



# PEDAGOGICAL PRACTICE

## Work program of the discipline (Syllabus)

### Реквізити навчальної дисципліни

Level of higher education	<i>Third (educational and scientific)</i>
Branch of knowledge	16 Chemical and bioengineering
Specialty	162 Biotechnology and Bioengineering
Educational program	Biotechnology
Discipline status	Normative
Form of study	Full-time form of education
Year of preparation, semester	2nd year, fall semester
The scope of discipline	2 ECTS / 60 hours
Semester control / control measures	Credit
Lessons schedule	According to <a href="http://rozklad.kpi.ua/">http://rozklad.kpi.ua/</a>
Language of instruction	Ukrainian
Information about the course leader / teachers	Doctor of Technology., Assoc. Prof., head of department of Industrial Biotechnology Todosiychuk Tetyana Serhiivna 044-204-99-50, <a href="mailto:todosiichuk.ts@gmail.com">todosiichuk.ts@gmail.com</a> Doctor of Technology., prof. Department of Bioenergy, bioinformatics and ecobiotechnology. Golub Natalia Borysivna, 044-204-97-79, <a href="mailto:qolubnb@ukr.net">qolubnb@ukr.net</a>
Course placement	Electronic Campus ( <a href="https://ecampus.kpi.ua/">https://ecampus.kpi.ua/</a> ) <a href="https://classroom.google.com/c/MzI0MTk5OTYwMTI0?cjc=nsgyxvf">https://classroom.google.com/c/MzI0MTk5OTYwMTI0?cjc=nsgyxvf</a>

### Curriculum of the discipline

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

*Pedagogical practice is a necessary condition for the training of graduate students in the educational and scientific program. In the process of pedagogical practice the knowledge of postgraduate students on higher school pedagogy is deepened, the ability to carry out scientific and methodological analysis of curricula of certain disciplines, to make plans-summaries of classes, to conduct various types of classroom classes, to evaluate results of own activity, to improve communicative components of teaching activity. .*

*During pedagogical practice, applicants for higher education develop their own style of teaching. Pedagogical practice promotes the development of professional self-awareness, culture of communication, the formation of theoretical, practical and personal-motivational components of professional competence of trainees.*

**The purpose** of pedagogical practice is the formation of graduate students:

- ability to use modern information technologies, databases and other electronic resources, specialized software in scientific and educational activities (FC 6),
- ability to carry out scientific and pedagogical activities in higher education, use modern educational technologies and organize research of students (FC 7),

- ability to orally and in writing present and discuss the results of research and / or innovative developments in Ukrainian and English, a deep understanding of English-language scientific texts in the field of research (FC 8),
- Acquisition by graduate students of skills and experience of educational and educational-methodical activity, necessary for teaching in higher educational institutions of disciplines in the profile of the received specialty.

**The object** of practice is the educational process of training graduate students in the specialty 162 Biotechnology and Bioengineering.

**The objectives** of the practice are to obtain the following program learning outcomes:

- understand the goals, objectives and methods of educational activities in higher education, be able to choose and structure appropriate educational material, plan and conduct various types of classes, analyze educational and teaching literature and use it in pedagogical practice (PRN 11),
- to organize and manage the cognitive activity of students, to form in students critical thinking and the ability to carry out activities in all its components (PRN 12).

Postgraduate students must also demonstrate the following knowledge:

- methods of activating the cognitive activity of students;
- features of methods of lectures, practical and laboratory classes;
- virtual educational environment as an innovative resource for teaching and research;
- principles of control of students' academic achievements and analysis of its results;
- possession of modern technologies, methods and techniques of teaching disciplines in the relevant field of training doctors of philosophy;
- formulate educational goals and choose the appropriate educational material and its structure.

## **2. Пререквізити та постреквізити дисципліни (місце в структурно-логічній схемі навчання за відповідною освітньою програмою)**

*Successful pedagogical practice requires knowledge of the following disciplines: "Organization of scientific and innovative activities", "Philosophical principles of scientific activity" and "Integration and differentiation of modern scientific knowledge in biotechnology".*

*During the practice to gain new knowledge, skills and abilities mainly in conducting specific lectures and practical classes under the guidance of leading research and teaching staff and apply them in their own teaching practice.*

## **3. The content of the discipline**

- Conducting observations of teachers' performance of various types of educational work with students.
- Development of a plan of practical classes, discussing them with the head of practice, conducting classes in accordance with the plan.
- Development of tasks for independent work, for current control, tests, etc.
- Conducting lectures and practical classes.
- Attendance of lectures and practical classes of leading teachers of the department; discussion with teachers of used methods, methodical findings, etc.
- Attending meetings of the department.
- Preparation of practice materials and report.

