ROMANIAN HIGHER EDUCATION QUALITY ASSURANCE AGENCY
Member of the European Association for Quality Assurance in Higher Education - ENQA
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REPORT
The Romanian Agency for Quality Assurance in Higher Education

the type of assessment
PERIODIC EVALUATION and EUR-ACE® label awarding

Bachelor study programme

Electronic Components and Systems
Faculty of Electronics
The National Technical University of Ukraine „Igor Sikorsky Kyiv Polytechnic Institute"

Bachelor's field - Electronics and Telecommunications
Form of education – full time

13.07.2023

▸ GENERAL CONSIDERATIONS

Through the application registered with the Romanian Agency for Quality Assurance in Higher Education, with no. 7055, from the date of 16.12.2021, the **The National Technical University of Ukraine „Igor Sikorsky Kyiv Polytechnic Institute"** requests the periodic evaluation and granting of the EUR-ACE certification for the bachelor study programme **ELECTRONIC COMPONENTS AND SYSTEMS** from the Faculty of **Electronics**.

The file was registered at ARACIS with the number 2687 dated 25.04.2023.

The verification of the fulfillment of the mandatory normative requirements, of the criteria, standards, and performance indicators, and of the specific standards was carried out by the Commission of permanent specialized experts – Engineering Sciences II of the ARACIS Council.

The evaluation report was prepared in accordance with the provisions of the External Evaluation Methodology, the standards, the reference standards, and the list of performance indicators of the Romanian Agency for Quality Assurance in Higher Education approved by Government Decision no. 915 of 14/12/2017 regarding the amendment of the annex to Government Decision no. 1.418/2006 and the Guide to the activities of evaluating the quality of university study programmes and higher education institutions, as well as standards and guidelines for EUR-ACE certification®of study programmes in the fundamental field engineering sciences, respectively ofThe external evaluation methodology of study programmes in the field of engineering sciences with a view to the periodic evaluation and granting of the EUR-ACE certification®.

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▸ RESULTS OF THE ASSESSMENT CARRIED OUT BY THE COMMISSION OF PERMANENT SPECIALTY EXPERTS

The following criteria, standards, and performance indicators for the periodic evaluation of the undergraduate university study programme are fullfilled/partially fullfilled /not fullfilled.

Domains, criteria, standards, performance indicators Findings and recommendations	Degree of compliance [1]
DOMAIN A. INSTITUTIONAL CAPACITY	
CRITERIUM A.1 Institutional, administrative, and managerial structures	
Standard A.1.1 Legal organisational and operating framework	

1. The study programme is established and operating according to the law (including with regard to the compliance with the schooling capacity).
    Findings from the Self-Evaluation Report/ Visit:
The educational program of the first bachelor's level "Electronic components and systems" was developed, implemented and operating in accordance with the Law of Ukraine "On Higher Education" (https://zakon.rada.gov.ua/laws/show/1556-18#Text) and the standard of higher education by specialty 171 "Electronics" for bachelor level of higher education (https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/12/21/172-telekom.radiotekhn-bakalavr-VO-zatv.stand.01.11.pdf). The educational program was approved by the protocol dated 13.12.2021 under No.10 of the Scientific Council of National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (NTU KPI) (https://osvita.kpi.ua/sites/default/files/opfiles/171_OPPB_EKS_2022.pdf). NTU KPI has valid license for the providing educational services in the field of higher education (https://kpi.ua/licence) for speciality "Electronics" (license AE № 527265) with the limit of number of students per study year equal to 200.
    Recommendations:
none
	fulfilled

2. *Other requirements provided in the standards specific to the Bachelor's field/ study programme.*[2]
    Findings from the Self-Evaluation Report/ Visit:
    Recommendations:
	Not the case

A.1.2 Mission and aims of the evaluated study programme	
1. The mission and aims of the study programme are in accordance with the mission of the higher education institution and the requirements identified on the labour market.	fulfilled

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[1] **Degree of compliance with the standard**: *compliance/ partial compliance/ noncompliance*

[2] *The degree of compliance with other requirements provided by the specific standards of the ARACIS permanent speciality commission shall be indicated in this item, if applicable*

13.07.2023

	Findings from the Self-Evaluation Report/ Visit: The objectives of the educational program correspond to the development strategy and mission of KPI for 2020-2025 https://osvita.kpi.ua/node/116, https://osvita.kpi.ua/sites/default/files/downloads/2020-2025-strategy.pdf, namely, they contribute to the formation of higher education seekers on the basis of the concept of sustainable development through the internationalization and integration of education, the latest scientific research and innovative developments; create conditions for the all-round professional, intellectual, social and creative development of the personality of the applicants at the highest levels of excellence in the educational and scientific environment. Educational program is constantly updated and modified in order to take into account the requirements of the labor market. During the modernization of the content of the educational program, the wishes and proposals of stakeholders (industrial partners) are taken into account by introducing them to the public discussion of the new version of the educational program. Information about the start and duration of the public discussion (at least one month) is published on the website of the department (http://eds.kpi.ua/?page_id=5040) for the broad involvement of all interested parties **Recommendations:** - none	
2.	The declared programme aims and outcomes are rigorously defined and clearly expressed. They are presented to the candidates and other direct and indirect beneficiaries. **Findings from the Self-Evaluation Report/ Visit:** Educational program goals training specialists capable of successful professional and research-innovative activities in the field of development, design, production, installation, operation, maintenance, repair and modernization of electronic components and systems based on acquired theoretical and practical knowledge and skills, skills, methods thinking, views, values and other personal qualities sufficient for solving complex specialized theoretical and practical problems. The main priorities in the preparation of applicants are: - a high level of mastery of fundamental knowledge, practical skills and soft skills, - the ability to adapt to the requirements of the labor market and technologies, initiative, leadership, the ability to work in a team; - understanding of the main trends in the development of electronics; - competitiveness, the possibility of successful employment in academic and scientific institutions, leading companies of Ukraine and the world. Information about the educational program, its goals and expected results is published on the website of the department http://eds.kpi.ua/?page_id=5040 and is available for review by all interested persons. The program learning outcomes provided for by the OP are entered by the teachers into the syllabuses of the disciplines, which ensure their receipt and thus are brought to the attention of the students (http://eds.kpi.ua/?page_id=7090). **Recommendations:** - none	fulfilled
3.	The name of the study programme is in accordance with its aims, content and outcomes. **Findings from the Self-Evaluation Report/ Visit:** The educational program was developed in accordance with the requirements of the standard of higher education in the specialty 171 "Electronics", approved by the Ministry of Education and Science of Ukraine https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/12/21/ 171-elektronika-bakalavr-VOzatv.stand.01.11.pdf. The name of the educational program generally covers all issues that make up the content of the educational program - concepts and principles of electrical engineering, physical foundations of electronics, information theory, signal processing, computer-integrated technologies, fundamental principles, concepts of construction, modeling, design and optimization of modern electronic components and systems The goal of the OP is to provide fundamental knowledge and the formation of competencies sufficient for the development, creation and work with electronic systems and their components, which is also	fulfilled

	reflected in the title of the educational program. Educational program, by its vocation, functions, program results, training is aimed at ensuring the training of highly qualified electronics professionals for their successful further professional and scientific activities at the world level in the field of applied electronics. **Recommendations:** *none*	
4.	There is consistency between: (i) the programme mission and aims, (ii) the professional profile of the graduates and the activities carried out by students during the study programme (iii) expected outcomes obtained by students during the learning process. **Findings from the Self-Evaluation Report/ Visit:** The purpose, goals, characteristics of the educational program, the positions in which graduates of this educational program can work and the main results expected after the completion of studies under the OP are highlighted in its description, which is posted on the department's website (http://eds.kpi.ua/ ?page_id=5040). Program learning outcomes that students receive during the educational process are based on general and professional competencies that are formed on the basis of the goals and mission of the educational program. The specifics of the graduate profile are discussed with employers, and regular surveys of students will be conducted regarding the expected learning outcomes under the educational program. The results of meetings with stakeholders and student surveys are posted on the department's website (https://forms.gle/R7CUvZQ7PKynpV8q8). **Recommendations:** - none	fulfilled
5.	The higher education institution does regular consultations with the representatives of the academic sector, including students, of the industry sector of the labour market about the programme aims and outcomes. Such consultations take place in an organised arrangement and they are documented. **Findings from the Self-Evaluation Report/ Visit:** The representatives of the applicants are members of the academic council of the faculty and the Higher Education Institution, participate in the development and discussion of the educational program. Representatives of higher education institutions and the educational program support group conduct regular consultations and discussions with stakeholders (including students) regarding the filling and improvement of the program. In particular, discussions are held as part of extended meetings of the department, where representatives of the scientific community (for example, the Institute of Electrodynamics of the National Academy of Sciences of Ukraine), students of the department and other stakeholders are invited. At one of these meetings, the proposals of stakeholders regarding the improvement of the educational program were discussed. The introduction of changes to the OP is also preceded by the holding of methodological seminars of the department, at which the content and content of the disciplines taught within the framework of this OP are analyzed, proposals and ideas are expressed regarding their update, increase of the practical component and other changes in order to take into account modern trends in electronics and approximating the level of preparedness of students to the requirements of the labor market. The basis for such changes is regular conversations with applicants, which are conducted by the guarantor of the educational program, the head and teachers of the graduation department. Only during the 2020/2021 academic year, 5 such seminars were held and this process continues. In addition, a survey of applicants is conducted regarding the level of satisfaction of the educational program at the link: https://forms.gle/R7CUvZQ7PKynpV8q8 In addition to the department's personal contacts with employers, data from sociological surveys regularly conducted by the Center for Sociological Research "Socioplus" are used to assess their satisfaction with graduates for a specific educational program, collecting feedback from employers regarding the qualifications of graduates, the organization of the educational process, and the content of the educational program. The following proposals of the acquirers	partially fulfilled

	are taken into account: 1. At the suggestion of a student NAME REDACTED (group DS-81), material on the structure of DC transmission transformer substations as a promising direction for the construction of power supply systems was added to lecture #9 of the educational component of DC and AC networks with alternative energy sources -2. 2. At the suggestion of student NAME REDACTED (group DS-91) to acquire more in-depth practical skills in setting up and regulating the modes of operation of motors, two laboratory works "Modeling the processes of starting and reversing the motor on the example of an asynchronous machine Asynchronous Machine in the system were introduced into the Electromagnetic Engineering course Simulink" and "Electromagnetic engine control using the example of a Synchronous Machine in the Simulink system" **Recommendations:** - consider to set-up an official board (industrial partners, teachers, stakeholders ..) to participate to the improvement of the educational program, meeting once a year minimum with an official report; - consider to establish a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including the documentation of the proceedings;	
6.	The methodology and timeline of the consultations are adequate to identify the educational needs established by the employers (with their predictable transformations as a result of foresight studies, and development strategies at regional, national and European level). **Findings from the Self-Evaluation Report/ Visit:** Formation and updating of the content of the educational program takes place taking into account the wishes and recommendations of direct participants in the educational process and interested persons (stakeholders). Similar educational programs of higher education institutions of Ukraine and leading foreign universities are taken into account. The method of holding consultation meetings for the purpose of discussing educational programs is well-established and often takes place during informal communication with industrial partners, working meetings, as well as officially at department meetings, methodical seminars, and meetings of the university scientific and methodical commission for specialty 171 "Electronics". Close communication, which has an impact on the further modernization of the educational program, occurs during the students' pre-diploma practice at partner enterprises. Such communication takes place at the level of "head of practice from the department - head of practice from the enterprise" by agreeing on the practice program, weekly tasks and expected results. The acquirer undergoing practice also takes an active part in planning, discussing the content and results of his work **Recommendations:** - consider to establish a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including the documentation of the proceedings	fulfilled
7.	The educational needs established by the employers have contributed to the definition of the programme mission, aims and outcomes. **Findings from the Self-Evaluation Report/ Visit:** The purpose of the educational program is formulated in accordance with the requirements of the modern labor market and potential employers - the training of an electronics specialist capable of solving complex specialized tasks and practical problems of design, production, operation, maintenance, repair and modernization of electronic devices, devices and systems. Taking into account the rapid development of the field to which educational program belongs, an essential requirement for graduates is the ability to quickly adapt to the changing requirements of the labor market, the ability to communicate with employers, generate new ideas, and be able to learn throughout life by updating and modernizing their professional knowledge. This is also expressed in the wording of the training goals - the training of specialists capable of successful professional and research-innovative activities in the chosen field of activity. The main focus of educational program reflects its direction on the formation of the acquirer's ability to identify and solve complex problems in the field of knowledge 17 Electronics and telecommunications, that	fulfilled

is, to be able to analyze the situation, summarize numerous data, facts, systematize them and find solutions. As shown by surveys of employers, the ability to comprehensively solve tasks and offer innovative solutions is one of the first priorities when choosing employees.

The same idea is expressed in the formulation of integral program competence - the ability to solve complex specialized tasks and practical problems characterized by complexity and uncertainty conditions, during professional activity in the field of electronics, or in the process of learning, which involves the application of theories and methods of electronics. Further detail is reflected in the formulations of general and professional competencies and program learning outcomes. In particular, one of the expected results is the ability to apply modern methods for the development of low-waste, energy-saving and environmentally friendly technologies that ensure the safety of people's lives and their protection from the possible consequences of accidents, disasters and natural disasters, to apply methods of rational use of raw materials, energy and other types of resources . For many employers, the issue of environmental friendliness of production is decisive.

It should be noted, that all educational programs in the specialty 171 "Electronics" in Ukraine should contain the requirements (program competences, learning outcomes) of the standart of the speciality 171 "Electronics" for the corresponding level of the higher education (bachelor, master of PhD). Standard for the bachelor level consists of 14 general competencies, 11 professional-oriented competencies, and 18 learning outcomes. Educational program "Electronic components and systems" in NTU KPI consists of 14 general competencies, 14 professional-oriented competencies (11 from standard and 3 unique for the program), and 21l earning outcomes (18 from standard and 3 unique for the program). Unique competences are as follows: "Ability to develop working technical documentation, design work with verification of compliance with standards, specifications and other regulations", "Ability to apply modern methods of production quality control, to conduct testing, certification and examination of production equipment, parts, assemblies and finished electronic products and devices", "Ability to apply modern methods for the development of low-waste, energy-saving and environmentally friendly technologies that ensure the safety of human life and their protection from possible consequences of accidents, catastrophes and natural disasters, apply methods of rational use of raw materials, energy and other resources". Unique program learning outcomes are as follows: "Develop working technical documentation, design work with verification of compliance with standards, specifications and other regulations", "Apply modern methods of production quality control, conduct testing, certification and examination of production equipment, parts, assemblies and finished electronic and acoustic products and devices", and "Apply modern methods for the development of low-waste, energy-saving and environmentally friendly technologies that ensure the safety of human life and their protection from the possible consequences of accidents, catastrophes and natural disasters, apply methods of rational use of raw materials, energy and other resources". Those unique program learning outcomes and competencies do not fully correspond to the focus of the program - fundamental and practical competencies in the development of power electronic components and systems, that differentiate the program from other similar programs in NTU KPI in particular and in Ukraine in general in 171 specialty.

    Recommendations:

- consider adding more specific competencies and learning outcomes to the program, more closely related to the focus of the program and their unique disciplines.

