

**UKRAINE**

**REGULATION OF THE  MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE**

**NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
“IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE”**

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**Faculty (Institute) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 APPROVALS:

 \_\_Yaroslav Kornaga\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Dean of the Faculty/

 Director of the Institute

 Date: “\_\_\_” \_\_\_\_\_\_\_20 \_\_\_ STAMP

 CONCURRENCE:

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| --- | --- |
| Chief specialist of the company:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_Date: “\_\_\_” \_\_\_\_\_\_\_20 \_\_\_ STAMP | Head of Department\_\_ Oleksandr Rolik\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_Date: “\_\_\_” \_\_\_\_\_\_\_20 \_\_\_ STAMP |

SYLLABUS

\_\_\_\_\_ pre-diploma practice\_\_\_\_\_\_\_\_\_\_ internship of \_\_\_6\_\_year students

 (type of internship)

Speciality \_ Information Systems and Technologies \_\_\_

\_\_\_\_Educational program Dataware of Robotic Systems\_\_

Host organisation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

from “\_01\_”\_09\_\_ to “\_\_26\_\_”\_10\_\_\_\_\_2024\_

1. **Introduction**

Pre-diploma practice for students of the "Information systems and technologies" specialty of the educational and professional program "Dataware of Robotic Systems" is conducted in accordance with the curriculum. During the course of pre-diploma practice and completion of the main tasks of the practice program, each student must obtain specific results on the topic of the master's thesis.

The pre-diploma student internship program consists of the following parts:

* study and generalization of scientific and scientific-methodological sources on the subject of the master's thesis;
* independent analysis of modern approaches to solving tasks and problems, which is the object of a master's thesis. Students are required to collect and process practical and informational material, select and process statistical data on the chosen topic;
* completion of an individual task, preparation of a report on completion of pre-diploma practice and its defense.

**Duties of the person responsible for pre-diploma practice from the department**

The person responsible for pre-diploma practice in the department is appointed by the head of the corresponding department.

The main duties of the person responsible for pre-diploma practice from the department are:

* organizing and conducting orientation meetings for students of the department (including instruction on safety and occupational health and safety) and providing them with the necessary documents before starting practice;
* ensuring the timeliness of students' formation of individual practice schedules and their receipt of individual tasks from direct supervisors;
* timely holding of orientation meetings for pre-diploma practice, familiarization of students with the requirements for registration of practice documentation, reporting system and assessment criteria for practice, which are regulated by the relevant normative and methodical documentation on the organization and conduct of practice.
* advising students on the terms and procedure of practice, preparation of practice documents and protection of the report;
* ensuring the timely submission by students to the department of pre-diploma practice reports and other documents necessary for defense, their verification and visa;
* timely organization and conduct of practice protection;
* reporting on the results of practice at the department meeting.

**Responsibilities of the head of practice from the enterprise**

Head of practice from the enterprise:

* organizes workplaces for intern students and introduces students to the organization of work;
* conducts safety training;
* conducts tours at the enterprise;
* monitors students' compliance with the rules of internal labor regulations, labor discipline and safety rules;
* compiles a schedule of students' practice;

The head of practice on behalf of the enterprise is obliged to:

* to place students in workplaces, to provide instruction on safety and occupational health and safety;
* comprehensively promote students' compliance with the schedule and implementation of the practice program, advise students, involve them in the performance of production tasks;
* take the necessary educational and administrative measures against students who violate the rules of the internal labor regulations of the enterprise and report this to the head of the university;
* read students' reports. Provide feedback in the diary about the results of the internship and the preliminary assessment.