## **4. Training materials and resources**

### **Basic teaching resources**

*1. Головенкін, В. П. Педагогіка вищої школи [Електронний ресурс] : підручник / В. П. Головенкін ; КПІ ім. Ігоря Сікорського. – 2-ге вид., переробл. і доповн. – Електронні текстові*

дані (1 файл: 3,6 Мбайт). – Київ : КПІ ім. Ігоря Сікорського, 2019. – 290 с. – Назва з екрана. [Електронний ресурс] – Режим доступу до ресурсу: <https://ela.kpi.ua/handle/123456789/29032>

2. Освітньо-наукова програма третього (освітньо-наукового) рівня вищої освіти з галузі знань 16 «Хімічна та біоінженерія», зі спеціальності 162 «Біотехнології та біоінженерія» / Уклад.: Голуб Н.Б., Дуган О. М., Тодосійчук Т. С., Горобець С. В., Кузьмінський Є.В., Клечак І.Р., Поліщук В.Ю., Київ, КПІ ім. Ігоря Сікорського, 2020, 10 с.

3. Положення про організацію освітнього процесу в КПІ ім. Ігоря Сікорського [Електронний ресурс] – Режим доступу до ресурсу: [https://document.kpi.ua/files/2020\\_7-124.pdf](https://document.kpi.ua/files/2020_7-124.pdf)

4. Педагогічна акмеологія: комплекс навчально-методичного забезпечення аспірантів всіх спеціальностей, очної (денної/вечірньої) форми навчання. Укл.: Ложкін Г.В., Воляннюк Н.Ю. – К. : КПІ імені Ігоря Сікорського, 2016. – 47 с. <http://psy.kpi.ua/aspirantura/metodichki/>

5. Кайдалова Л. Г., Щокіна Н. Б., Вахрушева Т. Ю. Педагогічна майстерність викладача: Навчальний посібник. – Х.: Вид-во НФаУ, 2009. – 140 с. [https://dspace.nuph.edu.ua/bitstream/123456789/1759/1/Book\\_%d0%9f%d0%9c%d0%92.pdf](https://dspace.nuph.edu.ua/bitstream/123456789/1759/1/Book_%d0%9f%d0%9c%d0%92.pdf)

6. Педагогічна практика аспіранта: рекомендації до проходження [Електронний ресурс]: навч. посіб. для здобувачів ступеня доктора філософії спеціальності 162 Біотехнології та біоінженерія / КПІ ім. Ігоря Сікорського; уклад.: Голуб Н.Б., Щурська К.О. – Електронні текстові дані (1 файл: 62,6 Кбайт). – Київ : КПІ ім. Ігоря Сікорського, 2021. – 14 с.

#### **Additional teaching resources**

1. Методичні рекомендації з питань організації практики студентів та складання робочих програм практики Національного технічного університету України «Київський політехнічний інститут імені Ігоря Сікорського» [Текст] / Уклад.: Н. М. Лапенко, І.Л. Співак, І.В. Федоренко, О.М. Шаповалова; за заг. ред. П. М. Яблонського. – К.: КПІ ім. Ігоря Сікорського, 2018. – 29 с.

2. Положення про проведення практики студентів вищих навчальних закладів України [Електронний ресурс] – Режим доступу до ресурсу: [http://kpi.ua/document\\_practice](http://kpi.ua/document_practice)

### **Educational content**

#### **5. Methods of mastering the discipline (educational component)**

##### **1. Organizational and methodological activities of the graduate student**

*The initial stage of pedagogical practice includes:*

- *acquaintance of postgraduate students with the rules of internal regulations and safety, established at the departments of the university in relation to the educational process;*
- *study of the system of educational work of the department and features of methodical, scientific and organizational work of teachers of the department;*
- *acquaintance with the credit-module system of the educational process in the Free Economic Zone;*
- *acquaintance with the student audience with which the trainee will conduct training sessions;*
- *attending lectures, seminars and consultations of at least 2 teachers of the department;*
- *preparation together with the head of the schedule of lectures and seminars and consultations;*
- *drawing up a thematic plan and plans for individual classes and tasks for independent work of the course, which is assigned to teach.*