8.	The programme outcomes have been established in terms of what students are expected to know (the correspondence between the content of the educational process and the learning outcomes mentioned in the diploma supplement), understand and/or be able to demonstrate after completing the learning process. They are in full agreement with EURACE standards/ EAFSG.	fulfilled

    Findings from the Self-Evaluation Report/ Visit:

This correspondence is reflected in the correspondence tables in the text of the educational program (http://eds.kpi.ua/?page_id=5040), where it is indicated which of the mandatory educational components provide the corresponding learning results. Knowledge, skills and abilities are reflected in general and professional competencies that correlate with the approved standard of higher education. Additional competencies, in

	particular FK12, FK13, FK14, highlight the individual features of educational program, which determine its place among other similar specialty programs. **Recommendations:** - none	
9.	The programme outcomes allow graduates to get a job on the labour market in positions which correspond to the obtained qualification. The graduates of the study programme have a clearly defined perspective of the occupation on the labour market. **Findings from the Self-Evaluation Report/ Visit:** The goals and program learning outcomes of educational program reflect trends in the development of the specialty, since modern electronics involves the study of physical phenomena and processes in electronic devices, the principles of operation of electronic circuits, and modern programming methods. The trends in the development of the specialty and the peculiarities of the labor market are taken into account by the teachers of the educational program when updating the content of the relevant disciplines. The knowledge gained within the framework of this educational program allows graduates to get a job with companies working in specialty 171. Graduates of this educational program are in demand both in companies and enterprises that have many years of experience in the field of electronics, such as NVO "Saturn", NVO " Generator", as well as in new ones - PJSC "NVO Chervona Khvylia" and Eltekhmash, which are interested in training specialists in specialty 171 and interdisciplinary areas. 80-85% of graduates are arranged by specialty. More detailed information is available at the research center of applied sociology "Socioplus" https://kpi.ua/kpi_socioplus In addition, the results of studies at the first (bachelor's) level of higher education allow continuing studies at the second (master's) level, which is more focused on the production of new innovative products. **Recommendations:** - none	fulfilled
10.	The study programme is designed in accordance with: National Qualification Framework (CNC), National Register of Higher Education Qualifications (RNCIS) or the European Qualification Framework (https://ec.europa.eu/esco/portal/home), and also with the ARACIS specific standards in the Bachelor's field. **Findings from the Self-Evaluation Report/ Visit:** Program learning outcomes meet the requirements of level 6 of the Ukranian National Qualifications Framework https://zakon.rada.gov.ua/laws/show/1341-2011-%D0%BF/paran12#n12. The educational program is developed and operates in accordance with the standard of higher education in the specialty 171 "Electronics" https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/12/21/171-elektronika-bakalavr- VOzatv.stand.01.11.pdf. There is a significant similarity as compared to the requirements of Romanian CNC/ RNCIS/ ARACIS specific standards. **Recommendations:** - none	fulfilled
11.	The particular aspects of the evaluated study programme are rendered evident as compared to other study programmes provided by the institution from the same Bachelor's field. **Findings from the Self-Evaluation Report/ Visit:** A comparative analysis of educational programs taught in Ukrainian and European higher education institutions was conducted. Educational programs corresponding in content are offered by the Department of Electronics, Robotics and Monitoring Technologies and the Internet of Things of the National Aviation University (educational program "Electronic Systems", http://kafelec.nau.edu.ua/Materialu/EP_ES_2020_B.pdf); Department of Microelectronics, Electronic Devices and Devices of Kharkiv National University of Radio Electronics (educational program	fulfilled

	"Electronic Devices and Systems", https://nure.ua/abituriyentam/spetsialnosti-ta-spetsializatsiyi/spetsialnist-171-elektronika/baklavr-171-elektronika/osvitnja- programa-elektronni-pristroi-ta-sistemi); Department of Electronic Engineering of Lviv Polytechnic National University (educational program "Electronics", https://lpnu.ua/sites/default/files/2021/program/15915/171-bak2020.PDF); Department of Industrial and Biomedical Electronics of the National Technical University "Kharkiv Polytechnic Institute" (educational program "Electronics", https://drive.google.com/file/d/1d5Kzs5z6nAIRjtdgfy8KvmPkJ9vZV2XI/view). The curricula of European universities were also considered, in particular, the bachelor's program "Electronics" of the Faculty of Electronics, Photonics and Microsystems of the Wroclaw University of Science and Technology, Poland (https://wefim.pwr.edu.pl/en/candidates/oferta-studiow-i-stopnia/elektronika); Bachelor's program "Electronics" of the University of Warwick (The University of Warwick), United Kingdom of Great Britain and Northern Ireland (https://warwick.ac.uk/study/undergraduate/courses/electricalandelectronicengineering); Bachelor's program "Electrical Engineering" of the West Pomeranian University of Technology in Szczecin, Poland (https://www.zut.edu.pl/eng/home/faculties/faculty-of-electrical-engineering.html) and Bachelor's program "Electronics" of Metropolia University of Applied Sciences, Helsinki, Finland (https://www.metropolia.fi/en/academics/bachelorsdegrees/electronics). The conducted analysis showed the compliance of educational program KPI to the curricula of European universities. Compared with the analyzed educational programs of other institutions of higher education, the educational program of KPI has additional disciplines in the study of microprocessor technology, modern SMART systems, 3D printing, digital devices and systems, as well as disciplines in the study of functional electronics and laser technology. **Recommendations:** - none	
12.	*Other requirements provided in the standards specific to the Bachelor's field/ study program.* **Findings from the Self-Evaluation Report/ Visit:** **Recommendations:**	Not the case
	A.1.3 Academic integrity	
1.	The higher education institution has a code of university ethics and deontology / academic integrity by which it defends the values of the academic freedom, university autonomy and ethical integrity, possesses practices and applies clear mechanisms to permanently ensure vigilance regarding possible frauds or deviations from its academic (didactic and scientific research) activities, including active measures to prevent and eliminate any form of plagiarism.[3] **Findings from the Self-Evaluation Report/ Visit:** There are a lot of regulation documents and policies established in NTU KPI on institutional level, devoted to the academic integrity. It includes: - Code of Honor of NTU KPI (https://kpi.ua/code), which establishes general moral principles and rules of ethical behavior of persons working and studying at the university, which they should be guided by in their activities. It reflects the general moral principles, norms of ethical behavior of all participants in the educational process at the university, the policy of academic integrity and regulates the	fulfilled

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	activities of the Commission on Ethics and Academic Integrity of the Academic Council of KPI (chapter 4). All applicants, scientific and pedagogical workers and university employees must adhere Code of Honor. - Regulations on the Commission on Ethics and Academic Integrity of KPI (https://kpi.ua/academicintegrity, https://kpi.ua/files/etic_commission.pdf). - Regulation on the system of prevention of academic plagiarism at KPI (https://osvita.kpi.ua/index.php/node/47). - Regulations on the Diploma of the Scientific Council of KPI for popularizing the ideas of academic integrity (https://document.kpi.ua/files/2021_CHBC-53.pdf). - Order of the Rector No. NU/165/2022 dated September 15, 2022 approved the Procedure for establishing the facts of violation of academic integrity at NTU KPI, which determines the procedure for the formation and the basis of the work of the Commission on Ethics and Academic Integrity of the Academic Council of KPI, which verifies statements (notifications) regarding violations of academic integrity; grounds for conducting a review of a case of violation of academic integrity. For the popularisation of Academic Integrity Educational and scientific center of applied sociology "Socioplus" KPI (https://fsp.kpi.ua/ua/about/pidrozdili/socioplus/) conducts surveys of applicants and scientific and pedagogical workers on compliance with norms of academic integrity. Scientific and pedagogical workers training is being implemented as part of professional development on the subject of academic integrity (http://uiite.kpi.ua/pidv_kval_kpi/akadem-dobro/). Regulatory documents related to issues of academic integrity, useful resources and links are published on the official website of the university https://kpi.ua/academicintegrity. **Recommendations:** no recommendations	
2.	The higher education institution promotes and applies at the level of the evaluated study programme clear policies and documents regarding the academic integrity, protection of the copyright and against plagiarism, fraud and any form of discrimination, according to the valid legislation and code of university ethics and deontology approved by the University Senate. **Findings from the Self-Evaluation Report/ Visit:** NTU KPI has also measures at academic integrity on the level of each educational program. As for the educational program "Electronic components and systems", these measerus includes followings: - each syllabus of academic courses (https://osvita.kpi.ua/node/174) contains a Policy and control section, which includes, in particular, provisions on compliance with academic integrity: - independent fulfillment of educational tasks, including tasks of current and final control of learning outcomes (for persons with special educational needs, this requirement is applied taking into account their individual needs and capabilities); - references to sources of information in the case of using ideas, statements, information; - compliance with the legislation on copyright and related rights; - provision of reliable information about the results of one's own (scientific, creative) activity, used research methods and sources of information; - diploma theses, term papers, scientific publications of higher education applicants and academic staff are checked through the Unichek service; - students of higher education have a discipline "Academic writing" (for master and PhD students); - academic texts are placed in public access in the Electronic Archive of scientific and educational materials of NTU KPI so it is possible to do external check by any person; In the Code of Honor of NTU KPI (https://kpi.ua/code), among other moral principles by which members of the University community should be guided, the principles of honesty and decency, unbiased attitude towards each other, correct and objective evaluation of the results of	fulfilled

	educational, research and work activities, the principle of mutual respect are established. The internal Regulations of the NTU KPI (https://kpi.ua/admin-rule) prohibit any discrimination in the field of work and education, in particular, violation of the principle of equality of rights and opportunities, direct or indirect restriction of the rights of staff and students of higher education depending on race, skin color, political, religious and other beliefs, sex, gender identity, sexual orientation, ethnic, social and foreign origin, age, state of health, disability, suspicion or presence of HIV/AIDS, family or property status, family responsibilities, place of residence, membership in a trade union or other association of citizens, participation in a strike, applying or intending to apply to the court or other authorities for the protection of their rights or providing support to other staff and students of higher education in the protection of their rights, on linguistic or other grounds. All the listed normative acts were approved by Academic Council of the NTU KPI and put into effect by orders of the rector of the University. **Recommendations:** no recommendations	
A.1.4 Public liability and responsibility [3]		
1.	The institution possesses practices for internal audit regarding the main fields of the university activity. An academic audit report reviewed by the Senate and a plan of measures to improve activity are prepared on annual basis. **Findings from the Self-Evaluation Report/ Visit:** Annually, all vice-rectors of different responsibilities at the university report to the Academic Council of the Igor Sikorsky KPI on the results of their work during the year, as well as the director of the Department of Educational Process Quality, who summarizes the results of the measures implemented at the University to ensure the quality of education. In addition, all the departments of the University including the Department of Electronic Devices and Systems annually prepares a self-analysis report on many areas of activity during the year and the compliance of the results with the licensing requirements for the specialty approved at the state level (https://document.kpi.ua/2022_HOH-253). **Recommendations:** - none	fulfilled
A.1.5 Managerial activity of the institution [3]		
1.	The higher education institution has Internal Rules of Procedure and a Regulation for the Academic Activity of Students. The regulations are in accordance with the legislation in force and they are approved by the university Senate. **Findings from the Self-Evaluation Report/ Visit:** The internal regulations of the National Technical University of Ukraine "Igor Sikorskyi Kyiv Polytechnic Institute" (https://kpi.ua/admin-rule) are approved by the rector's order No. 7-34 dated 04/21/2017 and are based on the Constitution of Ukraine, the Code of Laws of Ukraine and other regulatory documents of the State. Regulations on the organization of the educational process at Igor Sikorsky KPI (https://osvita.kpi.ua/node/39) was approved by the rector's order No. 7/124 dated 07/20/2020 to implement the decision of the Academic Council of Igor Sikorsky KPI (protocol No. 5 dated June 30, 2020). A number of provisions (https://osvita.kpi.ua/docs) that highlight and detail various aspects and procedural issues of the educational process complement the Regulations. **Recommendations:** - none	fulfilled
2.	The institution of higher education should prove that it has organised the record of the academic activity of the students in accordance with the legislation in force, by forms homologated in this respect (catalogues, summary documents, academic records, transcripts, diplomas etc.). **Findings from the Self-Evaluation Report/ Visit:**	fulfilled

Control of the educational activities of students is conducted through a number of automated systems, in particular: 1) The Dean's office holds complete information about the contingent of students, their status (studying, on academic leave, expelled, transferred to another educational institution, etc.), information about orders for the contingent - enrollment, transfer to senior year, granting of academic leave, study under academic mobility programs, transfer between departments within the university or to other higher education institutions, expelling, and graduation. In the system, complete information about students' academic success is displayed - all grades received during training. This system makes it possible to generate full information about the semester control, that provided for by the Regulations on current, calendar and semester control of study results at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/32). Through the Dean's Office system, it is possible to generate a number of reports on the educational activities of students, including a state-style academic certificate. Information available in the system can be used when forming the supplements to diplomas. Academic and supporting staff responsible for control of students' success have access to the system. 2) The system my.kpi (https://my.kpi.ua/) - helps staff to automate the process of forming study and work curricula, gives the opportunity for students to choose optional courses and to form their individual study plans. Both students and staff have access to the system. The level of access is limited depending on the status of the user. 3) Electronic Campus (https://campus.kpi.ua//login.htm) - provides personal electronic accounts for students, academic and supporting stuff responsible for specific tasks. This system aggregates information from other systems: about lecturers (from HR department system), about students (from Dean's office system), about work curricula (my.kpi system), etc. The Electronic Campus has a number of built-in modules that contain information about the composition of academic groups, curators of groups, work curricula for all specialties and educational programs. In addition, in the system the following data are displayed data: students' attendance at classes, academic success during the semester and results of passing control measures (Current control module), results of interim monitoring of the fulfillment of individual study plans by students in the 7-8 and 14-15 weeks of study in each semester (Calformedendar control module), dates and times of control measures and of elimination of academic debt, as well as the results of the semester control (modul Session). The content of these modules are by lecturers responsible for teaching the courses. Through the Session module, lecturers assign grades for semester control measures, which are automatically displayed in the Dean's office system and entered in this system to students' electronic cards. In addition, in special modules of the Electronic Campus, all necessary educational and methodical materials, as well as syllabuses of courses, are covered. Access to this system is available to students, academic, support, and administrative staff of the University. Depending on position and status, users have access to different modules. A student can review existing information, but not fill this system with new information. 4) the system for creating a class schedule - filled and administered by supporting staff, while students, lecturers and other users can view available information at https://schedule.kpi.ua/. All listed above systems and a number of other systems used for organization of the educational process, and accompanying functioning of the University require user authorization, which ensures appropriate data protection. Besides the automated systems, the dean's offices also maintain paper journals of students' success and study cards, which contain study results and information about Orders for specific students. Regulations on current, calendar and semester control of learning results at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/32), Regulations on the system of evaluation of learning results at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/37), Provisions on expulsion, interruption of studies, renewal and transfer of students in Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/178) are the normative basis for control educational activities.

The scholar documents of the students have been verified at the Dean's office (and partially documented by photos, uploaded on the ARACIS cloud) during the on-site visit on May 30th of evaluator student Priliepo Nataliia acting upon the assignment for evaluation by ARACIS for the Automated and Robotic Mechanical Systems program at KPI.

　　Recommendations:
- none

3.	During the period of operation subsequent to the previous external evaluation, the institution of higher education has complied with the standards based on which the provisional operation/ accreditation/ accreditation maintenance – as the case may be – was granted.	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	During the period after the previous external evaluation, Igor Sikorsky KPI followed the standards, which had provided accreditation approval. The last accreditation of the specialty was carried out in 2017. The educational program has a license to conduct educational activities, issued by the Ministry of Education and Science of Ukraine НД No. 1192560 (070864) dated September 25, 2017. The University annually conducts self-analysis procedures of the Department in compliance with all the requirements given in the licensing terms for the verification of educational activities (https://kpi.ua/files/certificates-b.pdf).	
	Recommendations:	
	- none	
	A.1.6 Financial activity	
1.	The study fees of the students are calculated in accordance with the average tuition costs per university year in the public education sector financed by the state budget in similar fields, and they are presented to students through various means of communication.[3]	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	Education of students beyond the state order within the scope of the license in accordance with contracts concluded with individuals or legal entities is a paid service that can be provided by universities of Ukraine in accordance with Resolution of the Cabinet of Ministers of Ukraine No. 796 of 08/27/2010 "On approval of the paid services' list that can be provided by educational institutions, other institutions and institutions of the education system belonging to the state and communal forms of ownership" (https://zakon.rada.gov.ua/laws/show/796-2010-%D0%BF#Text).The Procedure for forming the minimum amount of tuition fees for obtaining higher education based on the indicative cost price was approved by Resolution of the Cabinet of Ministers of Ukraine No. 191 dated 03/03/2020 (https://zakon.rada.gov.ua/laws/show/191-2020-%D0%BF/sp:max50:nav7:font2?sp=:max50:nav7:font2&lang=en#Text). According to this Procedure, the specialty "Electronics" does not belong to the specialties for which the state sets the minimum tuition fee. Besides, in connection with the introduction of martial law in Ukraine by Resolution of the Cabinet of Ministers of Ukraine No. 251 dated 11/03/2022 "On the suspension of some resolutions of the Cabinet of Ministers of Ukraine in 2022" (https://zakon.rada.gov.ua/laws/show/251-2022-%D0%BF#Text) the introduction of the indicative cost of education (formation of the minimum tuition fee) is suspended. In Igor Sikorsky KPI, tuition fees in accordance with contracts concluded with individuals or legal entities are set by Order No. NGF/51/2022 dated 17/05/2022 "On setting tuition fees for the 2022/2023 academic year" (https://kpi.ua/files/2022_HGF-51.pdf; https://kpi.ua/files/2022_HGF-51a1.pd)	
	Recommendations:	
	- none	
2.	The students are informed about the possibilities of financial assistance provided by the institution and the modality of using the fees.[3]	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	According to the Procedure for preferential lending for higher education at Igor Sikorsky KPI, approved by Order No. 7- 155 dated 08/27/2020 (https://document.kpi.ua/files/2020_7-155.pdf) and Resolution of the Cabinet of Ministers of Ukraine No. 673 dated 29/08/2018. (https://zakon.rada.gov.ua/laws/show/673-2018-%D0%BF#Text, https://document.kpi.ua/files/2020_7-155.pdf), each student (citizen of Ukraine), who studies on the basis of an agreement on the provision of educational services at the expense of individuals or legal entities, can receive a preferential loan. The soft loan is provided with an annual interest rate of 3% and the possibility of repayment within 15 years after 12 months after graduation. Information on preferential lending is published on the website of the department (http://eds.kpi.ua/?p=8215). Every	