**Students of the department are required to complete pre-diploma practice**:

* before the start of the practice at orientation meetings, and then individually, receive consultations from the head of the practice regarding the preparation of all necessary documents;
* arrive at the practice base in a timely manner (no later than the date specified in the referral);
* systematically work on tasks according to the practice program,
* fully perform all the tasks provided for by the internship program, specified in the individual internship schedule and direct instructions of the manager;
* strictly observe the working day regime, rules of internal procedure, labor protection. safety techniques that operate on the basis of practice;
* to be responsible for the work done;
* to constantly maintain contacts with the department and to appear for interim control at the deadline appointed by the head of practice from the department;
* highlight the results of the work performed and issue them in the report on the completion of practice in accordance with the established and current requirements of the department for the structure and design of the report;
* submit reporting documents to the department in a timely manner and defend practice materials before the commission in due time.
1. **Purpose and tasks of practice**

The purpose of pre-diploma practice is to provide students with in-depth theoretical and practical knowledge, skills in information systems and technologies, which will allow to complete and defend a master's thesis, contribute to the graduate's mobility in the labor market, and also allow to effectively perform tasks of the appropriate level of professional activity, which are oriented to research , solving the problems of design, development, deployment, integration, testing, implementation and operation of Dataware of Robotic Systems in various fields of economic activity.

The main tasks of pre-diploma practice are to acquire the following knowledge and skills:

Knowledge:

• methods of interaction in the team of performers, researchers;

• modern information technologies and information environments;

• methods of information systematization;

• norms of professional, business and communication;

• methodologies and technologies for designing and implementing information systems;

• information systems design processes and standards;

• modern IT environment;

• existing means of components and technologies for building information technologies;

• specialized programming languages ​​and technologies;

• principles of organization, functioning and development of information technology infrastructure;

• software system deployment technologies andversion creation of software;

• methods of developing mathematical models of objects, methods of modeling multidimensional systems using modern applied software packages;

• modern technical and software tools for building and implementing computer systems.

Skills:

• to use modern information design and implementation technologiessystems, choose existing components, tools and technologies for building information systems;

• use IT infrastructure management technologies, select components of the existing IT infrastructure to build a new infrastructure;

• automate the processes of deployment of IT infrastructure and necessary software;

• choose means of building components andinformation control systems, implement control algorithms using modern programming technologies;

• communicate in English, collect and process professional and scientific information from foreign language sources;

• work with scientific, scientific and technical literature and scientific periodicals.

1. Organization of practice

Students are sent to practice according to the order of the university. The order determines the type of internship, the terms and place of the internship, the distribution and confirmation of students according to the supervisors of the internship from the departments, etc.

When starting practice, the student must receive instruction on practice and safety techniques at the department in advance. Students are instructed during orientation meetings. Orientation meetings are intended to acquaint students with the requirements for the internship and the necessary documents. During the first meeting (1-2 calendar days before the start of practice), students are provided with sample documents for registration (such a list of documents may include: a referral letter for practice, a practice schedule, a curriculum and methodological instructions for practice, etc.) . In the event that the student independently chooses the object of practice, the indicated procedure for referral to practice must be clearly observed.

1. Content of practice

The content of the practice should ensure the fulfillment of the goals and tasks specified in the program.

Before starting practice, each student receives an individual assignment for the practice period.

The individual task of pre-diploma practice is formed in accordance with the direction of activity of the enterprise, organization or institution that is the base of practice, the direction of research by topic master's thesisand must meet the requirements of the specialist's educational and qualification characteristics.

The following tasks are mandatory for each student: review and analysis of existing solutions on the topic of the taskmaster's thesis; description of the subject environment; definition of development goals and objectives; definition of input and output data; determination of methods and means for solving the task; description of the structure of the database; determination of the structure of information arrays; system or subsystem development; development of the information base; detailed design of system elements; description of the activity process; creation of design and technical documentation according to state standards.

