of "zero tolerance" to any manifestations of corruption and must take all measures provided by law to prevent, detect and counter corruption and related actions (practices), in accordance with the VNTU Anti-Corruption Program .

These documents are published on the VNTU website:
<https://vntu.edu.ua/uk/public-info/zag.html>

Recommended Books

1. Appelbaum, P. (2023). *The rise of STEM education: mathematics learning for STEM*. International Encyclopedia of Education. <https://www.sciencedirect.com/science/article/abs/pii/B978012818630>
2. Cai, Y. (2023). *Policy isomorphism: a lens for understanding the influence of globalization on national education policymaking*. International Encyclopedia of Education. <https://www.sciencedirect.com/topics/social-sciences/global-education>
3. Edwards, D. B., Moschetti, M. C., & Caravaca, A. (2023). *Globalization, Privatization, and the State: Contemporary Education Reform in Post-Colonial Contexts*. Abingdon: Routledge. <https://doi.org/10.4324/9781003026792>
4. Harris, R. McL., & Guthrie, H. B. (2023). *Pathways, labor markets and tertiary education systems*. International Encyclopedia of Education. <https://www.sciencedirect.com/science/article/abs/pii/B9780128186305020856>
5. Lybeck, E. R. (2021). *The University Revolution: Outline of a Processual Theory of Modern Higher Education*. Abingdon: Routledge. <https://doi.org/10.4324/9781351017558>

6. Pauer, E., & Regine, M. (Eds.). (2022). *Accessing Technical Education in Modern Japan*. Princeton: Princeton UP.
<https://doi.org/10.1515/9781912961269>
7. Rebele, J. E., & St. Pierre, E. K. (2019). A commentary on learning objectives for accounting education programs: The importance of soft skills and technical knowledge. *Journal of Accounting Education*, 48, 71-79.
<https://doi.org/10.1016/j.jaccedu.2019.07.002>
8. Ridder-Symoens, H. de. (2003). *A History of the University in Europe. Volume 1: Universities in the Middle Ages*. Cambridge: Cambridge UP.
9. Ridder-Symoens, H. de. (2003). *A History of the University in Europe. Volume 2: Universities in Early Modern Europe (1500-1800)*. Cambridge: Cambridge UP.
10. Rüegg, W. (2004). *A History of the University in Europe. Volume 4: Universities the Nineteenth and Early Twentieth Centuries (1800-1945)*. Cambridge: Cambridge UP.
11. Rüegg, W. (2011). *A History of the University in Europe. Volume 4: Universities since 1945*. Cambridge: Cambridge UP.
12. Standish, A. (2014). What is global education and where is it taking us? *The Curriculum Journal*, 25(2): 166-186.
<https://doi.org/10.1080/09585176.2013.870081>
13. Tulgan, B. (2022). *Bridging the Soft Skills Gap: How to Teach the Missing Basics to the New Hybrid Workforce*. John Wiley.
14. Zhang, H., Wing, P., Chan, K., & Boyle, Ch. (2014). *Equality in Education: Fairness and Inclusion*. Rotterdam: Sense Publishers.
<https://doi.org/10.1007/978-94-6209-692-9>