	year, the responsible person at the faculty level collects information about students who wish to receive a soft loan. Such students receive consultations on the advantages and features of the preferential lending program. **Recommendations:** - none	
3.	The evaluated study programme disposes of sufficient financial resources for the proper performance of the activity. **Findings from the Self-Evaluation Report/ Visit:** Financing of bachelor's training according to the evaluated educational program is carried out at the expense of state budget expenditures (state order) and at the expense of individuals and/or legal entities. Funding provided allows for the achievement of the goals of the evaluated educational program. **Recommendations:** - none	fulfilled
	A.2 Facilities	
	A.2.1 Availability of educational establishments	
1.	The institution of higher education disposes of own premises – at least 70% - or rented premises which are adequate for carrying out didactic activities (course and applications – seminars, laboratories, projects) during all disciplines included in the programme curriculum. **Findings from the Self-Evaluation Report/ Visit:** Igor Sikorsky KPI has 100% of its own classrooms and cabinets, which are located in 33 buildings of the University (https://kpi.ua/location). Vocational training courses are held in the classrooms of the Department of Electronic Devices and Systems. The total quantity of the Department classrooms is 39 (with the total area of 1872.2 sq.m.). The quantity of educational classes is 28 (with the total area of 1675.5 sq.m.), among them: 16 laboratories (1041.2 sq.m., 184 seats), 7 computer classes (371.5 sq.m., 114 seats), 3 auditoriums (141.8 sq.m., 78 seats), 1 room for fulfillment of course projects and diploma theses (48.4 sq.m., 30 seats). Educational spaces have been viewed online in a presentation session on June 1st. The educational spaces have been visited onsite (and partially documented by photos, uploaded on the ARACIS cloud) during the on-site visit on May 30th of evaluator student Priliepo Nataliia acting upon the assignment for evaluation by ARACIS for the Automated and Robotic Mechanical Systems program at KPI. **Recommendations:** - none	fulfilled
2.	The capacity of the educational facilities for the study programme subjected to evaluation should be of: minimum 1 m^2/seat, in the class rooms; minimum 1.4 m^2/seat in the seminar rooms; minimum 1.5 m^2/seat in the lecture rooms from the libraries; minimum 2.5 m^2/seat in the computer laboratories and specialty discipline laboratories which use the computer; minimum 4 m^2/seat in the laboratories of the technical, experimental, design disciplines etc. **Findings from the Self-Evaluation Report/ Visit:** The Faculty of Electronics provides the following classrooms: - auditoriums for student streams' lectures - No. 200 (70.9 sq.m.), No. 308 (101.3 sq.m.), No. 321 (109.1 sq.m.), No. 414 (74.2 sq.m.), No. 424 (75.8 sq.m.); - auditoriums for one student group lectures - No. 108 (49.1 sq.m.), No. 307 (48.3 sq.m.), No. 406 (71.7 sq.m.); - classrooms for practical classes - No. 120 (30.3 sq.m.), No. 307 (48.3 sq.m.); - computer laboratories - No. 111a (36 sq.m., 8 computers), No. 111b (22.9 sq.m., 4 computers), No. 304 (61.3 sq.m., 8 computers), No. 307 (48.3 sq.m., 6 computers), No. 402 (70.7 sq.m., 15 computers); - laboratories for special courses - No. 101 (31 sq.m.), No. 102 (72.6 sq.m.), No. 103 (72.6	fulfilled

	sq.m.), No. 105 (73.2 sq.m.), No. 107 (48.1 sq.m. .m.), No. 111 (102 sq.m.), No. 301 (200.7 sq.m.), No. 305 (48.4 sq.m.), No. 311 (132 sq.m.), No. 315 (43.1 sq.m. .m.). Educational spaces have been viewed online in a presentation session on June 1st. The educational spaces have been visited onsite (and partially documented by photos, uploaded on the ARACIS cloud) during the on-site visit on May 30th of evaluator student Priliepo Nataliia acting upon the assignment for evaluation by ARACIS for the Automated and Robotic Mechanical Systems program at KPI. **Recommendations:** - none	
3.	The number of seats in the lecture rooms, seminar rooms, laboratories and project rooms should be correlated with the size of the study formations – series, groups, sub-groups etc., according to the norms in force. **Findings from the Self-Evaluation Report/ Visit:** For the organization of the educational process according to the full-time form of education, the normative number of students in lecture streams and when conducting educational classes in separate groups is established in accordance with the regulations https://document.kpi.ua/files/regulations.pdf: streaming lectures - 50-100 people; lectures for one group - 20-30 people; practical classes - 20-30 people; for conducting laboratory classes, the group is divided in half (10-15 people). Educational spaces have been viewed online in a presentation session on June 1st. The educational spaces have been visited onsite (and partially documented by photos, uploaded on the ARACIS cloud) during the on-site visit on May 30th of evaluator student Priliepo Nataliia acting upon the assignment for evaluation by ARACIS for the Automated and Robotic Mechanical Systems program at KPI. **Recommendations:** - none	fulfilled
4.	*Other requirements provided in the standards specific to the Bachelor's field/ study program*. **Findings from the Self-Evaluation Report/ Visit:** **Recommendations:**	Not the case
	A.2.2 Endowment of the educational establishments	
1.	The lecture/ seminar rooms dispose of technical equipment that is adequate for teaching and communication; the didactic and research laboratories dispose of specific equipment which ensure the adequate performance of the applied and practical activities. **Findings from the Self-Evaluation Report/ Visit:** Lecture/seminar classrooms have technical equipment that is sufficient for teaching and communication; didacticresearch laboratories have special equipment that ensures proper implementation of applied and practical activities (http://eds.kpi.ua/?page_id=6584). There are more than 300 units in the laboratories of the department. special equipment and control and measuring equipment and computer equipment according to the list, which is located in the laboratories of the department and allows to perform applied and practical activities as part of the educational process at the appropriate level. Computers and projectors are available in the respective classrooms for technical support of lectures and seminars. Educational spaces have been viewed online in a presentation session on June 1st. The educational spaces have been visited onsite (and partially documented by photos, uploaded on the ARACIS cloud) during the on-site visit on May 30th of evaluator student Priliepo Nataliia acting upon the assignment for evaluation by ARACIS for the Automated and Robotic Mechanical Systems program at KPI.	fulfilled

	Recommendations: - none	
2.	The technical equipment of the laboratories in which applied activities are carried out in the disciplines included in the programme curriculum is adequate, so that, at the level of a study group, there is one computer at maximum two students. There is licensed software, adequate to the content of the disciplines from the programme curriculum. **Findings from the Self-Evaluation Report/ Visit:** An analog electronics laboratory was equipped with the participation of the Melexis-Ukraine company, which is one of the stakeholders of this educational program (http://eds.kpi.ua/?p=4501). The technical equipment of the laboratories in which applied activities are carried out in the disciplines included in the curriculum is adequate so that at the level of the educational group there is one computer for a maximum of two students. There is licensed software, adequate to the content of the disciplines of the software curriculum. Computer classes are used as part of the educational program: No. 111 a (36 m2, 8 computers), No. 111 b (22.9 m2, 4 computers), No. 304 (61.3 m2, 8 computers), No. 307 (48.3 m2, 6 computers), No. 402 (70.7 m2, 15 computers), which fully ensure the educational process. Computers use software with a free license (Octave, FreeCAD, LTspice-XVII, Micro-Cap 12) and licensed software (http://eds.kpi.ua/?page_id=8663), which allow for practical support for studying the disciplines of the educational program. Educational spaces have been viewed online in a presentation session on June 1st. The educational spaces have been visited onsite (and partially documented by photos, uploaded on the ARACIS cloud) during the on-site visit on May 30th of evaluator student Priliepo Nataliia acting upon the assignment for evaluation by ARACIS for the Automated and Robotic Mechanical Systems program at KPI. **Recommendations:** - It is recommended to update some of the laboratory equipment (especially physical equipment) to the newer technology commercially available on the market.	fulfilled
3.	*Other requirements provided in the standards specific to the Bachelor's field/ study program.* **Findings from the Self-Evaluation Report/ Visit:** **Recommendations:**	Not the case
	A.2.3 Availability and endowment of scientific research premises	
1.	The higher education institution disposes of own or rented research premises/ research laboratories with equipment adequate to the exigencies of the themes approached in the field of the evaluated study programme. **Findings from the Self-Evaluation Report/ Visit:** In accordance with the subjects of educational program subjects, there are laboratories available for the implementation of both pedagogical workers and scientific research applicants. The laboratories are equipped with measuring and computing equipment, physical and technological installations according to the profile of the disciplines. Pedagogical workers and applicants are part of 12 scientific groups of the faculty. In addition, students can participate in scientific clubs of the department, faculty and the university as a whole (https://dnvr.kpi.ua/science-club-06-16/). Involved material and technical resources of the EDS and AMES departments, centers for collective use of the equipment of higher education institutions (https://science.kpi.ua/ckkno/): Nanotechnological Center NANOFAB (building 2), licensed laboratory for the design of analog microcircuits with a very high degree of integration (VLSI), educational and scientific laboratory of analog electronics Melexis, the laboratory contains six workstations, each of which is equipped with: a Siglent SDS1052DL+ oscilloscope; functional generator Sigent	fulfilled

	SDG1025; a Mastech MY65 multimeter; a board for studying analog circuits Analog System Lab Kit PRO; UNI-T UTP3305 laboratory power supply), power electronics research laboratory (Siglent SDS 1052DL oscilloscopes – 3 pcs. Metrel MI 2885 power quality meter – 1 pc.; Lukey 868 soldering station – 1 pc.; ultrasonic bath RoHS PS- 20 - 1 pc.; laboratory DC power supplies MR3005-2 - 2 pcs.), educational and scientific center of plasma nanotechnology of functional optical coatings, laboratory of electronic acoustic control tools NDT-Lab "ULTRACON-SERVICE" https://tinyurl.com/3mxn2dhh, Center for Supercomputing. Video information https://m.youtube.com/watch?feature=youtu.be&v=LCWjAXyO5JQ shows the creation of conditions for achieving the goals and learning outcomes of educational program. Some research spaces have been viewed online in a presentation session on June 1st. Some research spaces have been visited onsite (and partially documented by photos, uploaded on the ARACIS cloud) during the on-site visit on May 30th of evaluator student Priliepo Nataliia acting upon the assignment for evaluation by ARACIS for the Automated and Robotic Mechanical Systems program at KPI. **Recommendations:** - It is recommended to update some of the laboratory equipment (especially physical equipment) to the newer technology commercially available on the market.	
	A.2.4 Availability and endowment of the library	
1.	The higher education institution disposes of library equipped with lecture room and own library stock corresponding to the disciplines from the programme curriculum. Students have free access in library. **Findings from the Self-Evaluation Report/ Visit:** The Igor Sikorsky Kyiv Polytechnic Institute includes the general structural department of the KPI library named after G. I. Denisenko (https://www.library.kpi.ua/en/). The library has a large book fund of special and general literature (over 2,500,000 storage units), spacious and comfortable reading rooms (6,320 m2 of user service area and 13,869 m2 of total library area), powerful electronic information resources and convenient services for users (https://ela.kpi.ua/handle/123456789/43216?locale=uk). All students and academic staff of the University have free access to use the KPI library's resources (https://www.library.kpi.ua/ua/about-library/zapys-do-biblioteky/). **Recommendations:** - none	fulfilled
2.	Own library stock, consisting in Romanian and foreign literature, should completely cover the theme of the disciplines from the programme curriculum; at least 50% are book titles or academic courses published within the last ten years by well-known publishing houses. **Findings from the Self-Evaluation Report/ Visit:** The Electronic Components and Systems program is teached in Ukrainian and English languages. The subject of the educational program courses is fully covered by its library fund, which includes relevant Ukrainian and English-language sources, more than 50% of which have been published over the past 10 years by well-known publishing houses (see the electronic catalog https://discovery.kpi.ua/). The website of the department of electronic devices and systems and the KPI electronic archive provides open access to full-text versions of electronic textbooks (Ukrainian) on the key disciplines of the educational program, as well as to all available methodical support (http://eds.kpi.ua/?page_id=675, http://eds.kpi.ua/?page_id=4173, https://ela.kpi.ua/handle/123456789/15070). Methodical materials for disciplines are present in the "Electronic Campus" system. They are available for all students, who are authorized in this system, as part of studying the courses of their educational program. **Recommendations:** - consider adopting an institutional strategy for the transition towards the full digital books and educational materials	Partially fulfilled

	- consider grouping the educational and documentation resources into a single system; - consider ensuring the appropriate coverage of the subjects in the curriculum and syllabuses with recent bibliographic; material existing in the university libraries in the language of teaching of the study program	
3.	The library stock should contain enough copies to cover the needs of all the students from the evaluated study programme. **Findings from the Self-Evaluation Report/ Visit:** The KPI library has all the necessary educational literature in sufficient quantity to provide for all students studying under this educational program. To search and order literature, you can use the electronic catalog https://discovery.kpi.ua/. In addition, the website of the department of electronic devices and systems and the electronic archive of the University provides open access to full-text versions of electronic textbooks (Ukrainian) on the key disciplines of the educational program, as well as to all available methodical support (http://eds.kpi.ua/?page_id=675, http://eds.kpi.ua/?page_id=4173, https://ela.kpi.ua/handle/123456789/15070). **Recommendations:** - consider adopting an institutional strategy for the transition towards the full digital books and educational materials	fulfilled
4.	There is a sufficient number of subscriptions to Romanian and foreign publications and periodicals, which corresponds to the mission and aims undertaken by the study programme. **Findings from the Self-Evaluation Report/ Visit:** The Electronic Components and Systems program is teached in Ukrainian and English languages. The KPI library provides students with a sufficient number of periodicals, including foreign publications, that correspond to the mission and goals set by the educational program. The electronic archive of Igor Sikorsky Kyiv Polytechnic Institute provides open access to full-text versions of periodicals of KPI named after Igor Sikorsky at the link https://ela.kpi.ua/handle/123456789/2722. In addition, with the help of the library website, you can go to international databases of periodicals with open access https://www.library.kpi.ua/en/resources/databases/ or order the necessary publications from electronic databases with limited access. **Recommendations:** - none	fulfilled
5.	For the study programmes taught in foreign languages, there are study resources available in the teaching language that are of adequate quality and in a sufficient number of copies. **Findings from the Self-Evaluation Report/ Visit:** The evaluated program is taught in both Ukrainian and English language (upon demand and for international students). The KPI library provides students with adequate English-language educational resources in a sufficient number of copies according to the courses of the educational program (see the electronic catalog https://discovery.kpi.ua/). In addition, the university provides students with free access to the English-language resources of the Coursera educational platform (https://www.coursera.support/s/article/000001666-Coursera-for-UkraineInitiative?language=en_US) and edX (https://openedx.org/marketplace-category/ukrainian/). The coverage of the disciplines in the curricula with English language materials is scarce; some components are missing or externalized. **Recommendations:** - consider adopting an institutional strategy for the transition towards the full digital books and educational materials - consider grouping the educational and documentation resources into a single system - consider ensuring the appropriate coverage of the subjects in the curriculum and syllabuses with recent bibliographic material existing in the university libraries in the language of teaching of the study program	partially fulfilled