Full name of the student, group

Topic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Individual task \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Internship Schedule**:

|  |  |  |
| --- | --- | --- |
| No | Content | Deadline |
| 1. | Arrival of a higher education student for practice, | 01.09.23 |
|  | registration and receipt of passes |  |
| 2. | Conducting safety training | until 03.09.23 |
|  | and labor protection |  |
| 3. | Implementation of the practice program and | Throughout the entire practice |
|  | individual task according to the topic |  |
|  | (with a weekly check) |  |
| 3.1 | Task 1 | until 05.09.24 |
| 3.2 | Task 2 | until 10.09.24 |
|  |  |  |
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| … |  |  |
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|  |  |  |
|  |  |  |
| 3.N | Task N | until 22.10.24 |
| 4. | Designing a diary, report and compilation | until 26.10.23 |
|  | credit from practice |  |

1. **Report requirements**

The main documents that testify to the student's implementation of the pre-diploma practice program are the written report. The content of the report should reveal the student's knowledge and skills, acquired by him in solving the issues determined by the goal and task of the practice.

The report should include:

1. draft content of the master's thesis.
2. a brief overview of existing solutions.
3. a brief overview of its own implementation, a list of used methods, algorithms, tools.

Before submission for defense, the report is approved by the supervisor of the master's thesis.

The report is written in Ukrainian without stylistic, spelling and syntactical errors. The total volume of the practice report should not exceed 30 pages of printed text. Compilation of the report in accordance with the standard of the department "Compilation of text documents in the educational process".

1. **Forms and methods of control**

The main tasks of the pre-diploma internship are reflected in the internship diary, which is kept according to the form approved by KPI named after Igor Sikorsky.

The student makes notes in the diary, i.e. records the content and scope of the work performed, as well as its results, during the entire practice. The actual implementation is certified by the head of practice from the enterprise. The diary is provided weekly for review by the head of practice from the department.

The result of the practice should be obtaining results that will be used in the further development of the intern, will be included in the basis of writing a master's thesis. The results are drawn up in the form of a report on pre-diploma practice. At the end of the internship, the manager of the enterprise prepares feedback on the implementation of the internship program.

The written report, together with the practice diary, is submitted for review to the immediate supervisor of the practice from the department. The report submitted to the department in accordance with the established procedure at the department is checked by the head of practice from the department. If the results of the inspection of the report reveal its compliance with the established requirements, the report is recommended for defense before the commission. In the case of unfulfilled works, non-compliance with the requirements of the faculty, the report is sent for revision.

Based on the results of checking the report, the direct head of practice from the department writes a general review and determines the assessment with which the report is recommended for defense before the commission. The assessment of the head of the practice is only of a recommendatory nature and does not include a mandatory assessment of the defense for the commission.

Summarizing the results of the pre-diploma practice takes place in the form of a credit.

Attestation of practice results is carried out on the basis of a written report and a diary prepared in accordance with established requirements, and feedback from the practice manager. Based on the results of the certification, a differentiated assessment is issued. The assessment is determined taking into account the timeliness of the submission of the necessary documents from the practice, the quality of the prepared report, the completion of the individual task, the level of knowledge and the level of protection of the student according to a differential scale ("excellent", "very good", "good", "satisfactory", "sufficient", "unsatisfactory") and a stobal scale that characterizes the student's success.

1. **Evaluation criteria**

The pre-diploma practice rating has two components. The first (starting) characterizes the student's work on an individual task and its result - the quality of the report and diary. During the internship, the student submits a completed internship for verification once a week. A fully completed diary and report are provided before the assessment. The second component characterizes the quality of the student's defense of the report.

The size of the scale of the first component is equal to 40 points, and the second component is60 points.

**The first component is assigned according to the following criteria:**

* + - timeliness of tasks according to the calendar plan:

"excellent", tasks were performed in full according to the calendar plan - 5 points;

"good", tasks were generally performed according to the calendar plan, with some minor delays - 4 points;

"satisfactory", tasks were systematically performed with minor delays - 3 points;

"fail", tasks were performed according to the calendar plan with significant (several days or more) delays - 0-2 points.

* + - modernity and justification of the decisions made:

"excellent", decisions regarding the implementation of tasks were carried out with full justification and using modern methods - 11-12 points;

"good", decisions regarding the implementation of tasks were carried out using modern methods, but with insufficient justification - 9-10 points;

"satisfactory", decisions regarding the implementation of tasks were carried out using modern methods, but without justification - 7-8 points;

" fail ", outdated and ineffective methods were offered to solve the problems - 0-6 points.