##### **2. Educational and methodical activity of the graduate student**

*The main stage of pedagogical practice includes:*

- *development of the plan, synopsis and methodical support of the lecture on the chosen course;*
- *development of means of current or modular control;*

- *development of plans-summaries of seminars and their methodological support;*
- *conducting classroom classes by a graduate student according to the established schedule;*
- *conducting individual classes with students in the form of consultations in order to prepare for speeches at seminars, students to perform independent work, as well as scientific work to prepare for participation in competitions and scientific conferences.*

*The graduate student must be attended by a teacher – the head of the practice. After each class conducted by the graduate student, a detailed discussion should be held, which should reveal the advantages and disadvantages of the class. During pedagogical practice, graduate students keep diaries in which they write in any form the content of the work, the results of monitoring the educational process, their own teaching activities, personal impressions of the practice, wishes for its implementation. The diary is the basis for writing a practice report.*

### **3. Organizational and preparatory work for the final control**

The final stage of pedagogical practice includes:

- *preparation of reporting documentation on the internship;*
- *preparation of a test in the form of protection of reporting documentation.*

#### **Calendar plan of practice**

Content of work	Day				
	1	2	3	4	5
<b>1st week</b>					
Drawing up an individual practice plan					
Familiarity with the organization of the educational process of the department					
Attending classes of teachers of the department					
Development of the content of educational classes and methodical preparation					
Independent training					
<b>2nd week</b>					
Development of the content of educational classes and methodical preparation					
Independent training					
Participation in assessing the quality of different types of student work					
Individual work with students					
Preparation of a report on pedagogical practice					

### **6. Самостійна робота аспіранта**

*During pedagogical practice, the graduate student has the opportunity to test the results of research conducted by him when writing a dissertation.*

*Working on the material, graduate students independently:*

- *Develop:*
  - *methodical materials for lectures;*
  - *methodical materials for conducting practical work (computer workshops);*
  - *methodical materials for laboratory work;*
  - *methodical material on preparation and performance of individual tasks;*
  - *Presentation material for classes;*
- *Fill in / lead the Google classroom in the disciplines assigned to them for practice.*

- Form a report on practice.

## Policy and control

### 7. Course policy (educational component)

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

*The internship reporting form is a submission of a written report, signed and evaluated directly by the supervisor from the internship database, and a properly executed internship diary.*

*The internship diary is the main document of postgraduate students during the internship, in which they enter: the content of the individual internship task, the internship schedule, working records on the implementation of the internship program and the individual task. Based on the results of the internship, the diary gives a description-response of the head of the department on the student's implementation of the internship program and an individual task with an assessment of his work, as well as the conclusion of the internship head from KPI. Igor Sikorsky about the internship.*

*The written report should contain information on the graduate student's completion of all sections of the practice program and individual task, conclusions and suggestions, list of references, etc. The report is prepared on A4 sheets, with continuous numbering and bound in a soft folder. The total volume of the report is about 10 pages.*

*The report should consist of the following structural elements:*

- Title page
- Introduction
- Summary
- Review of literary sources (from lectures, from practical classes, from laboratory works)
- Main part
- Conclusions
- References
- Add-ons

*The introduction defines the purpose and objectives of pedagogical practice, the content of the individual task.*

*The main part should contain a report on the results of educational, methodological and organizational-educational work in accordance with the program of practice and individual tasks. Plans-summaries of lectures, practical, seminar classes, protocols of laboratory works, etc. are given separately.*

*The conclusions provide the general results of the performed educational and pedagogical activities, as well as in any form indicate the positive and negative aspects of the practice, provide suggestions for its improvement and efficiency.*

*The list of used literature is a bibliographic description of the used sources, compiled in accordance with the standard DSTU 8302: 2015.*

*Appendices may contain educational and methodical materials: plan-summary of the conducted classroom classes (lectures and seminars) and methodical materials; analysis of attended classes; test tasks for current or modular control.*

*Reporting documentation is submitted for review to the head of practice from KPI. Igor Sikorsky.*

*In case of non-fulfillment by the graduate student of the timely approved calendar plan (without a valid reason) at the meeting of the department a decision may be made not to admit the student to the defense of the internship and his further expulsion from the university.*

*The graduate student is suspended from practice or whose work in practice is considered unsatisfactory, is considered not to have fulfilled the individual plan and according to the Procedure for training higher education candidates for PhD and PhD in higher education (scientific institutions), approved by the Cabinet of Ministers on March 23, 2016 is subject to deduction.*

#### **Assignment of incentive and penalty points**



1. Active work with leading teachers of the department (recommendation from them to provide additional points) +10 points;

2. Late submission of documents – 10 points.

The sum of both penalty and incentive points should not exceed 0.1 RC = 100 points x 0.1 = 10 points.