6.	The higher education institution ensures the multiplication of the courses and other didactic material necessary to the educational process, and it makes them available to students in an adequate number of copies. **Findings from the Self-Evaluation Report/ Visit:** All necessary methodological materials in full-text format are posted on the website of the EDS department http://eds.kpi.ua/?page_id=675, http://eds.kpi.ua/?page_id=4173, in the Electronic Campus, in distance courses on the distance learning platform Sikorsky https://www.sikorsky-distance.org/, and in the electronic archive of the KPI library https://ela.kpi.ua/handle/123456789/15070. Remote access to educational methodical materials is especially useful and relevant in the conditions of a pandemic and martial law when classes take place mainly in remote mode. In this way, equal access for all students to the educational environment of the university is ensured. In addition, Igor Sikorsky Kyiv Polytechnic Institute has his own publishing house Politechnika http://politechnika.kpi.ua/, which provides printing and reproduction of textbooks, manuals, and other methodological literature authored by the university academic staff. Also, the university has several printing centers in educational buildings, where students, if necessary, have the opportunity to make copies of printed educational materials in the disciplines of this educational program. **Recommendations:** - none	fulfilled
7.	*Other requirements provided in the standards specific to the Bachelor's field/ study program.* **Findings from the Self-Evaluation Report/ Visit:** **Recommendations:**	Not the case
	A.3 Human resource	
	A.3.1 Quality of the teachers	
1.	The academic staff from the study programme are hired according to the recruitment criteria established at institutional level, in accordance with the legal provisions. **Findings from the Self-Evaluation Report/ Visit:** Recruitment procedure and criterias in NTU KPI is established in accordance with the Ukrainian national legalization in the field of higher education and based on the following documents: Laws of Ukraine "On Education", "On Higher Education", and "Licensing conditions for conducting educational activities". Based on those documents, local documents such as "Regulations on the organization of the educational process in Igor Sikorsky Kyiv Polytechnic Institute" (https://kpi.ua/en/regulations) where general requirements for different academic positions (assistant, lecturer, senior lecturer, associate professor, professor) are set. Specific requirements (scientific and research activity, publications, practival experience) are not included in the general requirement, but it is noted, that call for each position can be supplemented with additional, specific, requirements. All job calls are published on NTU KPI web-site (https://kpi.ua/board-job). According to the Procedure, the term of the academic staff contract is from 1 to 5 years. Current job calls mention only the position title (e.g. professor, associate professor, etc. of some department) and have no information about the required professional qualification (e.g. skills, detailed field or specialization) that NTU-KPI is looking for. **Recommendations:** Consider the clarification of the requirements for the selection of the best candidates by including specific requirements (e.g. detailed field of expertise) for the open position calls.	fulfilled

2.	The higher education institution ensures the adequate number of academic staff with adequate training for the activities provided in the disciplines from the programme curriculum, for the entire cycle of the study programme. **Findings from the Self-Evaluation Report/ Visit:** NTU KPI as all other HEIs in Ukraine should calculate the number of academic staff based on the number of the students with maximum 600 hours of academic load per 1 full-time of academic staff position. As for academic training, provisions of decree of cabinet of ministers of Ukraine "On the approval of the Licensing conditions for conducting educational activities" is used, where it is pointed out that each academic staff should have 5 and more achievements in professional activity, which are counted for the last five years (chapter 38 of the mentioned above decree). Number of academic staff, involved in the activities in educational program "Electronic components and system" and the level of their qualification is good enough for the successful implementation and operation of educational program. **Recommendations:** no recommendations	fulfilled
3.	The tenure teachers from higher education cover, during a university year, maximum three workloads irrespective of the educational institution in which they carry out their activity. **Findings from the Self-Evaluation Report/ Visit:** Ongoing legalization in the Ukrainian HE allows maximal limit of 1.5 of full time for academic staff of universities with the possibility to extend it additional to 240 hours. Analysis of maximal workload of tenure academic staff involved in the implementation of activities in educational program "Electronic components and systems" shows that there are no staff with workload more than 1.5 of full-time. **Recommendations:** no recommendations	fulfilled
4.	The number of tenure teachers in the higher education, according to the legal provisions, considered for the evaluated study programme, is the one resulted by considering the full-time jobs from the organisational charts and the part-time jobs which they cover in the respective programme. **Findings from the Self-Evaluation Report/ Visit:** The total number of academic staff at the department that is responsible for the implementation of the educational program "Electronic components and systems" is 32, of which 24 are full-time and 8 are part-time. In accordance with the "Regulations on planning and accounting for the teaching load of scientific and pedagogical staff of NTU KPI" (Order No. NU/14/2022 dated January 20, 2022) the maximum academic load for one rate of scientific and pedagogical employee cannot exceed 600 hours per academic year. The minimum training load of the head of the department, professor (associate professor), as a rule, is 350 (400) hours. **Recommendations:** no recommendations	fulfilled
5.	At least 70% of the total jobs of the study program are assigned to tenure teachers in the higher education institution, according to the legal provisions – with basic workload or reserved position, and at least 25% of them are covered by university professors and associate professors. **Findings from the Self-Evaluation Report/ Visit:** Legalisations in the field of higher education in Ukraine up to 2022 recommends to use a fixed-term employment agreement (contract) (1…5 years) as the main type of the contract with academic staff, and tenure positions with unlimited contract is more like exceptions. In accordance to the data from the department, academic positions at the department, responsible for the education program is occupied by 24 full-time staff and 8 part-time (0.5 of full time and less). In accordance with the "Licensing conditions for conducting educational activities" (Resolution of the	fulfilled

	Cabinet of Ministers of Ukraine No. 347 dated May 10, 2018), personnel requirements for the bachelor's level of education: - the share of those academic staff who have a scientific degree and/or academic title should be at least 50% out of the total number of academic staff conducting the teaching at the educational program (at the department this number is 75%); - the share of those academic staff who have a scientific degree of doctor of sciences and/or the academic title of professor should be at least 10% out of the total number of academic staff conducting the teaching at the educational program (at the department this number is 30%). Share of full-time positions is 75% (24/32). **Recommendations:** no recommendations	
6.	The full-time academic staff appointed according to the law, who retired at the age limit or due to other reasons, may work in the capacity of associated academic staff in accordance with the legal provisions, but they may cover at most one workload in the respective educational institution. **Findings from the Self-Evaluation Report/ Visit:** Equality of labor rights of citizens of Ukraine and non-discrimination in the field of labor is enshrined in the Labor Code of Ukraine (https://zakon.rada.gov.ua/laws/show/322-08#Tex). Any discrimination in the field of labor is prohibited, in particular, violation of the principle of equal rights and opportunities, and direct or indirect limitation of the rights of employees based on age. According to Article 26 of the Law of Ukraine "On Mandatory State Pension Insurance", the retirement age is 60, 63, and 65 years, depending on the length of insurance. The number of academic staff of age 60 and nore is 8 out of 24 full-time academic staff (33%), they have 6,3 Full-time equivalent (FTE) out of 23,05 FTE rates for full-time positions (27%). They have workload less then 1. The average age in the EDS department is 48,4 years. The average age of professors is 62,29 years. The average age of associate professors is 49,69 years. The average age of senior lecturers is 43,8 years. The average age of assistant professors is 29,2 years. Department has the plan to rejuvenate the staff by defending doctoral theses by some members of the department's academic staff. **Recommendations:** no recommendations	fulfilled
7.	The tenure teachers have the scientific title of PhD and they comply with at least one of the following conditions: they hold a Bachelor's diploma in the field of the taught disciplines; they are PhD supervisors in the field of the taught disciplines; the theme of their PhD thesis is in the field of the taught disciplines. The other teachers should have the initial training and skills in the field of the taught discipline. **Findings from the Self-Evaluation Report/ Visit:** By the Regulation on the organization of the educational process at the Igor Sikorsky Kyiv Polytechnic Institute (https://kpi.ua/regulations), positions of the academic staff can be held by persons with a scientific degree or academic title, as well as persons with a master's degree (specialist). The procedure of filling vacant positions of the academic staff is regulated by the "Procedure for competitive selection or election by competition for filling vacant positions of academic staff and concluding contracts with them" (https://osvita.kpi.ua/sites/default/files/downloads/Pologennia_ped_navantagennia_2022.pdf). Among the 24 full-time academic staff of the department: 7 doctors of science (30%) http://eds.kpi.ua/?page_id=6236, 13 candidates of science (PhD) (54%) http://eds.kpi.ua/?page_id=6220, 4 with a master's degree (without a PhD degree) (16%) http://eds.kpi.ua/?page_id=6215. The department's academic staff are required to take professional development courses (http://ipo.kpi.ua/) once every 5 years, totaling 180 hours (6 ECTS credits). **Recommendations:** - none	fulfilled

| 8. | The tenure teachers have prepared courses and other didactic material necessary to the educational process, which fully cover the issues of the respective discipline, in accordance with the subject description (syllabus).
 The teachers have relevant training for the subjects approached in the developed learning resources.
 Findings from the Self-Evaluation Report/ Visit:
 The department's academic staff annually update the content of educational components within the framework of the educational program. Syllabuses of educational components (http://eds.kpi.ua/?page_id=709) are approved at the department meeting. Didactic materials of educational components must be updated once every 5 years: lecture notes, practice, guides for calculations, and coursework. All methodological materials are uploaded to the Electronic Campus and placed in the ELAKPI (Electronic Archive of Igor Sikorsky Kyiv Polytechnic Institute) https://ela.kpi.ua/. The lists of basic and additional literature are also updated every year in such a way that they contain sources no older than 5 years. The qualifications of academic staff and their relevance to the field of 171 Electronics are confirmed by a diploma of higher education, a diploma of a scientific degree, a certificate of a scientific title, or a list of professional publications for the last 5 years. All of academic staff are involved in the preparation of the didactic materials (lecture notes, methodological recommendations for the practice and laboratory classes, course works, etc.).
 Recommendations:
 - consider ensuring the appropriate coverage of the subjects in the curriculum and syllabuses with recent bibliographic material existing in the university libraries in the language of teaching of the study program (Ukrainian and English). | fulfilled |
| 9. | The teachers who occupy positions of assistant should have certified pedagogical training.
 Findings from the Self-Evaluation Report/ Visit:
 The mandatory availability of a certificate of pedagogical education is not provided for by regulatory documents of Ukraine. The necessary level of professionalism of the academic staff is ensured by the competitive selection, which is regulated by the Law "On Higher Education", the Order of the Ministry of Education and Science of Ukraine #1005 from 05.10.2015, "Procedure for conducting competitive selection or election for filling vacant positions of academic staff and concluding employment agreement (contract) with them" (https://osvita.kpi.ua/competition), as well as "Recommendations on determining the contracts durations with the academic staff" (https://osvita.kpi.ua/sites/default/files/downloads/%d0%a0%d0%b5%d0%ba%d0%be%d0%bc%d0%b5%d0%bd%d0%b4_%20%d0%b7_%d1%83%d0%ba%d0%bb%d0%b0%d0%b4%d0%b5%d0%bd%d0%bd%d1%8f_%d0%ba%d0%be%d0%bd%d1%82%d1%80%d0%b0%d0%ba%d1%82_%d0%9d%d0%9f%d0%9f.pdf). By the "Procedure for conducting competitive selection or election for filling vacant positions of academic staff and concluding employment agreement (contract) with them" (https://osvita.kpi.ua/competition), candidates for the position among other documents of the competitive cases provide information on the types and results of professional activity in a specialty, which is used to recognize the qualification, corresponding activity, documents on professional development. As a rule, the academic staff who hold the positions of Assistants are graduates of postgraduate studies or holders of a Ph.D. degree. The curriculum for the preparation of master's degree holders under the educational and scientific program provides for the study of the discipline "Pedagogical excellence", where the holders learn to develop and conduct all types of classes in a higher or professional education institution, to create full-fledged methodical and didactic support for the educational disciplines of professional and basic training of specialists of all educational qualification levels, adapt the available material following scientific and technical progress, teaching features, current norms, and standards. The study plan for Ph.D. degree holders also requires the completion of pedagogical practice, which contributes to the formation of the necessary professional competencies in Ph.D. degree holders. In particular, the ability to carry out scientific and pedagogical activities in higher education for Ukrainian-speaking and foreign-speaking audiences using the latest pedagogical approaches and | fulfilled |

	practices, including information technology, and multimedia tools in the educational process for Ukrainian-speaking and foreign-speaking audiences, to diversify teaching methods to better perceive the material. **Recommendations:** - no recommendations	
10.	The associated teachers are bound to notify in writing the head of the institution where they occupy the primary position and the head of the institution in which they are associates with regard to the number of classes taught by association; in case they hold the primary position in another higher education institution, it is necessary to obtain the consent from the university senate of the respective institution. **Findings from the Self-Evaluation Report/ Visit:** By the Resolution of the Cabinet of Ministers of Ukraine #245 from April 3, 1993 "On part-time work of employees of state enterprises, institutions, and organizations", the consent of the administration at the principal place of employment is not required for part-time work. At the time of employment, the employee must (among other documents) provide a certificate from the Principal place of employment and a certified copy of the Employment history by the "Procedure for conducting competitive selection or election for filling vacant positions of academic staff and concluding employment agreement (contract) with them" (https://osvita.kpi.ua/competition). Currently, in the Electronic Components and Systems program, invited teaching staff from the industry deliver only small lectures/ labs, under the supervision of university teaching staff; the current practice is that the Department of Electronics selects the industry associates without further paperwork. **Recommendations:** - none	fulfilled
11.	The institution provides to the academic staff opportunities to improve their teaching skills and the skills of using the new technologies for teaching purpose. **Findings from the Self-Evaluation Report/ Visit:** According to the "Regulations on improving the qualifications of academic staff" (https://document.kpi.ua/files/2020_7- 134.pdf), academic staff are obliged to improve their qualifications at least once per five years. Academic staff of the educational program have the opportunity to raise their professional level in the Educational and Methodological Complex "Institute of Postgraduate Education" of Igor Sikorsky Kyiv Polytechnic Institute (EMC "IPE"). The EMC "IPE" provides training according to updated programs of professional development of academic staff of Igor Sikorsky Kyiv Polytechnic Institute. The list of training programs changes and is supplemented with new ones every year. Upon completion of training, the trainees receive a certificate of professional development http://ipo.kpi.ua/povyshenie_kvalif/pidvish-kvalif-spivrob-kpi-108/. Also, academic staff raise their professional level as a result of internships, and participation in international scientific and technical conferences. Igor Sikorsky Kyiv Polytechnic Institute constantly provides academic staff, students, and post-graduate students with comprehensive information about professional, scientific, and educational events taking place in Ukraine and the world. Academic staff have the opportunity to undergo internships at universities in other countries of the world. For example, the academic staff underwent internships at such institutions as Wroclaw University of Science and Technology, University of Lorraine, University of Zagreb, Instituto Politecnico de Setubal, University of Granada, West Pomeranian University of Technology, University of Groningen, Warwick University, Institute of Electrodynamics, Melexis Ukraine, etc. The university has an "Information platform of opportunities for international project-grant programs" ("International mosaic" https://intermozaika.kpi.ua/). It is a convenient tool for authors and project managers who are looking for international partners and forming consortia. This tool contains educational and informational and methodical materials, characteristics of funds, programs, competitions, and grants. It may be useful to prepare and submit project proposals for participation in competitions of international project-grant programs.	fulfilled

