



Practice

Syllabus of the academic discipline (Syllabus)

Academic discipline requirements

Level of higher education	<i>Second (Master's)</i>
Discipline	<i>13 Mechanical Engineering</i>
Specialty	<i>133 Industrial mechanical engineering</i>
Educational program	<i>Engineering and computer-integrated technologies for designing innovative industry equipment</i>
Discipline status	<i>Required</i>
Form of study	<i>full-time (day)</i>
Year of training, semester	<i>2nd year, fall semester</i>
Scope of the discipline	<i>14 credits</i>
Semester control/control measures	<i>Test</i>
Class schedule	<i>http://rozklad.kpi.ua/Schedules/ScheduleGroupSelection.aspx</i>
Language of instruction	<i>Ukrainian</i>
Information about course leader/teachers	<i>Supervisors of Master's Theses</i>
Course placement	<i>https://ci.kpi.ua/uk/syllabuses/#place</i>

The purpose and objectives of the practice

The purpose of the academic discipline.

The purpose of the academic discipline is to develop students' competence in:

- *The ability to generate new ideas (creativity).*
- *The ability to think systematically.*
- *Ability to achieve set goals.*
- *Ability to apply professional knowledge to conceptualize engineering solutions;*
- *Ability to prepare initial data for the selection and justification of scientific, technical and organizational decisions;*
- *Ability to use knowledge to analyze engineering products, processes and methods; ability to select and apply appropriate analytical and mathematical modeling methods;*
- *Ability to provide modeling of technical objects and technological processes using standard packages and tools for automating engineering calculations, conduct experiments using specified methods with processing and analysis of results;*

The main objectives of the academic discipline.

After mastering the academic discipline, students must demonstrate the following program learning outcomes:

- *knowledge of the structure and production programs of the workshop, design bureau, department, laboratory; features of the technological process, design and development or research works, regularities of calculation, design, operation, repair of the main technological equipment; technical and economic indicators of the work of the workshop, department, design bureau, laboratory; measures on safety, labor protection, fire prevention, production ecology.*

1. Organization of internship

1. The head of a professional pre-higher education institution is responsible for organizing and conducting practical training for applicants for professional pre-higher education. Measures related to the organization of practical training are determined by orders of the head of the professional pre-higher education institution.

2. The general organization of the internship and control over its implementation in the educational institution is carried out by the head of the internship of the educational institution (deputy director or head of educational and industrial internship), who is appointed by order of the head of the institution of professional pre-higher education.

3. Educational and methodological guidance and implementation of the practical training program are provided by responsible cyclical commissions, which are determined by order of the head of the institution of professional pre-higher education.

4. Direct supervision of the internships of applicants for professional pre-higher education is carried out by the internship managers from the educational institution, who are determined by the order of the head of the institution of professional pre-higher education, and (except for internships in structural units of the institution of professional pre-higher education) by the internship managers from the internship base, who are determined by the management of the internship bases in accordance with the agreement on practical training for applicants for professional pre-higher education.

5. Pedagogical and scientific-pedagogical employees of the institution of professional pre-higher education are involved in the management of the practice from the educational institution. Preference in the appointment of practice managers from the educational institution is given to experienced employees of responsible cycle commissions. The tasks of the practice manager from the educational institution are determined by the Regulations on the organization of the educational process in the institution of professional pre-higher education, and his powers on the basis of practice are determined by the agreement on the implementation of practical training of applicants for professional pre-higher education.

6. The rights and obligations of practice managers from the practice base are determined by the contract on practical training of applicants for professional pre-higher education.

7. The institution of professional pre-higher education provides applicants for professional pre-higher education with places for practical training in accordance with educational and professional programs and agreements on practical training of applicants for professional pre-higher education. In the case of practical training in a structural unit of an institution of professional pre-higher education, the obligation to ensure safe and harmless working conditions lies with the head of the educational institution. During practical training, it is prohibited to use the work of applicants for professional pre-higher education for purposes not provided for by the educational and professional program.

8. Applicants for professional pre-higher education may undergo practical training through on-the-job training in the process of performing their duties. The educational institution may credit practical training in the procedure for recognizing learning outcomes specified in the educational and professional program, which are obtained during the applicant's employment during or before the start of training.

9. The duration of working hours of a student of professional pre-higher education during training practices should not exceed 36 academic hours per week, during production practices - the duration of the working day taking into account the age of the students in accordance with the legislation. During the practice, students are fully subject to the internal labor regulations of the practice base.

10. During the internship, the academic group may be divided into subgroups of at least 8 people.

11. Practical training of applicants for professional pre-higher education with special educational needs is carried out taking into account their individual needs and capabilities.

