



# PEDAGOGICAL PRACTICE

## Work program of the discipline (Syllabus)

### Реквізити навчальної дисципліни

Level of higher education	<i>Third (educational and scientific)</i>
Field of knowledge	<i>17 Electronics and telecommunications</i>
Specialty	<i>173 Avionics</i>
Educational program	<i>Control systems of flight vehicles and complexes engineering</i>
Discipline status	<i>Normativ</i>
Form of study	<i>full-time (day) / full-time (evening) / part-time</i>
Year of preparation, semester	<i>2nd year, autumn semester</i>
The scope of discipline	<i>2 credits (60 hours)</i>
Semester control / control measures	<i>Test</i>
Timetable	<i>Rozklad.kpi.ua</i>
Language of teaching	<i>Ukrainian</i>
Information about course leader / teachers	<i>Lecturer: Doctor of Technical Sciences, Professor Oleksandr Vasyliovych Zbrutsky, tel. + 044-2048224, e-mail: zbrutsky@cisavd.kpi.ua</i> <i>Practical / Seminar: doctor of technical sciences, professor Zbrutsky Olexandr Vasyliovych, tel. + 044-2048224, e-mail: zbrutsky@cisavd.kpi.ua</i>
Course placement	<i>Sikorsky platform</i>

### Curriculum of the discipline

#### Description of the discipline, its purpose, subject of study and learning outcomes

Pedagogical practice is a mandatory component of the educational and scientific program of training doctors of philosophy and aims to provide the graduate student with the necessary pedagogical competencies.

The program of pedagogical practice of postgraduate students covers the organizational and methodological principles of practical professional training of graduate students. Necessary materials for educational and methodical support of postgraduate students' practice in order to master their pedagogical competencies are given.

The total amount of pedagogical practice is 90 hours (3 credits). Terms of practice - 2nd year, 3rd semester (12-13 weeks).

In the process of pedagogical practice of graduate students they master modern methods, forms and means of teaching, formation on the basis of knowledge obtained in higher education, professional skills to solve specific educational problems in a real pedagogical process, educating the need to systematically update their knowledge and creatively apply in practice.

Pedagogical practice contributes to the development of professional self-awareness, culture of communication, the formation of theoretical, practical and personal-motivational components of professional competence of trainees. In addition, during its passage, graduate students develop pedagogical skills and begin to develop their own creative style of teaching.

The formation of theoretical knowledge about the essence, structure and forms of the educational process occurs during the study of disciplines "Pedagogical skills", "Pedagogical acmeology", "Engineering pedagogy" (optional).

Practice of practical skills of the post-graduate student to carry out development of educational and methodical maintenance and carrying out of lecture, seminar (practical) employment, occurs directly during passing of pedagogical practice.

Pedagogical practice takes place within the disciplines of training specialists provided by the department.

## **1. The purpose and objectives of pedagogical practice**

### **1.1 The purpose of pedagogical practice.**

The purpose of pedagogical practice is to deepen and consolidate the knowledge of graduate students on the organization and forms of the educational process in modern conditions, its scientific, educational and methodological and regulatory support, the formation of skills of scientific and information sources in preparation for classes, the use of active teaching methods. profession.

*Integral competence* is the ability to perform the duties of a technical university lecturer.

### ***Pedagogical competencies***

*Ability:*

- to search, process and analyze information from various sources. (ZK 02);
- work in an international context (ZC 03);
- ensure continuous self-development and self-improvement (ZC 05);

### ***Professional and didactic competencies***

*Ability:*

perform original research, achieve scientific results that create new knowledge in the field of avionics and related interdisciplinary areas and can be published in leading scientific journals in avionics and related fields (FC 01).

## **1.2. The main tasks of pedagogical practice**

According to the requirements of the educational and scientific program, postgraduate students after passing pedagogical practice must demonstrate the following results:

**knowledge:**

- advanced conceptual and methodological knowledge in avionics and on the borders of subject areas, sufficient for conducting scientific and applied research at the level of the last 6 world achievements in the relevant field, gaining new knowledge and / or innovation (ZN 1);

- professional terminology for presentation and discussion with specialists and non-specialists of research results, scientific and applied problems of avionics in state and foreign languages, qualified reflection of research results in scientific publications in leading international scientific journals (ZN 2);

**skills:**

- to summarize the results of scientific research in the form of scientific and technical reports, articles, abstracts, monographs, as well as to transfer their knowledge, decisions and the basis for their adoption to specialists and non-specialists in a clear and unambiguous form. (UM 6);

- organize and implement international scientific and technical projects, including in a foreign language (UM 7).

**have an idea of:**

- methods of compiling control tasks and tests in the discipline and complex control tasks in the specialty;

- the possibility of using computer technology in the educational process;

- didactic principles of construction of electronic textbooks.