	Academic staff may exercise the right to academic mobility for carrying out professional activities by the concluded agreement on participation in the academic mobility program. (Department of International Cooperation https://icd.kpi.ua/, http://mobilnist.kpi.ua/. For academic staff and other participants in the educational process, there is an opportunity to complete a scientific internship, participate in joint projects, conduct scientific research, and improve qualifications with a scientific component (Department of Science and Innovation). The academic staff has the opportunity to undergo training, create, develop and support their projects at the Startup School, thanks to the innovative ecosystem of Sikorsky Challenge Ukraine https://www.sikorskychallenge.com/. The Education and Research Support Center of the KPI Library (https://www.library.kpi.ua). Every five years, academic staff must improve their qualification level. Internships occur not only at enterprises, where academic staff get to know new industrial technologies that students need to know, but also increase their teaching level by taking experience in other higher educational institutions. **Recommendations:** - none	
12.	*Other requirements provided in the standards specific to the Bachelor's field/ study program.* **Findings from the Self-Evaluation Report/ Visit:** **Recommendations:**	Not the case
	A.3.2 Availability of the auxiliary staff necessary to implement the study programme	
1.	The auxiliary staff who provides the technical support in the didactic and research laboratories is adequate to ensure the performance of the practical activities from the programme curriculum. **Findings from the Self-Evaluation Report/ Visit:** For technical support of the educational process, 2 heads of laboratories, 9 engineers are involved, whose job descriptions provide for preparation and support of laboratory work, repair and adjustment of equipment. The table of fixing engineers by individual laboratories of the department is given at https://docs.google.com/document/d/1JFohTc6J3pcF69Xx9LnbVHKMXwwJOxC/edit **Recommendations:** - none	fulfilled
	B. EDUCATIONAL EFFICACY	
	B.1 Content of the study programmes	
	B.1.1 Student admission	
1.	The higher education institution applies a transparent policy of student recruitment and admission, which is publicly announced at least six months prior to the application. The university marketing promotes real and correct information, indicating verification and confirmation possibilities. **Findings from the Self-Evaluation Report/ Visit:** The 2022 admission campaign started more than 6 months before the application deadline. The Terms for admission to higher education in 2022 were approved by the Order of the Ministry of Education and Science of Ukraine No.1098 of October 13, 2021 (https://zakon.rada.gov.ua/laws/show/z1542-21#Text). According to the Order, the Rules for admission to higher education at National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" in 2022 should apply (https://pk.kpi.ua/wp-content/uploads/official-	fulfilled

	documents/rules.pdf). However, due to the implementation of martial law in Ukraine, the above Terms were canceled by Order of the Ministry of Education and Science of Ukraine No.392 dated 04/27/2022 (https://zakon.rada.gov.ua/laws/show/z0487-22#Text) and the Procedure for admission to higher education in 2022 was introduced. National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" promotes equal opportunities and applies non-discriminatory, transparent and fair procedures. The recruitment of students for the evaluated educational program is carried out in accordance with the current legislation and the Rules of admission to National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". All the information necessary for admission to the educational program is posted on the website of the department (http://eds.kpi.ua/?page_id=8235). **Recommendations:** none	
2.	The students are recruited based on own admission procedures of the institution. At university/ faculty level there is a methodology/ regulation of admission in the university Bachelor's study cycle – distinct document or a document which is part of an entrance methodology/ regulation document for all the study cycles from the university. **Findings from the Self-Evaluation Report/ Visit:** The recruitment of students for the evaluated educational program is carried out in accordance with the Rules for admission to higher education at the National Technical University of Ukraine "Ihor Sikorsky Kyiv Polytechnic Institute" in 2022 (with changes). (https://pk.kpi.ua/wp-content/uploads/official-documents/rules.pdf). The Terms for admission to the educational program are university-wide. Information about admission is available on the website of the department (http://eds.kpi.ua/?page_id=8235). Admission of students is based on the rating system of certificates of External national independent evaluation, and for graduates of colleges or technical schools in related specialties there is a possibility to admit to a shortened form of education (3 years). **Recommendations:** none	fulfilled
3.	The admission is based exclusively on the academic skills of the candidate and no discriminatory criterion is applied. Signing-up for the entrance examination is based only on the baccalaureate degree or other documents of equivalent studies. **Findings from the Self-Evaluation Report/ Visit:** Admission of students for studies is carried out on the basis of the scores of certificates of the External national independent evaluation, which excludes the possibility of using any discriminatory criteria. In 2022, the entrants which applied for study at the expense of the state budget were recruited based on the results of the National Multi-Subject Test (2022) and the External national independent evaluation (2019-2021). The rating of entrants with the same competitive score, was determined based on the results of consideration of motivational letters. The entrants which applied for study at the expense of individuals and/or legal entities were recruited based on the results of consideration of motivation letters. All the entrants must have a Certificate of Complete General Secondary Education or an equivalent document certified by the Ministry of Education and Science of Ukraine. **Recommendations:** none	fulfilled
4.	The results of student evaluations after the first year of study confirm the adequacy of the admission conditions applied for the evaluated study programme. **Findings from the Self-Evaluation Report/ Visit:**	fulfilled

	The results of the assessment of students' knowledge after the first year of study confirm the adequacy of the admission terms applied to the evaluated educational program. Passing statistics of students: 2019 - 76.2%; 2020 - 92.0%; 2021 - 78.3%. During the first semester of study, the entrance Rector's quality control of residual school knowledge of 1st-year students in mathematics, physics, and a foreign language is carried out (https://osvita.kpi.ua/node/183). The department analyzes the obtained results and forms a set of measures to correct the educational process and update the educational program. **Recommendations:** none	
5.	*Other requirements provided in the standards specific to the Bachelor's field/ study program*. **Findings from the Self-Evaluation Report/ Visit:** **Recommendations:**	Not the case
	B.1.2 Structure and presentation of the study programme	
1.	The study programme is presented in the form of a package of documents which includes: mission and aims general and specific goals; curriculum with the disciplines weighted in ECTS study credits, and with the disciplines successively arranged in the learning period; the syllabi of the disciplines included in the programme curriculum and the learning outcomes, flexible learning paths, as the case may be; modality of organisation and content of the study completion examination; compatibility with the national framework of qualifications; compatibility with similar study programmes from the European Union and/or from other world countries. **Findings from the Self-Evaluation Report/ Visit:** The following educational documentation is used to ensure the educational process: - educational program that contains a profile, a list of educational components and a structural and logical scheme (https://osvita.kpi.ua/sites/default/files/opfiles/171_OPPB_EKS_2022.pdf); - curriculum, which lists the educational components for the entire period of study, the amount of credits for their study and the distribution of hours (http://eds.kpi.ua/?page_id=6889); - work curriculum for each year of study, which details the types of educational activities by discipline with the distribution of hours, and indicates control measures for their evaluation (http://eds.kpi.ua/?page_id=7090#1 , Campus system); - syllabuses of disciplines, which present their program, full content by types of educational activities, control measures with distribution of points, literature and links to educational resources (http://eds.kpi.ua/?page_id=7090#1); - individual study plans of students, which are formed in their personal accounts in the Campus electronic system after they have chosen disciplines from the lists of optional educational components of the university-wide catalog (https://osvita.kpi.ua/sites/default/files/downloads/ZU-Katalog-2022.pdf) and of the professional catalog (http://eds.kpi.ua/wp-content/uploads/2021/03/F-Kataloh-171_EKS_bak.pdf). The study program is presented in the form of the next documents: 1. educational program, that includes profile of the educational program (general characteristics of the program, aim, etc.), list of educational components - disciplines, practices, etc., structural-logical diagram of educational components and links between disciplines, form of the final assessment (bachelor project), matrice of the competences and learning outcomes and their association with the disciplines, Educational program have free access via the links https://osvita.kpi.ua/sites/default/files/opfiles/171_OPPB_EKS_2022.pdf (Ukrainian language) and https://osvita.kpi.ua/sites/default/files/opfiles/171_OPPB_EKS_2022eng.pdf (English).	partially fulfilled

2. Curriculum, that includes the disciplines, their weight in ECTS credits and distribution between lectures, practices, laboratory works, type of the final assessment (exam or final test) and individual student assignments (course projects, course works). It should be noted that curriculum is placed in the free access via the link http://eds.kpi.ua/?page_id=6889 on the web-site, provided in the self-assessment of the department, is for the 2021 year admission. Other curriculums (2022, 2020, 2019) are available via web-site of the department: http://eds.kpi.ua/?page_id=6418

3. Syllabuses of the disciplines. The syllabuses are located in the department web-site under the link http://eds.kpi.ua/?page_id=7090#1 that was provided in the self-assessment report. It should be noted that some syllabuses there are missed (Informatics-1), some empty, some are with restricted access (located in Google Drive). Some disciplines have no syllabuses (instead of syllabuses is used "work program of the discipline"). In the same time, syllabuses also was found by evaluation panel members by link http://eds.kpi.ua/?page_id=7958, where all core disciplines syllabuses (translated to English) was presented, but many syllabuses of elective courses are missed.

4. Catalogs of the elective courses on university level (https://osvita.kpi.ua/sites/default/files/downloads/ZU-Katalog-2022.pdf) and on the educational program level (http://eds.kpi.ua/wp-content/uploads/2021/03/F-Kataloh-171_EKS_bak.pdf). It should be noted that educational program contains 14 positions for elective components ("Educational components 1 Faculty catalog"..."Educational components 14 Faculty catalog"). In the same time, catalog consists only description of 7 disciplines, so it is not clear what other disciplines students can select. In Ukrainian version of the department's web-site is possible to find the catalog of the elective disciplines on program level (http://eds.kpi.ua/?page_id=9226).

Recommendations:

- consider providing clear and consistent free access to the curriculum via the web-site of the institution in the same way as the educational program does on its own department site

- consider providing clear and consistent free access for the description (or syllabuses) of all elective professional-oriented disciplines (that can be selected by students in the positions "Educational components in the University catalog" and "Educational components in the Faculty catalog") of the educational program

2.	The personnel involved in the design/ implementation and evaluation of the content of the study programme has adequate academic and pedagogic experience. The teaching methods and learning activities are selected/ conceived so as to ensure the achievement of the programme outcomes.	fulfilled

Findings from the Self-Evaluation Report/ Visit:

The project group, which develops and periodically revises the content of the educational program, includes: the head of the department of electronic devices and systems, professors and associate professors of the department with scientific titles of Doctors of Science and Philosophy Doctors. The general learning style is task-oriented. Training is carried out in the form of lectures, seminars, practical classes, laboratory classes, and individual classes. When self studying, students can have consultations with lecturers. During teaching, information and communication technologies (e-learning, online lectures, OCW, distance courses) are used for individual educational components. Teaching methods are chosen in such a way as to ensure the achievement of program learning outcomes. In order to improve the content of the educational program and the methods and forms of teaching, the student surveys on the level of satisfaction with the program https://docs.google.com/forms/d/10r66xbDKBLb-I0- vIAQs7aMw0P6CE5yZBGxQK9IK2B4/edit?ts=6322fef7#responses, as well as methodical

	seminars for harmonizing the content of disciplines and the list of educational components of the program (http://eds.kpi.ua/?page_id=5040) are conducted annually. The personnel involved in the design and evaluation of the educational program "Electronic Components and systems" - Kateryna Klen (PhD in speciality 05.09.12 – Semiconductor converters of the electric energy), Tetiana Tereschenko (Doctor of Sciences on specialty 05.09.12 - Semiconductor converters of the electric energy), Yuliia Yamnenko (Doctor of Science degree on speciality 05.09.03 – Electrictrotechnical complexes and systems) and Yevhen Verbitskyi (Doctor of Sciences on specialty 05.09.12 – Semiconductor converters of the electric energy) have adequate academic and pedagogical experience. Teaching methods (task-oriented approach, e-learning during the pandemic time and blended learning in the time of war) and learning activities (lectures, seminars, practical classes, laboratory classes, and individual classes) that are selected for the implementation of the educational program are enough for the achievement of the program outcomes. **Recommendations:** no recommendations	
3.	The study programme curriculum is approved at institutional level. **Findings from the Self-Evaluation Report/ Visit:** Curricula under the educational program are developed by the Scientific and Methodical Commission on Speciality, signed by the Head of this Commission, the Head of the Department and the Dean of the Faculty, and then approved by the Head of the Academic Council of the University (http://eds.kpi.ua/?page_id=6889). All educational programs are approved in the proper way on the educational level: initially, at the level of scientific-methodological commission of the specialty (signature of Yuliia Yamnenko), than by Methodological council of NTU KPI (signature of Anatolii Melnichenko), than approved by Scientific council of NTU KPI (signature of Mykhailo Ilchenko and stamp of the NTU KPI), and finally, implemented by means of order of NTU KPI rector. In the same time, curriculums that attached to the self-assesment report and located at web-site of the department (http://eds.kpi.ua/?page_id=6418) contains empty fields "approved", head of scientific-methodological commission of the specialty, head of department etc. **Recommendations:** - consider placing the approved (scanned copies with the signatures and stamps) curriculums on the official web-site of the NTU KPI for better transparency.	fulfilled
4.	The programme curriculum is designed so that the corroborated learning outcomes declared for all the disciplines to ensure the achievement of the programme outcomes. **Findings from the Self-Evaluation Report/ Visit:** The curriculum and syllabuses of disciplines are drawn up in accordance with the educational program, within which about 50% of study time is provided for independent work of students. Therefore, the expected learning outcomes presented in the curriculum correspond to the results declared in this educational program, which students must achieve at the end of their studies (http://eds.kpi.ua/wp-content/uploads/2021/09/171-EKS_OP_bakalavr_2021-ENG .pdf , https://drive.google.com/file/d/1A2vko591FEbp20MM9cQjrncJ7nEKYnPv/view , http://eds.kpi.ua/?page_id=1148) **Recommendations:** - none	fulfilled
5.	Based on the content of the fundamental disciplines, the curriculum for the 1st year of study is conceived so that to help and motivate the students for the study of the engineering sciences.	fulfilled

	Findings from the Self-Evaluation Report/ Visit: The curriculum for the first year students includes such courses of general training as Physics, Mathematical Analysis, Analytic Geometry, Engineering and Computer Graphics, Informatics, History of Science and Technology, the content of which give the basis and motivation for studying the subsequent courses of vocational training (http://eds.kpi.ua/?page_id=6889). For students who aim to improve their level of knowledge of fundamental disciplines, there are adaptation courses in the University (https://kpi.ua/adapt). In addition, the first year students study the vocational course Measuring Technique, which considers general and introductory issues of electronics, the principles of functioning of electronic and electrical components and systems, and allows students to gain the understanding of the profession. Such disciplines as "History of Science and Technology", "Informatics" "Physics", "Mathematical Analysis", "Analytic Geometry", "Engineering and Computer Graphics" are the fundamental disciplines of 1st year of study. Their content helps the students to achieve fundamental competencies required for the professional disciplines in the field of speciality. At the same time, the content of the above fundamental courses are more "classical", e.g. standard tasks of calculations, programming, etc. **Recommendations:** - consider adding specialty-oriented tasks in the fundamental disciplines that will motivate the students for the study in the field of specialty in the following years.	
6.	The curriculum is structured so that to allow the graduation, during the period usually assigned for the study cycle of the programme. **Findings from the Self-Evaluation Report/ Visit:** The statutory bachelor training lasts three years and ten months and it is divided into eight semesters. During this period, students have the opportunity to pass all the normative courses of the educational program (http://eds.kpi.ua/?page_id=6889), as well as a number of optional courses to take the necessary amount of ECTS credits (240 credits). The curriculum consists of the disciplines with the total amount of ECTS credits equal to 240, with the equal number of credits per semester, equal to 30. The total number of weeks for the classes is equal to 18 for all semesters except the 8th. Based on the interviews with the graduates, it is structured in the way that allows the students successfully finish the program and allow graduation. **Recommendations:** no recommendations	fulfilled

7.	The curriculum reflects the student-centred learning, allowing flexible learning paths through optional and facultative disciplines and encouraging the students to have a proactive role in the learning process.	partially fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	The Curriculum (http://eds.kpi.ua/?page_id=6889) reflects a student-oriented approach and contains at least 25% of optional courses. Besides the courses of the program covering 240 credits, students can study additional courses at their own request under the terms described in the Regulation on the provision of additional educational services to students of higher education at National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (https://osvita.kpi.ua/sites/default/files/downloads/Pol_dodatkovi_osvitni_poslugy.pdf). Full information about the courses is displayed in the individual plans of the students, which are available in the Campus system. In addition, the specialized certificate program provided by the company "Progresstech" operates at the Department. In the framework of the program, the students can receive professional skills in the field of aviation electronic systems (http://eds.kpi.ua/wp-content/uploads/2022/07/Certificate_program_ProgresTech_EPS_FEL_bac_2022.pdf). Therefore, according to the above opportunities, the educational program has a flexible structure and allows students to make their own individual study plans, choosing optional courses that best suit their interests.

Curriculum has 25% of the elective components that divided into 2 elective disciplines (4 ECTS in total) in the field of general training, and 14 elective disciplines (56 ECTS credits in total) of professional training, that corresponds to the requirements of Ukrainian legalisation in the field of higher Education (at least 25% of ECTS credits should be covered by elective components). In the same time, analysis of the titles and the content of provided syllabuses shown that content of many elective courses are the same. For example, as elective component 1 student can select one of the proposed in the F-catalog following courses: "Design and modeling in electronics", or "Modeling in electronics", or "Modeling of dynamic processes in electronics", or "Modeling and Simulation in Electronics", or "Simulation of Electronic Devices and Circuits". As elective component 2 students can select one of the following courses: "Electromagnetic equipment" or "Theory of electromagnetic fields and processes in electrical engineering" or "Electromagnetic Engineering" or "Theory of Electromagnetic Fields and Processes in Electrical Engineering". Elective component 4: "Theory of signal processing" or "Spectral and wavelet analysis of discrete signals" or "Theory of Signal Processing" or "Spectral and Wavelet Analysis of Discrete Signals". Elective component 5: "Power electronics" or "Power electronic devices and devices" or "Power electronics" or "Power electronic devices". Elective component 6: "Electromagnetic devices" or "Modeling of electromagnetic components and their systems" or "Electromagnetic Devices" or "Modeling of Electromagnetic Components and Their Systems". Elective component 9: "Digital electronics devices" or "Digital circuitry" or "Devices of Digital Electronics" or "Digital Circuitry". Elective component 10: "Quantum electronics" or "Laser technology" or "Quantum electronics" or "Laser technology" or "Aircraft electrical systems*". Elective component 11: "Functional electronics" or "Computer modeling of functional electronics devices" or "Functional electronics" or "Computer simulation of functional electronics devices". Elective component 13: "Microprocessor devices" or "Basics of using microprocessors" or "Microprocessor devices" or "Basics of using microprocessors". In total, 9 elective components has no alternative - it is a duplication of one course, represented with different names or provided by different languages. In general, in F-catalog there are 21 unique courses for 14 elective components, so the list of elective courses should be extended and new courses should be added. Taking into account Ukrainian legalization in the field of higher education and recommendations of NAQA in the field of higher education in Ukraine, it is an inconsistency: "Analyzing the system of elective disciplines, the expert group has to evaluate the number and difference of disciplines offered for selection by students … When assessing compliance with this sub-criterion, the expert group should assume that deficiencies in the context of compliance with Criterion 2 will be considered situations where: | |

- … disciplines offered for choice mostly duplicate each other (for example, disciplines with different names have a similar content or mostly repeat it); … the procedure cannot lead to the fact that a particular discipline becomes mandatory." (https://naqa.gov.ua/wp-content/uploads/2020/12/%D0%A0%D0%B5%D0%BA%D0%BE%D0%BC%D0%B5%D0%BD%D0%B4%D0%B0%D1%86%D1%96%D1%97-%D1%89%D0%BE%D0%B4%D0%BE-%D0%B7%D0%B0%D1%81%D1%82%D0%BE%D1%81%D1%83%D0%B2%D0%B0%D0%BD%D0%BD%D1%8F-%D0%BA%D1%80%D0%B8%D1%82%D0%B5%D1%80%D1%96%D1%97%D0%B2-%D0%BE%D1%86%D1%96%D0%BD%D1%8E%D0%B2%D0%B0%D0%BD%D0%BD%D1%8F-%D1%8F%D0%BA%D0%BE%D1%81%D1%82%D1%96-%D0%9E%D0%9F.pdf).