#### **Policy of deadlines and rearrangements**

Within 2 working days after the end of the internship, the graduate student must provide reporting documentation to the department.

Postgraduate students have the right to challenge the points for the task, but it is obligatory to explain, with which criterion they do not agree according to the evaluation letter and / or remarks.

#### **Academic integrity**

The policy and principles of academic integrity are defined in Section 3 of the Code of Honor of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". Read more: <https://kpi.ua/code>.

#### **Norms of ethical behavior**

The policy and principles of academic integrity are defined in Section 2 of the Code of Honor of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". Read more: <https://kpi.ua/code>.

### **8. Types of control and rating system for evaluation of learning outcomes (RSELO)**

The current control of pedagogical practice is carried out by the head of practice from the department in accordance with the calendar plan of practice, work schedule of graduate students at workplaces, etc. The head of the internship monitors the graduate student's adherence to the internship schedule and provides the graduate student with organizational and methodological assistance. He reviews the methodological materials for lectures and seminars planned for the development of the graduate student, must be present at the lectures and seminars conducted by the graduate student. All this is reflected in the response of the head of the internship graduate student.

Semester control is provided in the form of credit. Semester control is carried out at the end of the internship by assessing the holistic systematic pedagogical activities of the graduate student during the prescribed period. The assessment of the graduate student takes into account the level of theoretical training of the future teacher, the quality of practice, the level of mastery of pedagogical skills, attitude to students, accuracy, discipline, quality of documentation and time of its submission.

Based on the results of the internship, the graduate student prepares reporting materials and submits to the department:

- written report on the internship;
- plan-summary of conducted classroom classes (lectures and seminars) and methodical materials;
- analysis of attended classes;
- test tasks for current or modular control;
- diary of pedagogical practice.

The absence of at least one of these documents has the effect of preventing the graduate student from defending the practice and giving him an unsatisfactory grade.

3. The end result of pedagogical practice is the protection of its results before the commission.

### Distribution of points received by graduate students for practice

No.	Type of work	Scores
1	Preparation of lecture notes and presentation material for it	20
2	Methodical instructions (protocols) for practical work (computer workshops)	20
3	Methodical instructions for performance of individual tasks by students	10
4	Correspondence of the content of the report to the internship program (the report is collected and structured in full), performance of the individual task (fully / partially disclosed)	10
5	Presentation to defend the results of practice	10
6	Report and defense of practice	30
7	Penalty / incentive points (not included in the calculation of 100 points for practice)	10
	Total points:	100

*Conditions for admission to the semester control: is the implementation of an individual plan for practice, providing a diary of practice, report on practice and appendices to it (guidelines for lectures / practical work (computer workshops), / individual tasks, feedback from teachers; as well as a starting rating of at least 40% of the RS, ie 40 points*

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

Scores	Rating
100-95	Excellent
94-85	Very good
84-75	Good
74-65	Satisfactorily
64-60	Enough
Less than 60	Unsatisfactory
Admission conditions are not met	Not allowed

### **9. Additional information on the discipline (educational component)**

*During the internship, graduate students gain new knowledge, skills and abilities, mainly during specific lectures and practical classes under the guidance of leading NPP departments. Therefore, the work of graduate students in full-time positions is the most appropriate in comparison with the practice of backups, in fact, outside observers.*

#### **Distance Learning**

*Synchronous distance learning is possible using video conferencing platforms and a distance learning educational platform at the university.*

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

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**Approved** by the departments of environmental biotechnology and bioenergy protocol № 12\_\_\_ from 12.06.\_\_\_\_\_2020 year.)

**Agreed** by the Methodical Commission of the Faculty of Biotechnology and Biotechnology (protocol № 2 from 23.10.\_\_\_\_\_2020 year.)