**Prerequisites and post-requisites of the discipline (place in the structural and logical scheme of education according to the relevant educational program)**

**The content of pedagogical practice**

**Organizational stage**

Duration of pedagogical practice - two weeks. Pedagogical practice begins with an introductory conference, which is attended by graduate students, interns from the Department of CSFV. The place of postgraduate practice is the graduating department CSFV IAT Sikorsky KPI.

Postgraduate students are acquainted with the order of the rector, the program and tasks of practice, the duration of working hours in practice, internal regulations and safety rules, which are recorded in the record of safety briefing and reporting form.

At the first stage, graduate students get acquainted with the regulations governing the organization of the educational process in higher education; with the structure and system of organization of the educational institution and the department where they will undergo pedagogical practice; with the system of educational work of the department, features of methodical, scientific and organizational work of teachers of the department,

with the student audience with which they will conduct classes, attend classes of teachers, prepare their own schedule and inform the head of practice.

### **Pedagogical stage**

The main stage of pedagogical practice of graduate students involves the performance of the following tasks:

- planning by the graduate student of own teaching activity;
- consultations with the head of practice from the Department of Psychology and Pedagogy;
- preparation for classes (preparation of plans-summaries of training sessions and their methodological support);
- conducting classes, self-analysis, detailed analysis and discussion of the lesson;
- attending classes of graduate students-trainees;
- psychological and pedagogical analysis and discussion of classes attended.

During the pedagogical practice of the graduate student it is necessary to prepare and conduct:

- one lecture;
- one seminar / practical lesson.

The structure and content of each lesson must meet the requirements for the appropriate form of organization of training, as well as meet the thematic working curriculum of the credit module. Before the lesson (2-3 days) the graduate student agrees and approves with the head of practice from the Department of Psychology and Pedagogy lesson plan. After each lesson conducted by the graduate student, a psychological and pedagogical analysis of the classes attended, a detailed discussion should be conducted, which should reveal the advantages and disadvantages of the lesson.

These types of classes are conducted by graduate students according to the schedule in the assigned academic group according to the established schedule. The head of the internship and other post-graduate interns must be present at the postgraduate classes.

Also during the pedagogical practice of the graduate student it is necessary to attend classes conducted by other graduate students-trainees in the following number:

- 2 lectures;
- 2 seminar (practical) classes.

After attending each class conducted by other graduate students, their discussion and thorough psychological and pedagogical analysis takes place, as a result of which the advantages and disadvantages of the class are revealed. Postgraduate interns who were present, the head of practice from the Department of Psychology and Pedagogy take part in the discussion and analysis of the classes.

Also, graduate students study the experience of knowledge control in various forms (testing, modular tests (boundary certification), tests, exams) - get acquainted with the tasks available at the department for their implementation.

## The final stage

At the third, final stage of the internship there is a final conference with a discussion of the results of classes, preparation of a report by graduate students on the results of the internship, its defense and credit.

## Tasks and content of educational activity of the head of pedagogical practice

The general management and control over the postgraduate internship is entrusted to the head of the internship from the Department of CSFV. Experienced teachers of the Department of CSFV are involved in the educational and methodical guidance of the practice.

Heads of pedagogical practice provide:

1. Educating graduate students a lasting interest in the teaching profession, the need for professional and pedagogical self-education.
2. Consolidation, deepening and synthesis of professional, psychological and pedagogical, methodological knowledge and language skills in the process of solving specific educational tasks.
3. Familiarization of the graduate student with the current state of educational work in higher educational institutions.
4. Development of a creative, research approach to the pedagogical activity of a teacher in high school.

## Educational content

### Methods of mastering the discipline (educational component)

Names of sections and topics	Distribution of hours		
	Total	classroom	IWS
<b>Organizational stage</b>	10		10
Topic 1. Acquaintance with the normative documents regulating the organization of educational process in higher educational institutions	2		2
Topic 2. Acquaintance with the structure and system of organization of the Department of CSFV ; with the system of educational, methodical, scientific and organizational work of teachers of the Department of CSFV.	4		4
Topic 3. Development of an individual schedule of training sessions and attendance of postgraduate trainees	4		4
<b>Pedagogical stage</b>	40	12	28
Topic 4. Preparation of plans-summaries of training sessions, their coordination and approval with the head of practice from the Department of CSFV	20	-	20
Topic 5. Conducting open classes for graduate students (2 lectures and 2 seminars // practical classes)	8	-	8