The NTU-KPI approach to the package of elective discipline is that the disciplines in one package should have some 25% different topics, such that the common core topics are insured, regardless of the path chosen by the student.

   Recommendations:

- consider changing the approach for the elective components forming from groups, where students can select only one discipline from short list (3 or 4 proposed options) to free selection from the pool of elective disciplines;

- consider removing duplicated disciplines from the F-catalog of elective disciplines and extend the list of the elective courses in F-catalog, proposed for the students;

- consider transforming the common part of elective discipline into a compulsory discipline and propose as elective discipline the appropriate, unique content.

8.	The programme curriculum consists of fundamental, domain, specialty and complementary disciplines grouped in mandatory, elective and optional disciplines in accordance with the regulatory requirements established at national level and with the standards specific to the Bachelor's field/ study programme.	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	Requirements for the structure, content and design of curricula are determined by the Order No. HOH/47/2022 dated 07.02.2022 On the organization and planning of the educational process for the 2022-2023 academic year (Appendix 10).	
	The program "Electronic components and systems" curriculum consists of diciplines of general study (fundamental and those that formed soft-skills) and disciplines of the professional studies, grouped in mandatory (core) and elective. Such division is corresponds with the Ukrainian legalisation in the field of the higher education.	
	The content of the discipline allows their classification into ARACIS categories: fundamental disciplines are those in year I, domain disciplines are those in years II and III, specialty disciplines are those in year IV, roughly respecting the specific engineering requirements (fundamental disciplines 20%, complementar disciplines 5%, domain disciplines 50%, specialty disciplines 25%).	
	Recommendations:	
	no recommendations	
9.	The programme curriculum is designed so that to meet the educational needs of the employers, including the acquirement of practical skills.	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	The practical training of students is ordered by the Regulations on the procedure for conducting the practice of higher education Igor Sikorsky KPI (http://osvita.kpi.ua/node/184) and is provided through practical, seminar and laboratory classes, by performing applied experimental research on the topic of diploma project, and by completing pre-diploma internships held at enterprises with the appropriate specialization. The curriculum provides practical or laboratory classes for all the educational components of the professional training cycle, which form relevant competencies and program learning outcomes. As one of examples, the general competence 6, professional competences 1, 6, 8 are formed in the framework of the Circuit Design course, which corresponds to the program learning outcomes 1, 4, 8. Classes take place with the involvement of some modern technical equipment, including in the laboratories established at the Department together with partner enterprises, for example, Melexis on bachelor level and AJAX on master level. Some laboratory classes are conducted by means of specialized software (e.g., for simulation of electronic circuits, processes in electronic devices and components, etc.), that also meet the requirements of employers. In general, acquired competencies make graduates of the educational program competitive on the labor market, ensure employment and further development.	
	Recommendations:	
	- consider extension of practice training by adding the practice (internship) on the 2nd or 3rd year of study that should improve the acquire of practical skills.	
10.	The disciplines included in the programme curriculum are provided in a logical sequence and they are weighted by ECTS study credits.	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	The educational components of the educational program are presented in a logical sequence and in accordance with the structural and logical scheme of their study given in the educational program. There are no deviations in the logical sequence of disciplines, so students can reach required level for learning the material of the following disciplines by successful finishing of the disciplines in the previous study period.	

	The "weight" of each discipline in the program and individual educational components corresponds to the actual workload of students, the achievement of learning goals and outcomes, that was proved by the graduates. The time budget is defined by the Regulations on the Organization of the Educational Process (https://osvita.kpi.ua/node/39). Contact hours (lectures, practice and laboratory classes) have 47% out of 240 ECTS credits (total jumper of credit points in the program). According to the program, classroom hours are divided into lectures (24.5%), practical hours (13.4%) and laboratory hours (9.1%). The amount of student independent work for each course is regulated by the Curriculum and amounts to 53% of the total time volume allocated for studying the course. In order to receive feedback from students and to identify the difficulties in mastering the educational and scientific components of the program, the conversations with the students are held. According to the results of the survey, the students do not feel excessive workload and consider the time allocated for independent and other types of work to be adequate. **Recommendations:** no recommendations	
11.	The higher education institution disposes of internal mechanisms for the harmonization of the discipline contents and avoidance of their overlapping. **Findings from the Self-Evaluation Report/ Visit:** The educational program "Electronic components and systems" is one of the program in NTU KPI that are conducted in the field of specialty 171 "Electronics". All those educational programs have similar fundamental and professional-oriented core disciplines, that is required by the learning outcomes described in the official standard of the specialty 171 for bachelor level. In the same time, each program has unique disciplines that cover specialized skills. In the framework of the program, in order to avoid overlapping the content of courses within the educational program, the Department of Electronic Devices and Systems regularly holds methodical seminars where the logic and sequence of presenting the educational material are analyzed (http://eds.kpi.ua/?page_id=5040). It should be noted, that in general disciplines are not overlap each other and they are based on the content that was already studied in the previous semester. In the same time, there are some small overlaps so the overlaps with other programs are minimal. For example, solid state physics (zone theory, p-n junction and processes there) is studied in "Physical Fundamentals of Electronics" and "Solid State Electronics", reqctifiers and grid-driven inverters are studied in "Power Converters" and elective component "Power electronics", that should be omitted. **Recommendations:**	fulfilled
12.	The disciplines from the programme curriculum have syllabi with the objectives, basic thematic content, distribution of the number of courses, seminars, and applicative activities etc. by themes, minimal bibliography, adequate examination methods for the planned learning outcomes; the syllabi are signed by the course, seminar/ other applicative activity holder and by the head of department. **Findings from the Self-Evaluation Report/ Visit:** All core courses of the educational program "Electronic Components and Systems" have syllabuses, located at the web-site of the department. Each syllabus contains of the next parts: The requisites of the academic discipline, Description of the discipline, its purpose, subject of study and learning outcomes, Pre-requisites and post-requisites of the discipline (place in the structural and logical scheme of study according to the relevant educational program), Content of the academic discipline, Educational materials and resources, Methods of mastering an educational discipline (educational component), Individual student study, Policy of academic discipline (educational component), Types of control and rating system for evaluating learning outcomes, Additional information about discipline (educational component). Some syllabuses of elective components from F-catalog (professional-oriented elective disciplines) are missed, for example: "Digital information systems", "Regulation of	partial fulfilled

power quality parameters in distributed generation systems", "Electronics Computer-Aided Engineering", "Modeling of Electromagnetic Components and Their Systems", "Theory of Electromagnetic Fields and Processes in Electrical Engineering", "Simulation of Electronic Devices and Circuits", "Databases", "Spectral and Wavelet Analysis of Discrete Signals", "Power electronics". Taking into account internal NTU KPI regulations (https://osvita.kpi.ua/sites/default/files/downloads/Poryadok_syllabus_2021.pdf), "The syllabus of the optional academic discipline must be available for applicants at the time of choosing disciplines for the next semester (academic year)". It should be also noted, that syllabus is a document for the students, so students should know after reading the syllabus before the course was started all assignments, general information of laboratory works (not only numbers, but titles - especially important for elective disciplines). Some courses (e.g. https://drive.google.com/drive/u/2/folders/1vx4TG8nWugt_mH5f_dwgMPhF68J40YPr - Measuring techniques) have no titles of laboratory works that will be conducted by the students. The syllabuses, provided in the self-assesment form and placed on the web-site of the department are not signed by the course, seminar/ other applicative activity holder and by the head of department, but the internal NTU KPI regulations of the procedures for development and aprovement of syllabuses (https://osvita.kpi.ua/sites/default/files/downloads/Poryadok_syllabus_2021.pdf) don't mentioned signatures of mentioned above persons. **Recommendations:** - consider the development syllabuses for all elective components (disciplines) that are proposed for the students' selection before the time of choosing disciplines for the next semester/academic year. - consider the optimization of syllabus structure for the orientation of their content on students (clear information what student should do and what student will reach when successfully finished the educational component).	
13. The syllabi provide correlations between the declared learning outcomes which the discipline contributes to, its content and the modality of evaluating the learning outcomes acquired by the student. **Findings from the Self-Evaluation Report/ Visit:** The content of syllabuses are correlate with the declared learning outcomes which the discipline contributes to. The content of the syllabuses also correlate with the modality of evaluation of learning outcomes acquired by the students. In addition to syllabuses, the question lists devoted to the semester control for each course of the educational program is developed and student has the access to it through learning management system. **Recommendations:** no recommendations	fulfilled
14. The syllabi reflect the student-centred learning, including by providing activities specific to the individual study (homework, individual or team projects etc.) and their inclusion in the evaluation process. **Findings from the Self-Evaluation Report/ Visit:** In general, syllabuses reflect student-centered learning, and they include information about individual tasks for students, the content of the disciplines, assignments and homeworks, as well as procedures of evaluation of study results. Also, content of the syllabuses includes information, how such individual tasks included in the evaluation process. It should be noted, that about 50% of the study time in each course is devoted to independent work, which allows students to study the material of interests individually within the course. In the same time, some syllabuses of course works doesn't explain in detail the content of possible topics of the work (e.g. https://drive.google.com/drive/u/2/folders/19EaDQQdyiFuO4PhHF8Aijpt99ppJnTB0). Such a description is important for the student-centered learning, because in this case students can consider the possible topics that are in area of their interests before the beginning of the semester.	fulfilled

	The results of non-formal/informal education, as a part of student-centered learning approach, can be partially credited according to the procedure outlined in the Regulations (https://osvita.kpi.ua/node/179). It is possible to take courses on the online platforms like Coursera, EdEra, etc. and enroll the results within a certain course according to the rules given in its syllabus. Such approaches undoubtedly contribute to a student-oriented learning process. **Recommendations:** - consider to update the course works syllabuses and add information about possible topics of the course works so student cant select the topic that are in the area of interests before the beginning of the semester.	
15.	The nomenclature of the disciplines contained in the programme curriculum and the content of such disciplines indicated in syllabi correspond to the Bachelor's field and study programme. **Findings from the Self-Evaluation Report/ Visit:** The nomenclature of the disciplines contained in the programme curriculum and the content of such disciplines indicated in syllabi, as well as the content of such disciplines are fully correspond to the Bachelor's field and study programme. **Recommendations:** no recommendations	fulfilled

16.	The academic year is structured on two semesters of 14 weeks on average, with 22-28 classes/week, depending on the university education fields, except the study programmes regulated under the directives of the European Union.
	Findings from the Self-Evaluation Report/ Visit:
	Each academic year is divided onto 2 semesters. Each semester (except 8th) has 18 academic weeks for the contact hours (lectures, practices, laboratory works) and independent students work, and 2 weeks exam session. 8th semester has 9 and 1 week, respectively. In addition, 8th semester has 5 weeks of practice, 4 weeks for the preparation of final bachelor project and 2 weeks of final attestation (defence of final bachelor project). Such distribution of work during the semester is in accordance with Ukraininan legalisation in the area of higher education.
	In accordance to the curriculum-2022 number of the contact hours per semester are the next:
	   • 1st semester - 29 contact hours per week,
	   • 2nd semester - 29 contact hours per week,
	   • 3rd semester - 28 contact hours per week,
	   • 4th semester - 23 contact hours per week,
	   • 5th semester - 20 contact hours per week,
	   • 6th semester - 23 contact hours per week,
	   • 7th semester - 24 contact hours per week,
	   • 8th semester - 24 contact hours per week.
	More contact hours for the 1-3 semester can be explained necessity of more contact work with the students on the beginning of the study process. In the same time, it is not clear why 5th semester has only 20 contact hours, especially taking into account that it contains such important disciplines as "Circuit design" and "Analysis and calculation of electronic circuits" which require descent amount of contact hours.
	Recommendations:
	- consider the possibility to increase the number of the contact hours for the 5th semester to 23-24 (such changes are recommended to be implemented by means of increasing the contact hours for the disciplines "Circuit design" and "Analysis and calculation of electronic circuits".)
		fulfilled

17.	Each semester shall have 30 ECTS study credits for the mandatory disciplines (including those selected by the student from the category of optional disciplines), irrespective of the form of education. **Findings from the Self-Evaluation Report/ Visit:** According to the educational program and the Curriculum (http://eds.kpi.ua/wp-content/uploads/2021/09/171- EKS_OP_bakalavr_2021-ENG.pdf, http://eds.kpi.ua/?page_id=1148), the total volume of mandatory educational components amounts to 180 ECTS credits, the total volume of optional educational components amounts to 60 ECTS credits, and the total volume of the educational program is equal to 240 ECTS credits. Each semester covers 30 ECTS credits for the courses including those the students choose from the category of optional courses, regardless of the study form. **Recommendations:** no recommendations	fulfilled
18.	The optional disciplines, irrespective of the study semester in which they are provided in the programme curriculum, complete with an examination, and the credit points which are granted are in addition to the 30 credit points of the respective semester. **Findings from the Self-Evaluation Report/ Visit:** Ukraine legalisation in the field of higher education requires 25% of ECTS credits of each educational program devote to the elective disciplines. Their credit points should be included in 30 ECTS credits of each semester. There can be so called "non-credit" disciplines, that extends the semester to more that 30 ECTS credits for the student, but their presence is not obligatory required. Curricula of the educational program "Electronic components and systems" contains only core and elective components, there are no non-credit disciplines in the curricula. **Recommendations:** - consider adding free elective disciplines (with credits in addition to the 30 compulsory credits of the semester) to the curricula	fulfilled
19.	The ratio between the course hours and the hours of applicative didactic activities – seminars, laboratories, projects, practice etc. should be in accordance with the standards specific to the Bachelor's field/ study programme. **Findings from the Self-Evaluation Report/ Visit:** The distibution between contact hours (lectures, practical classes, laboratory classes) and student's independent work are almost equal. In accordance to Ukrainian legalisation in the field of higher education contact hours should laid in the range from ⅓ to ⅔ of total hours in respect for each discipline of the educational program (except practices (internships) and diploma work/project). It is recommended to have more contact hours on first and second year of study because usually students require more direct communication with academic staff in that time. Educational program "Electronic components and systems" fulfill those requirements. Auditory hours have 47% of the total volume of the educational program. According to the program, auditory hours are divided into lectures (24.5%), practical classes (13.4%) and laboratory classes (9.1%). 53% of the volume of the program is allocated to independent work of students, which meets the requirements for the structure of the educational program according to the standard of specialty 171 Electronics. (https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/12/21/171-elektronika-bakalavr-VOzatv.stand.01.11.pdf) As such the course to application ratio is 1:1. **Recommendations:** - none	fulfilled
20.	At least 50% of the forms of verification of the disciplines provided in the programme curriculum are examinations. **Findings from the Self-Evaluation Report/ Visit:**	partially fulfilled