* + - writing technical documentation:

"excellent", the documentation fully covers the assigned tasks and meets the requirements - 10 points;

"good", the documentation corresponds to the task, there are minor shortcomings - 8-9 points;

"satisfactory", the documentation corresponds to the task, but there are shortcomings - 6-7 points;

" fail ", the documentation does not meet the requirements - 0-5 points.

* + - design quality, compliance with the requirements of regulatory documents:

"excellent", the design of the report fully meets the cathedral requirements - 6 points;

"good", the design of the report meets the cathedral requirements, there are minor shortcomings - 5 points;

"satisfactory", the design of the report partially meets the cathedral requirements, there are shortcomings - 4 points;

" fail ", the design of the report does not meet the cathedral requirements - 0-3 points.

* + - quality of graphic material and compliance with standards - 7-4 points.

"excellent", the design of the report fully meets the cathedral requirements - 6 points;

"good", the design of the report meets the cathedral requirements, there are minor shortcomings - 5 points;

"satisfactory", the design of the report partially meets the cathedral requirements, there are shortcomings - 4 points;

" fail ", the design of the report does not meet the cathedral requirements - 0-3 points.

**The second component (report protection) is issued according to the following criteria:**

* + - degree of mastery of the material:

"excellent", complete answer (at least 90% of the required information) - 10 points;

"good", sufficiently complete answer (at least 75% of the required information, or minor inaccuracies) - 8-9 points;

"satisfactory", incomplete answer (at least 60% of the required information and some errors) - 6-7 points;

" fail ", unsatisfactory answer - 0-5 points.

* + - complete analysis of existing solutions:

"excellent", complete answer (at least 90% of the required information) - 14-15 points;

"good", sufficiently complete answer (at least 75% of the required information, or minor inaccuracies) - 12-13 points;

"satisfactory", incomplete answer (at least 60% of the required information and some errors) - 9-11 points;

" fail ", unsatisfactory answer - 0-8 points.

* + - degree of substantiation of the decisions made:

"excellent", complete answer (at least 90% of the required information) - 18-20 points;

"good", sufficiently complete answer (at least 75% of the required information, or minor inaccuracies) - 15-17 points;

"satisfactory", incomplete answer (at least 60% of the required information and some errors) - 12-14 points;

" fail ", unsatisfactory answer - 0-11 points.

* + - the ability to defend one's opinion - 15-9 points.

"excellent", complete answer (at least 90% of the required information) - 14-15 points;

"good", sufficiently complete answer (at least 75% of the required information, or minor inaccuracies) - 12-13 points;

"satisfactory", incomplete answer (at least 60% of the required information and some errors) - 9-11 points;

" fail ", unsatisfactory answer - 0-8 points.

The sum of the points scored for the first and second components is converted into a final grade according to the table:

**Table 1 — Conversion 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 | Sufficient |
| Less than 60 | Fail |
| Admission conditions not met | Not allowed |

1. **Recommended reading**

1. Standard of the department "Formation of text documents in the educational process"

2. Halych O. A. Management of information communications and business processes: [Education manual] / O. A. Halych, O. P. Kopishinska, Yu. V. Utkin. - Kharkiv: Finart, 2016. - 244 p.

3. Fabrychev V. A. Information systems and technologies of the enterprise: training. manual / V. A. Fabrychev, V. M. Borovyk. — K.: NAU, 2008. — 100 p.

4. Shakhovska, N. B. Designing information systems [Text]:education study guide higher education incl.: rec. MONU / N. B. Shakhovska, V. V. Lytvyn. - Lviv: Magnolia 2006, 2011. - 380 p.

Assigned supervisor from Igor Sikorsky Kyiv Polytechnic Institute

\_\_\_ Senior lecturer Maryna Khmeliuk \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(occupation, last name, signature)

Mentor of the host organisations \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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