Topic 6. Self-analysis and discussion of the classes with the head of practice from the Department of CSFV and other graduate students	2	2	-
Topic 7. Attending classes of graduate students-interns (2 lectures and 2 seminars / practical classes)	8	8	-
Topic 8. Discussion of the results of open classes	2	2	-
<b>The final stage</b>	10	2	8
Topic 9. Preparation of a report on the results of the internship	8		8
Topic 10. Credit lesson. Protection of the report on the results of the internship	2	2	-
<b>Total hours</b>	60	16	44

### Training materials and resources

#### Regulations:

1. Закон України про вищу освіту. Закон від 01.07.2014 № 1556-VII [Електронний ресурс]. – Доступний <http://zakon1.rada.gov.ua/laws/show/1556-18>
2. Роз'яснення МОН щодо деяких питань практичної реалізації положень нового Закону України «Про вищу освіту»: [Електронний ресурс]. – Режим доступу: [http://www.kmu.gov.ua/control/publish/article?art\\_id=N247526620](http://www.kmu.gov.ua/control/publish/article?art_id=N247526620).
3. Моніторинг інтеграції української системи вищої освіти в Європейський простір вищої освіти та наукового дослідження: моніторинг, дослідж. : аналіт. звіт / Міжнарод. благод. фонд «Міжнарод. фонд дослідж. освіт, політики»; за заг. ред. Т.В. Фінікова, О.І. Шарова. – К. : Таксон, 2014. – 144 с.
4. Стратегія реформування вищої освіти в Україні до 2020 року (проект). – [Електронний ресурс]. – Режим доступу: [http://www.mon.gov.ua/img/zstored/files/HE%20Reforms%20Strategy%202011\\_11\\_2014.pdf](http://www.mon.gov.ua/img/zstored/files/HE%20Reforms%20Strategy%202011_11_2014.pdf).
5. Положення про навчання студентів та аспірантів, стажування наукових і науково-педагогічних працівників у провідних вищих навчальних закладах та наукових установах за кордоном, затверджене Постановою Кабінету Міністрів України від 13 квітня 2011 року № 411 – [Електронний ресурс]. – Режим доступу: <http://zakon4.rada.gov.ua/laws/show/411-2011-%D0%BF>.
6. Національна доктрина розвитку освіти України у XXI столітті // Освіта України, 2001, № 29.

#### Basic literature:

1. Положення про організацію освітнього процесу в КПІ ім. Ігоря Сікорського. – 2017.

2. Головенкін В.П. Інженерна педагогіка (електронне видання): Підручник. – К.: НТУУ «КПІ ім. Сікорського», 2017. [Електронний ресурс]. – Режим доступу: <http://www.kpi.ua/>.
3. Стандарти вищої освіти НТУУ «КПІ»: Рекомендації до розроблення [Текст] / Уклад. В. П. Головенкін. – К. : НТУУ «КПІ», 2016. – 39 с.
4. Освітні програми НТУУ «КПІ»: Рекомендації до розроблення [Текст] / Уклад. В. П. Головенкін. – К. : НТУУ «КПІ», 2016. – 40 с.
5. Методичні рекомендації до складання програм навчальних дисциплін та робочих програм кредитних модулів [Текст] / Уклад. В. П. Головенкін. – 4-е вид., перероб. і доп. – К. : НТУУ «КПІ», 2014. – 28 с.
6. Аніловська Г.Я. Університетська освіта : навч. посіб. / Г.Я. Аніловська, Н.С.Марушко, Л.М. Томаневич. – 2-ге вид., перероб. і доп. – Львів : «Магнолія- 2006». – 2010. – 375 с.
7. Артемова Л.В. Педагогіка і методика вищої школи : навч.-метод. посіб. / Л.В. Артемова. – К. : Кондор, 2012. – 272 с.

#### **Additional literature:**

1. Артемова Л.В. Педагогіка і методика вищої школи: навчально-методичний посібник. – К.: Кондор. – 2008. – 272 с.
2. Ортинський В. Л. Педагогіка вищої школи: навч. посібник / В. Л. Ортинський. – К. : Центр учбової літератури, 2009. – 472 с.

### **Policy and control**

#### **Requirements for reporting documentation**

After passing the pedagogical practice, graduate students submit the following documents:

1. General report on the internship with a plan of internship, signed by the head of the internship from the Department of Glass (Annex A, B).
2. Feedback from the head of practice from the Department of Glass.

The report on the pedagogical practice must have information on the implementation of all sections of the practice program in accordance with the individual plan of the graduate student. The report must be signed and evaluated by the supervisor. The report must provide a quantitative and qualitative analysis of the work done.

The report should consist of an introduction, main part, conclusions, list of sources used and appendices.

The main part contains 3 sections:

- acquaintance with the organization of the educational process in higher education. The section should provide a description of the documents that guide the department in its current work, a brief description of the law of Ukraine on higher education.