	Either normative or optional courses of the educational program should have a semester certification - an exam or final test. The session for exams is organized after 18 academic week of the semester, and the final tests are given in the last academic week of the semester. According to the results of the semester certification, the student receives an assessment based on the 100-point system and the national system. There can be no more than three exams per semester. For each exam 1 ECTS credit is assigned for preparation. The examination session lasts two weeks, the exams are held no more than once every three days. So, description the fact that number of exams (20) is less than number final tests (42), and number of exams are less than 50% (20/62), each discipline has final verification. **Recommendations:** - consider to increase the number of exams in the educational program for reaching at least 50%.	
21.	The programme curriculum provides 2-3 weeks of practice per year as of the second year of study, and for the preparation of the graduation thesis in the last year of study. **Findings from the Self-Evaluation Report/ Visit:** In accordance the Ukrainian legalization in the field of higher education, final attestation (graduation theses or complex final exam), as well as minimum number of ECTS credits devoted to the practice is described in the standards of higher education fore specified filed of study and level of the higher education (bachelor, master or PhD). In accordacne to the standart of the education in the specialty "Electronics" for the bachelor level (https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/12/21/171-elektronika-bakalavr-VO-zatv.stand.01.11.pdf) the minimal number of ECTS credits for practice is 4. Study program "Electronic components and systems" in NTU KPI has one practice (pre-diploma) in 8th semester, with duration of 5 weeks and 6 ECTS study credits. It corresponds the minimal requirements. In the same time, it is partially compliant the requirements of ARACIS and EUR ACE label. Program "Electronic components and systems" as a final attestation has bachelor project (graduation theses) in the final, 8th semester. Such type of the graduation attestation is corresponds with the requirements of the Ukrainian standard of the higher education for the bachelor level and specialty "Electronics" and international requirements. **Recommendations:** - consider the introduction in the curriculum of practice/ internship in enterprise, for a total of at least 6 weeks (with 30 hours/week workload) - consider publishing the list of the companies that are ready to host the students for the practice with contact details.	partially fulfilled
22.	For the practice periods, the higher education institution has concluded collaboration agreements, contracts, or other documents with the practice units, which provide: the location and period of practice, modality of organisation and guidance, persons in charge from the education institution and practice unit etc. **Findings from the Self-Evaluation Report/ Visit:** The practical training of the University students is regulated by the Program (http://eds.kpi.ua/?page_id=4994), which describes the purpose, content and procedure of the practice. The bases for student practical training are enterprises, institutions, organizations of various types of economic activity, as well as structural units of the University. The appointment of practice bases is carried out through direct agreements with enterprises, institutions, organizations, as well as through partnership and cooperation agreements, which stipulate place and period of practice, method of organization and management, responsible persons. Among the permanent partners providing practice bases for the students studying under the educational program Electronic components and systems (https://dnvr.kpi.ua/contracts_fel/): - Progresstech-Ukraine LLC - Silpo-Food LLC - Metinvest Digital LLC - Research and Innovation Firm Venbest LLC - Kostal Ukraine LLC - Ajax Systems Manufacturing LLC - Branch Establishment Melexis-Ukraina - Ekta company - Ukrainian Atom Instruments and Systems Corporation - Research Institute of	fulfilled

	Electronics and Microsystems Engineering - Institute of Physics of the National Academy of Sciences of Ukraine - V.Ye. Lashkaryov Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine - E.O.Paton Electric Welding Institute of the National Academy of Sciences of Ukraine - V. Bakul Institute for Superhard Materials of the National Academy of Sciences of Ukraine - State enterprise plant Generator - Kyiv Subway Municipal Enterprise. The Existing page http://eds.kpi.ua/?page_id=4994 contains general information about pre-diploma practice but has a lack of information about where exactly it can be carried out. **Recommendations:** - consider publishing the list of the companies that are ready to host the students for the practice with contact details.	
23.	The practice syllabi are adequately prepared, being focused on the students acquiring the practical skills which to allow them, after graduation, to get a job on the labour market. **Findings from the Self-Evaluation Report/ Visit:** Educational program "Elctronic components and systems" has one pre-diploma practice in the 8th semester. The syllabus of the practice is prepared in accordance to the NTU KPI requirements. In general, practice is focused on obtaining practical experience by students, and based on the agreement with industry companies (company "Fozzy Group", company "Metinvest Digital", etc). The pre-diploma practice is regulated by the Program (http://eds.kpi.ua/?page_id=4994), which describes its purpose, content and procedure. The main tasks of practice that mentioned in the program are as follows: - deepening and consolidating acquired theoretical knowledge and skills in professional courses; - practical implementation of the theoretical provisions of the courses of general and vocational training; - formation of professional skills, gaining experience in solving specific engineering problems; - gaining experience in organizing professional activities, stimulating and developing cognitive activity, striving for self-education, creative thinking; - familiarization with advanced equipment, technology, labor organization and production economy at the enterprises; - practical training of students for independent work in relevant positions of electronics specialists. **Recommendations:** - consider the introduction in the curriculum of practice/ internship in enterprise, for a total of at least 6 weeks (with 30 hours/week workload) - consider publishing the list of the companies that are ready to host the students for the practice with contact details.	Not the case
24.	The graduation examination is a summary examination which certifies the assimilation of the learning outcomes corresponding to the university qualification (study programme). **Findings from the Self-Evaluation Report/ Visit:** Certification of higher education students with a bachelor's degree in the specialty 171 Electronics, according to the relevant standard of higher education (https://mon.gov.ua/storage/app/media/vishchaosvita/zatverdzeni%20standarty/12/21/171- elektronika-bakalavr-VO-zatv.stand.01.11.pdf) is carried out in the form of a public defense of a qualification work (bachelor thesis). The qualification work should focus on a solution of a complex specialized engineering and technical task or a practical issue applying the theories and methods of electronics. In 2022, due to introduction of the martial law, on the basis of the order of the Ministry of Education and Science of Ukraine No. 265 dated 21/03/2022 "On the certification of graduates of vocational pre-university and higher education institutions" (https://mon.gov.ua/ua/npa/pro-provedennya-atestaciyi-vipusknikiv-zakladiv-fahovoyi-peredvishoyi-vishoyiosviti) and the order of Igor Sikorsky KPI No. HY/55/2022 dated 03/22/2022 "On measures to organize and conduct the educational process during the legal regime of the martial law" (https://document.kpi.ua/2022_HY-55), the issue of graduation certification of bachelors was left to the decision of graduation departments. As a resut of consultations with the management of the Faculty of Electronics, student self-government and the graduates of the final (4) course,	fulfilled

	the Department of Electronic Devices and Systems made a decision to replace a qualification work (bachelor thesis) with a final qualification exam. This ensured equal opportunities for students, both who had the conditions to complete their graduation work and who, due to military operations, did not have access to a computer and high-quality internet connection. Therefore, 45 students had a final qualification exam, but for 4 students who had prepared their graduation thesis, the exam included the questions related to the specific subject of their theses. **Recommendations:** no recommendations	
25.	The themes for the preparation of the final paper (graduation theses) contain subjects proposed by/ developed in collaboration with the industry. **Findings from the Self-Evaluation Report/ Visit:** The topics of students' diploma theses are formed on the basis of requests from enterprises and are made public for students to choose on the website of the department (http://eds.kpi.ua/?page_id=3023). While working under diploma projects, students can ask representatives of enterprises for advise on their research. For example, in 2022, the following diploma theses were completed in cooperation with enterprises: - Dobrynskyi Bohdan "Converter for electrolytic hydrogen production systems", Enterprise DTEK (https://dtek.com/en), - Manzheliy Anton "Electric bicycle - urban transport of the future", ELEEK firm (https://eleek.com.ua/en/), - Rudyk Vitaly "Software and hardware platform for lighting the building facade", Noosphere Engineering School (https://noosphereengineering.com/), - Stepanenko Dmytro Volodymyrovych "Converter for electric welding, electric cutting and coagulation of living tissues", Enterprise PATONMED® (http://patonmed.com.ua/en/apparatuses). Meeting with representatives of employers and industry stakeholders proved the facts that there are some topics that were proposed by the industry. **Recommendations:** no recommendations	fulfilled
26.	The structure of the study programme remains unchanged for one study cycle; it may be modified only as of the 1st year of the following academic year. **Findings from the Self-Evaluation Report/ Visit:** The structure and content of the educational program is revised, improved and updated once a year in accordance with the Regulation on the development, approval, monitoring and revision of educational programs at Igor Sikorsky KPI (https://osvita.kpi.ua/node/137). Monitoring of the educational program is carried out annually by the Department, Educational and Scientific Center of Applied Sociology "Socioplus", Educational and Scientific Center of Innovative Monitoring of Education Quality. Besides, experts, practicing professionals, higher education providers and other stakeholders are involved in the monitoring. Monitoring includes: an annual survey of the participants of the educational process involved in the implementation of the program (students, academic staff, supporting staff, administrative and management staff of the University); survey of graduates, employers and other external stakeholders; check of residual knowledge of students. However, those changes are implemented only for the next study cycle, so it means, study program remains unchanged for one study cycle in general (except the cases when the standard of the higher education in specialty 171 "Electronics" for bachelor level was changed). In such case of changing the educational program, when study program was changed during the study cycle, transitional work curricula are created for students who entered earlier. **Recommendations:** no recommendations	fulfilled
27.	*Other requirements provided in the standards specific to the Bachelor's field/ study program*. **Findings from the Self-Evaluation Report/ Visit:** **Recommendations:**	Not the case

	B.1.3 Relevance of the study programme	
1.	The study programme is designed by involving the representatives of the academic sector, including students, industry and economic sector, and labour market. **Findings from the Self-Evaluation Report/ Visit:** The educational program is developed in cooperation with students, academic staff, supporting staff, administrative and management staff of the University, as well as of graduates and employers. Proposals for changing or additing the content of the educational program are periodically discussed at methodological seminars of the Department of Electronic Devices and Systems with the involvement of stakeholders and scientists (http://eds.kpi.ua/?page_id=133). **Recommendations:** - none	fulfilled
2.	The study programme is revised on regular basis by considering the peer-reviews together with students, graduates, and representatives of the employers, in this way benefiting from external expertise and reference points. **Findings from the Self-Evaluation Report/ Visit:** Monitoring of the educational program includes: an annual survey of the participants of the educational process involved in the implementation of the program (students, academic staff, supporting staff, administrative and management staff of the University); survey of graduates, employers and other external stakeholders; check of residual knowledge of students (https://document.kpi.ua/2021_HOH-89, https://document.kpi.ua/2020_1-131). **Recommendations:** - none	fulfilled
3.	The higher education institution disposes of mechanisms for annual peer-review of the way in which knowledge is transmitted to and assimilated by students. **Findings from the Self-Evaluation Report/ Visit:** Complex monitoring at the University is carried out every semester in the groups of each specialty in such a way that in one year the monitoring covers all academic groups of the given specialty of the corresponding course. The rector's quality control of the residual knowledge of KPI students is carried out in accordance with the Regulations on the rector's quality control of the residual knowledge of KPI students (https://osvita.kpi.ua/node/183). The following blocks of courses are covered by the rector's control: a) fundamental courses; b) computer science; c) foreign language; d) professionally oriented courses; e) professional courses. After each round of complex monitoring, the Institute of Monitoring the Education Quality send the general results of the monitoring and the personalized results of the rector's control of each student to the relevant departments of the University to analyze and implement a set of necessary measures. Each semester, the Department analyzes the results of complex monitoring and rector's quality control of the residual knowledge, and forms a set of measures to improve the quality of student training and update the educational program. At the beginning of each subsequent semester, the results of the session under the educational program are analyzed, and, if necessary, the relevant changes are made in the educational program and in the syllabuses of the courses. **Recommendations:** - none	fulfilled
	B.1.4 Organisation and coordination of the study programme	

1.	The didactic process is organised and coordinated so that to ensure the fulfillment of the mission and aims and achievement of the programme outcomes.	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	The structural and logical scheme connecting all the educational components of the educational program (https://osvita.kpi.ua/sites/default/files/opfiles/171_OPPB_EKS_2022.pdf) shows the consistency of the courses and their conformity to the general direction of the program. The sequence of studying the courses is regulated by the Curriculum. The pre-requisites and post-requisites for each educational component are appointed in the relevant syllabuses. Successful mastering of all mandatory courses of the Curriculum is the key to achieving the goals of the program, as shown in the table of correspondence of learning outcomes and competencies to educational components. Studying optional subjects allows students to strengthen their competencies and learning outcomes.	
	Recommendations:	
	- none	
2.	There are prerequisites set to ensure the development of the skills by natural and correlated accumulation of knowledge and skills mentioned in the syllabi (for example, conditioned discipline groups).	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	The Inheritance of the disciplines studying of the curriculum is ensured by increasing the complexity of the material provided for study. As an example, we can cite a number of interrelated disciplines, within which with a certain extent the same concepts are studied, but with a gradual increase in complexity: "Mathematical analysis" (1 year spring and autumn semesters, 2 year autumn semester): differential equations, their types, solution methods, Fourier series, Fourier integral, matrix analysis are studied. "Theory of electric circuits" (2nd course, autumn semester): the acquired knowledge of mathematical analysis is used to calculate transient and steady-state processes by composing and solving differential and difference equations. Convolution integral (Duhamel integral), passive and active quadrupoles are considered. "Computational mathematics" (2nd course, autumn semester): finite differences, approximation methods, methods of solving the Cauchy problem, boundary value problems are studied. Analogies are drawn with methods of calculating processes in electric circuits. "Theory of signal processing" (3rd year, autumn semester): convolution calculation methods, spectral analysis based on continuous and discrete Fourier transform are considered "Analysis and calculation of electronic circuits" (3rd year, fall semester): methods of circuit analysis using graph theory and matrix analysis are studied. The transfer functions of passive and active quadrupoles, the calculation of their processes are calculated and investigated.	
	Recommendations:	
	- none	
3.	The results of the analyses regarding the quality of the student evaluation with regard to the developed skills confirm the adequacy of the evaluation methods used and the proper deployment of the process.	fulfilled
	Findings from the Self-Evaluation Report/ Visit:	
	Learning outcomes are monitored in the electronic system Campus based on the rating system published at the first lesson, in several stages (https://osvita.kpi.ua/node/32): 1 - current control. The point system evaluates the student's current work during the semester. The teacher can emphasize the need to improve the work results of a specific student. 2 - calendar control. The intermediate results of education for 7-8 and 14-15 weeks of study in each semester are summarized. At the time of control, the maximum number of points that students can gain by performing all types of work is set for each discipline. A positive result is considered if the student scored 50% or more of this maximum. The Department analyzes the results of the calendar control, finds out the reasons why students have unsatisfactory results and provides recommendations for improving the results. 3 - semester control, i.e. credits and exams at the end of the semester. The final grade is set	

	according to the current rating received by the student during the semester. The minimum limit of positive evaluation is 60 points. The exam provides additional control measures, based on the results of which points are scored. The total grade for the discipline where the exam is scheduled consists of the starting semester rating (40-50 points) and the exam grade (60-50 points). Thus, control measures are carried out throughout the semester and provide an opportunity to react to a possible deterioration in the quality of education, to find out the reasons for such deterioration and to respond to them in a timely manner. At all stages, students have access to information about the results of the evaluation of their educational activities in the electronic system Campus, can anonymously evaluate the teacher's work after the end of the semester, and pass a survey on satisfaction with the material taught within the discipline. The requirements for the evaluation system are the same for all disciplines, prescribed in the Regulation on the evaluation system of study results at Igor Sikorskyi KPI (https://osvita.kpi.ua/index.php/node/37) and are mandatory for use by all teachers of the university. The evaluation criteria of various types of works are an integral part of the syllabuses of the disciplines, are considered by the Department and the methodical commission of the faculty, which ensures the objectivity and adequacy of the evaluation of the learning results and their compliance with the requirements of the educational program. **Recommendations:** - none	
4.	The achievement of the learning outcomes of the disciplines is adequately assessed. **Findings from the Self-Evaluation Report/ Visit:** Evaluation of learning outcomes is carried out in accordance with the requirements of the Regulation on the system of evaluation of learning outcomes at Igor Sikorskyi KPI (https://osvita.kpi.ua/node/37) and Regulations on current, calendar and semester control of study results at Igor Sikorskyi KPI (https://osvita.kpi.ua/index.php/node/32). In these regualtions are claimed: - the purpose, main tasks, principles and mechanisms of implementation of the comprehensive assessment of the training of higher education applicants are determined; - the monitoring process and basic control measures are regulated to determine the level of competences, knowledge, skills acquired by higher education graduates, their compliance with the requirements of educational programs at a certain level of higher education; - the procedure for liquidation of academic debts is determined. In the Regulation on the system of evaluation of learning results in Igor Sikorskyi KPI is mentioned that the algorithms for forming the evaluation of the academic discipline for credit and exam cases are uniform for the entire university and provide for the use of a 100-point scale. Point assessment of all types of work is provided, in accordance with the curriculum. For each control measure, taking into account the importance, laboriousness and volume of work, evaluation criteria are developed in the system "quality of learning results - rating points" with the determination of certain levels of mastering the learning material and the formation of skills. This ensures the adequacy of the assessment of learning outcomes. **Recommendations:** - none	fulfilled
5.	The students are supported in the didactic activities or by other specific actions to understand the necessity of continuing their education through lifelong learning to maintain, after graduation, an updated level of their knowledge in the studied field. **Findings from the Self-Evaluation Report/ Visit:** Within the time allotted for each discipline, consultations with students are provided, during which the student can get an explanation of a question he does not understand and help in solving practical problems. At the same time, both face-to-face meetings and an asynchronous format of communication in messengers and by e-mail are used. Students can get involved in scientific clubs to deepen and expand their knowledge and professional competences in a playful way and to form didactic material from disciplines of their choice. In some disciplines,	fulfilled