2. Content of the academic discipline

Section 1. Safety and occupational health

Topic 1.1. Safety and occupational health at the practice site

Topic 1.2. Safety and occupational health in the unit

Topic 1.3. Safety and health at work

Topic 1.4. Study of the ecological foundations of environmental protection

Section 2. General information about the object of practice

Topic 2.1. Study of the work of the main structural divisions, the organization of their production and research activities

Topic 2.2. Study of the features of work and the range of production, research and development tasks, the solution of which is being worked on by a separate structural unit

Topic 2.3. Study of technical and economic indicators of the efficiency of the unit

Section 3. Working on an individual assignment

Topic 3.1. Preparation and study of materials for an individual assignment

Topic 3.2. Verification of the provisions of mathematical and physical modeling and the scientific novelty of the proposed solutions.

Topic 3.3. Conclusions and recommendations on the methodology for calculating processes and equipment of the selected scientific direction

3. Individual tasks

Individual tasks are determined by the internship supervisor depending on the topic of the dissertation and must take into account the specifics of the topic.

4. Educational materials and resources

4.1 Basic

- 1. Pre-diploma practice [Electronic resource]: rec. to practice in a distance learning format: teaching aids for students of the master's degree in the educational program "Engineering and computer-integrated technologies for designing innovative industry equipment" spec. 133 "Industrial mechanical engineering" / A.R. Stepaniuk; Igor Sikorsky Kyiv Polytechnic Institute. – Electronic text data (1 file). – Kyiv: Igor Sikorsky Kyiv Polytechnic Institute, 2024. – 44 p. . (Full text, pdf, 0.96 Mb)*
- 2. DSTU 300895 Documentation. Reports in the field of science and technology Structure and rules of design*

1. Educational content

5. Student's independent work

Independent work constitutes 100% of the study of the credit module, which also includes preparation for the test. The main task of students' independent work is to deepen their worldview and scientific knowledge in the areas by searching for the necessary information, developing perseverance and creative search in the formation of working hypotheses to intensify the transfer processes.

Policy and control

6. Academic discipline policy (educational component)

Rules for assigning incentive and penalty points

- Incentive points can be awarded by the teacher exclusively for the completion of creative works and working hypotheses.
But their sum cannot exceed 10% of the rating scale.*
- Penalty points are not provided within the framework of the academic discipline.*

Deadline and Rescheduling Policy

In the event of academic arrears in an academic discipline or any force majeure circumstances, graduate students should contact the teacher to agree on an algorithm of actions related to solving existing problems.

Academic Integrity Policy

Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the lack of references when using printed and electronic materials, quotes, opinions of other authors. Hints and copying when writing tests or conducting classes are unacceptable.

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". More details:<https://kpi.ua/code>

Academic Conduct and Ethics Policy

Graduate students must be tolerant, respect the opinions of others, formulate objections in a correct form, and adequately provide feedback in class.

The norms of ethical behavior of students and employees are defined in Section 2 of the Code of Honor of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". More details:<https://kpi.ua/code>

7. Types of control and rating system for assessing learning outcomes (RSO)

Distribution of study time by types of classes and tasks in the discipline according to the working curriculum:

Semester	Study time		Distribution of teaching hours				Control measures		
	Loans	academic year	Lectures	Practical	Lab work	CRC	MKR	RR	Semester control
12	14	420	-	-	—	420	-	—	test

A student's rating in a discipline consists of the points he receives for:

Work on the report and test.

The semester test is a credit.

Rating (weighting) points system and evaluation criteria

Rating points system and evaluation criteria:

Report execution and report protection

$$R = 20 + 80 = 100 \text{ points}$$

The maximum score is 100. To receive credit for the automatic credit module, you must have a rating of at least 60 points.

A prerequisite for admission to the test is a rating of at least 40% of the rating scale (R), i.e. 40 points.

Students who have scored less than 0.6 R during the semester, as well as those who want to increase their overall rating, take a credit test. In this case, all the points they received during the semester are canceled. The test tasks contain questions that relate to different sections of the credit module. The list of credit questions is given in Section 9.

To obtain a credit score, the sum of all rating points R obtained during the semester is converted according to the table:

Number of points	Rating
95...100	Perfectly
85...94	very good
75...84	Good
65...74	Satisfactorily
60...64	Enough
RD < 60	Unsatisfactorily
Admission conditions not met	not allowed

The working program of the academic discipline (syllabus):

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Approved by the Department of the Institute of MACORI (Minutes No. 20 dated 12.06.2025)

Approved by the Methodological Commission of the Faculty (Minutes No. 11 dated 06/27/2025)