- independent training by a trainee. Provide a grid of classes (Appendix B.2), methodological development of classes (lecture content, lecture text, list of sources used; content of seminar (practical) classes, course, assignments for independent work, list of sources used);

review - a response to the lesson of the head of practice; methodical development, which includes test or control tasks from seminars or practical classes.

- self-analysis and assessment of the quality of own classes and two classes conducted by postgraduate trainees. Conduct testing according to the Leontief method of two graduate students (Appendix B, Table B.3). Answer the questions of the questionnaire (Appendix D).

The results of pedagogical practice are discussed and approved at a meeting of the Department of CSFV.

### **Course policy (educational component)**

**Grading policy (missed classes, practice of passes):** each grade is given in accordance with the criteria developed by the teacher and announced in advance to graduate students, and is motivated individually at the request of the graduate student; in case the graduate student does not complete all the planned classes, he is not allowed to take the exam; missed classes must be completed. The form and time of work are coordinated by the graduate student and the teacher.

*Policy of academic behavior and integrity (plagiarism, behavior in the audience):* conflict situations should be openly discussed in academic groups with the teacher, it is necessary to be mutually tolerant, to respect the opinion of others. Plagiarism and other forms of dishonesty are not allowed. Inadmissible hints and write-offs during seminars, tests, exams.

*Norms of academic ethics:* discipline; observance of subordination; honesty; responsibility; work in the classroom with disconnected mobile phones.

### **Types of control and rating system for evaluation of learning outcomes (RSE)**

*The following methods and forms of control are used to effectively check the level of mastering by students of higher education of knowledge, skills and abilities in the discipline.*

#### **Forms and methods of control**

The current and final control over the implementation of the internship program by graduate students is carried out by the head of the internship from the Department of Glass.

Pedagogical practice ends with a final conference.

The derivation of the internship grade for each postgraduate intern takes place at the test after completing all tasks in accordance with the plan of pedagogical practice, where the head of the internship from SKLA analyzes and evaluates the postgraduate student's practice, reporting documentation of the graduate student and the results of current control of postgraduate practice.

Each graduate student must submit a package of reporting documentation for the test, which includes:

1. General report on the internship with a plan of internship, signed by the head of the internship from the Department of Glass.
2. Feedback from the head of practice from the Department of CSFV.

The report on pedagogical practice is stored in the individual plan of the graduate student and is considered during certification.



A rating system (RSE) is used to assess the success of graduate students. RSE takes into account:

- development of two plans-summaries of the lecture;
- development of two plans-summaries of seminar (practical) classes;
- conducting these classes;
- review of two attended classes (lecture and seminar);
- preparation and protection of reporting documentation.

System of rating (weight) points

Development of plans-summaries of lectures

Weight score – 14

The maximum number of points for the development of syllabi for lectures is equal to

7 points × 1l. with. = 14 points.

Development of plans-summaries of seminar (practical) classes

Weight score - 14

The maximum number of points for the development of plans-summaries of seminars (practical) classes is equal to

7 points × 1semin./pract. Classes. = 14 points.

Conducting lectures

Weight point - 24 points

The maximum number of points for lectures is equal to

24 points × 1 liter. with. = 24 points.

Conducting seminars (practical) classes

Weight score - 24.

The maximum number of points for conducting seminars (practical) classes is equal to

24 points × 1 s. (pr) with. = 24 points.

Review of two attended classes (lecture and seminar (practical)

Weight score - 6.

The maximum number of points for reviews is equal

6 points × 2 rec. = 12 points.

Preparation and protection of reporting documentation

Weight score - 12.

The maximum number of points for training and defense is equal

12 points × 1 report. = 12 points

Calculation of the rating scale (R)

The sum of weight points of control measures during practice makes:

$R_{pr} = 7 \times 2 + 7 \times 2 + 12 \times 2 + 12 \times 2 + 6 \times 2 + 12 \times 1 = 100$  points

The rating scale is 100 points.

According to the results of pedagogical practice, the graduate student receives the appropriate grades (ECTS and traditional) (table 1)

Table 1 correspondence of rating points to grades on the university scale:

Scores	Rating
100-95	Perfectly
94-85	Very good
84-75	goode
74-65	satisfactory
64-60	Enough
Less 60	Unsatisfactorily
Admission conditions are not met	Not allowed

A graduate student who has not completed the internship program and received an unsatisfactory response from the head of the internship or the head of the department, or received an unsatisfactory grade, is sent to the internship again, he re-transmits the internship according to the established procedure.

**Work program of the discipline (syllabus):**

**Compiled by** Professor, Ph.D. Zbrutsky Olexandr Vasyliovich

**Approved by** the Department of CSFV (protocol № 16 of 12.05. 2021)

**Approved by** the Methodical Commission of IAT (protoco № \_ of \_\_.\_\_.2021)