	there is provision for recognition of learning outcomes obtained by taking distance courses on such platforms as Coursera, Prometheus and others. The content of the lecture material is regularly updated to acquaint students with current trends in the field to which this educational program belongs. **Recommendations:** - none	
6.	The ratio between the number of teachers and the number of students enrolled in the evaluated study programme complies with the provisions of the standards specific to the Bachelor's field of the programme. To assess the quality, it is considered that a teacher has the primary working hours in a single university. **Findings from the Self-Evaluation Report/ Visit:** The number of full-time students for one full-time position of a teacher in state-owned higher educational institutions for the educational qualification level of a bachelor is regulated by Resolution of the Cabinet of Ministers of Ukraine No. 1134 of August 17, 2002 (https://zakon.rada.gov.ua/laws/show/1134-2002-%D0%BF#Text). For the "Electronics" specialty, the standard number of students is 11. The number of teachers in the staff of the educational program support group is chosen in compliance with the law. The teaching staff of the department consists of 73% full-time teachers and 27% part-time teachers. **Recommendations:** - none	fulfilled
7.	The study batches – series, groups, sub-groups – are sized so that to ensure the efficient deployment of the educational process. **Findings from the Self-Evaluation Report/ Visit:** The schedule of classes is centralized in the control room of the educational department of the department of the organization of the educational process, taking into account the capacity of the classrooms and the limit on the number of classes per day and academic week and published on the site rozklad.kpi.ua. **Recommendations:** - none	fulfilled
8.	From the timetable of the evaluated study programme results the possibility of normal deployment of the educational process, in accordance with the law. **Findings from the Self-Evaluation Report/ Visit:** The schedule of educational classes regulates the organization of the educational process at the University, and is compiled on the basis of working study plans, taking into account the actual number of students in series and groups. When teaching in a mixed mode, which operated during the pandemic and after the start of hostilities, lectures and practical classes were held on different days, lectures are carried out remotely, and practical and laboratory classes - face-to-face. Schedules of classes and examination sessions are posted on the University website http://rozklad.kpi.ua with a limit of no more than 4 classes per day and 14 classes per week, while the schedule is planned in such a way that there are no large time gaps between adjacent lessons. The schedules of classes of all forms of education are brought to the attention of teachers and students no later than 10 days before the beginning of each semester, and the schedule of the examination session - a month before its beginning. The loading of classroom and laboratory funds is controlled by the University's educational department. **Recommendations:** - none	fulfilled

9.	The results obtained by the student during years of study are registered in the Academic Record, and they are attested based on the Diploma Supplement. **Findings from the Self-Evaluation Report/ Visit:** All grades of current and semester control of students are registered in the Electronic Campus system and are available to students in their personal account. These grades are transferred to the supplement to the diploma, which is issued to the student after graduation or to the academic certificate in case of early termination of studies. The university has a Procedure for ordering, printing, issuing and accounting for academic certificates at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/122), which regulates the procedure for registration of study results of students who were expelled from the university before graduation under a certain educational program, participate in academic mobility programs, need confirmation the results of the educational component upon completion of the PhD program. Students who have successfully completed their studies under educational program are issued a European-style diploma and supplement. Their form is also approved by the Ministry of Education and Science of Ukraine (order of the Ministry of Education and Science of Ukraine dated 25.01.2021 No. 102, registered in the Ministry of Justice of Ukraine on 29.01.2021 under No. 122/35744 (https://zakon.rada.gov.ua/laws/show/z0122-21#Text). **Recommendations:** - none	fulfilled
10.	The higher education institution has regulated the procedure for the promotion of the student from one year of study into another, depending on the accumulated ECTS study credits, and the procedure of covering two years of study in a single year, in accordance with the legal regulations in force. **Findings from the Self-Evaluation Report/ Visit:** The University has a Regulation on the expulsion, interruption of studies, renewal and transfer of students of higher education in Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/178), formed on the basis of the Law of Ukraine "On Higher Education" (https://zakon.rada.gov.ua/laws/show/1556-18#Text). This regulation prescribes the criteria for the implementation of the individual study plan and the grounds for expelling students from the university. Individual study plans provide, as a rule, 30 credits per semester, which must be credited to the student according to the results of his studies. **Recommendations:** - none	fulfilled
11.	For accreditation, the series of graduates of the higher education institutions authorized to operate on temporary basis have taken the Bachelor's exam in accredited institutions with the same Bachelor's field or study programme, established by ARACIS. The teachers who have carried out activities in the faculties or study programmes which the candidates taking the respective Bachelor's degree examination come from shall not be part of the examination commissions. **Findings from the Self-Evaluation Report/ Visit:** The program was accredited; this is an evaluation for maintaining the accreditation. **Recommendations:** - not the case	Not the case
	B.1.5 Partnerships	
1.	The partnerships concluded with public and private organisations for the practice of the students are sufficient and with an adequate content (regarding the practice period, number of practice locations, tutorship guaranteed in the company etc.) in order to obtain the expected results of the study programme.	fulfilled

	Findings from the Self-Evaluation Report/ Visit: The partnership relations with enterprises, institutions, organizations of various types of economic activity concluded for students' practice are sufficient and adequate to ensure the full implementation of the practice program. Student practice is conducted in accordance with the Methodological Guidelines (http://eds.kpi.ua/wpcontent/uploads/2020/05/%D0%9C%D0%B5%D1%82%D0%BE%D0%B4.%D0%B2%D0%BA%D0%B0%D0%B7%D1%96%D0%B2%D0%BA%D0%B8_%D0%9F%D1%80%D0%B0%D0%BA%D1%82%D0%B8%D0%BA%D0%B0_%D0%B1%D0%B0%D0%BA-2019.pdf). The University concluded comprehensive agreements with the following enterprises, organizations and institutions: (https://dnvr.kpi.ua/contract_all/): - Progresstech-Ukraine LLC - Institute of Physics of the National Academy of Sciences of Ukraine - State enterprise plant Generator - Kyiv Subway Municipal Enterprise - State concern Ukroboronprom - Ministry of Digital Transformation of Ukraine - Ukrainian Atom Instruments and Systems Corporation - Silpo-Food LLC - Arsenal Special Device Production State Enterprise The Faculty concluded cooperation agreements with (http://eds.kpi.ua/?page_id=133): - Branch Establishment Melexis-Ukraina - Arsenal Special Device Production State Enterprise - individual entrepreneur Gramarchuk Yu.O. - individual entrepreneur Ushakov D.R. - Institute of Applied Physics and Biophysics of NASU - JSC HC Ukrspetstechnika - GlobalLogic Ukraine LLC. **Recommendations:** - consider publishing the list of the companies that are ready to host the students for the practice with contact details.	
2.	There are partnerships concluded with organisations with which prior consultations were held in order to identify the educational needs of the study programme (see criterion A.1.2.5) **Findings from the Self-Evaluation Report/ Visit:** In order to improve the content of the educational program, students surveys regarding satisfaction with the educational program as a whole and its individual educational components are regularly conducted, consultations with employers are regularly held. A number of theses is devoted to the issues suggested by employers, and is performed with their active consultations. In framework of the educational program, a certificate program of teaching the courses aimed at acquiring professional competences in the field of aviation electronics by practicing lecturers is implemented in cooperation with the company Progresstech-Ukraine LLC. **Recommendations:** - none	fulfilled
3.	The partnerships concluded with other higher education institutions from abroad correspond for the purpose of achieving international mobility and achievement of programme outcomes. **Findings from the Self-Evaluation Report/ Visit:** Students and academic staff involved in the educational process within the framework of the educational program, thanks to the possibilities of academic mobility, in accordance with the Regulations on academic mobility of Igor Sikorsky KPI (http://osvita.kpi.ua/sites/default/files/downloads/Pol_pro_akadem_mobil.pdf), maintain ongoing contacts with foreign colleagues, publish articles in leading international journals, participate in international conferences, pass internships abroad. Among the partner Universities, the following can be noted: Wroclaw Polytechnic, Poland; University of Warwick, UK; University of Lorraine, France; Polytechnic Institute of Setubal, Portugal. Lecturers from foreign universities are involved in teaching within the educational program. For example, in November 2020, under the Erasmus+ program, Dr. Damien Guilbert from Université de Lorraine, GREEN laboratory, Henri Poincaré IUT of Longwy, France gave lectures for the students studying under the educational program (https://eds.kpi.ua/?p=6631). The possibilities of double degree programs contributes to the internationalization of students' activities. An application for participation in the "2021 U.S. - Ukraine Cybersecurity Research	fulfilled

	Competition" from the CRDF Global fund of the US State Department for a joint Ukrainian-American research team with the participation of the guarantor of the educational program and 1 student was submitted. The application has been approved, the work starts in 2022. **Recommendations:** - none	
	B.2 Learning results	
	B.2.1 Pass rate of students and graduates	
1.	For the accreditation of the study programme, the higher education institution should prove as follows: - minimum 51% of the total graduates of each series have passed the Bachelor's degree examination; - minimum 40% of the graduates of the first series are hired with legal labour contract on positions corresponding to the specialization obtained when graduating. **Findings from the Self-Evaluation Report/ Visit:** The results of graduating students under the educational program Electronic components and systems are the following. 2022 year: 21 students graduated with bachelor's degree (100% of degree applicants). Among them 3 students were rated excellent, 9 - very good, 6 - good, 1 - satisfactory, 2 - sufficient. 2021 year: 20 students graduated with bachelor's degree (100% of degree applicants). To improve the interaction of higher education applicants/graduates and employers, the University operates a Career Development Center (https://robota.kpi.ua/eng). To monitor the careers of graduates, the Educational and Scientific Center of Applied Sociology "Socioplus" (http://socioplus.kpi.ua/) regularly conducts surveys of graduates. The vast majority of bachelor's graduates continue their studying and aplied master's degree (65% or more in different years), other students are employed by specialty. **Recommendations:** none	fulfilled
2.	The institution disposes of internal mechanisms to monitor the student progression with regard to: - academic results during the years of study, - drop-out rate, - credits accumulated by the students which pass from one year into another (as credited students), - time to graduation. The results of the monitoring confirm the efficiency of the educational process. **Findings from the Self-Evaluation Report/ Visit:** Monitoring of student academic success is carried out through the internal Electronic Campus system (https://ecampus.kpi.ua/). The results of examination sessions and calendar controls are discussed and analyzed at the Department meetings. Based on the analysis results, decisions regarding possible changing the educational process are made. The following data on the results of autumn and spring semesters' examinations are sent to the Rectorate: - the number of students at the beginning of the academic semester; - the number of students who participated in semester control activities; - the number of students who passed the semester control without academic debt (at all courses they received 60 or more points on the first attempt to pass the test or exam); - the number of students who received the grades in the range of 95-100 points, in the range of 75-100 points, in the range of 60-100 points, in the range of 60-74 points (in this way, the study results are qualitatively evaluated and recommendations for improving grades are developed); - the number of students who received less than 60 points, could not improve them within the deadlines set by the University and were expelled for failure to fulfill the individual study plan. These reports are summarized at the	fulfilled

	University level and statistical data are accumulated in absolute and relative indicators regarding the number of expelled students, quality results of semester examinations, timeliness of semester examinations by students. The monitoring results illustrate a decrease in the percentage of expelled students and an improvement in the quality distribution of grades. **Recommendations:** none	
	B.2.2 Valorisation of the university qualification by hiring on the labour market or by continuing the university studies	
1.	The educational institution monitors on ongoing basis the career of its graduates based on a system developed for this purpose, and it annually provides a detailed report regarding the evaluated study programme. **Findings from the Self-Evaluation Report/ Visit:** According to Ukrainian law, graduates are not obliged to provide the university with information about their career. The Center of Applied Sociology "Socioplus" (http://socioplus.kpi.ua/) since 2005 regularly conducts surveys of employers regarding satisfaction with the level of knowledge and professional skills of university graduates. The university maintains contact with graduates through the Alumni Association (https://alumni.kpi.ua/) and provides the department with processed statistical data on graduates of the educational program. **Recommendations:** - consider to introduce appropriate procedures for a more effective monitoring of the career progress of the graduates	fulfilled
2.	At least 50% of the graduates are hired within two years as of graduation at the level of their university qualification. **Findings from the Self-Evaluation Report/ Visit:** KPI has the status of a research university, therefore, according to the norms of the current legislation, it has a preferential right to receive a state order for the training of specialists with a master's degree in the amount of up to 75% of the volume of bachelors' graduation (https://zakon.rada.gov.ua/laws/show/1556-18#Text). Therefore, the vast majority of graduates of the educational program (60-80%) continue their studies at the master's level. The employment status of other students is monitored by the Center of Applied Sociology "Socioplus" (http://socioplus.kpi.ua/). The results of the survey confirm that students usually work in their specialty. **Recommendations:** none	fulfilled
3.	At least 20% of the graduates from the last two series of the study programme enrol in Master's degree programmes irrespective of the field. **Findings from the Self-Evaluation Report/ Visit:** The data regarding the number of bachelors graduated from the educational program Electronic components and systems which continued their education under master's degree program are the following. 2022 year: 20 students graduated with bachelor's degree and 13 from them (65%) continued their studying and applied master's degree. Additionally 5 students studied earlier under other bachelor's educational programs entered the master's degree program. 2021 year: 21 students graduated with bachelor's degree and 17 from them (81%) continued their studying and aplied master's degree. Additionally 2 students studied earlier under other bachelor's educational programs entered the master's degree program. **Recommendations:** none	fulfilled

4.	The results of the process of monitoring the graduates employability, the opinion of the hired graduates and employers with regard to the training during the university studies confirm the value of the obtained qualification, the adequacy of the programme aims and outcomes in relation to the needs of the labour market. **Findings from the Self-Evaluation Report/ Visit:** The Center of Applied Sociology "Socioplus" (http://socioplus.kpi.ua/) regularly conducts surveys of employers regarding satisfaction with the level of knowledge and professional skills of university graduates. The high overall percentage of students entering the master's program and employment confirms the value of the obtained qualification. Correction of the content of the program is carried out on the basis of the analysis of the success of the study and the satisfaction of students with the disciplines of the program, as well as the proposals of employers at meetings are taken into account and their assessment of the professional competences of graduates employed at their enterprises is analyzed (http://eds.kpi.ua/?page_id=133). **Recommendations:** - consider developing more effective procedures for receiving the opinion of the hired graduates and monitoring their employability. - consider to establish a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including documentation of the proceedings;	partially fulfilled
5.	The involvement of the companies in partnership with the evaluated study programme in the graduates' employability confirms the value of the obtained qualification, adequacy of the programme aims and outcomes in relation to the needs of the labour market. **Findings from the Self-Evaluation Report/ Visit:** As part of the educational program, students of the department can undergo pre-diploma practice at the following enterprises: Melexis, Progresstech, Generator plant, Kyiv Metropoliten Municipal Enterprise, Ukroboronprom DC, Ministry of Digital Transformation of Ukraine, Ukrainian Atomic Devices and Systems Corporation, Silpo-Food LLC , SE "Arsenal" (http://eds.kpi.ua/?page_id=133) , where they can then be employed. As part of the educational program, there is a Melexis brand laboratory (http://eds.kpi.ua/?p=4501) in which laboratory work is carried out on the subject of the company's activities. A number of graduates of the Korchak, Stepanenko, Zheludkov program are employed in this company. Also, as part of the educational program in 2021, a certificate program was created with the company "Progresstech", within which students study aviation electronics of the Boeing company, and after pre-diploma practice they can work in this field of activity (http://eds.kpi.ua/?page_id =73). Representatives of employers were also involved in lectures on the following topics: "Civil Aircraft Electronics" and "Aircraft Design". **Recommendations:** - none	fulfilled
	B.2.3 Level of satisfaction of the students in relation to the professional and personal development provided by the university	
1.	The higher education institution owns and applies regulations for mechanisms of regular sounding of the students' opinion with regard to their satisfaction relative to the educational process, student services and infrastructure provided by the university. **Findings from the Self-Evaluation Report/ Visit:** At the end of each semester, the university conducts a student survey "Teacher through the eyes of students" in the internal university system Electronic Campus (https://dnvr.kpi.ua/2022/01/18/%F0%9F%93%8A-%D0%B2%D1%96%D0%B4%D0%BA%D1%80%D0%B8%D1%82%D0%BE-%D0%B4%D0%BE%D1%81%D1%83%D0%BF-%D0%B4%D0%BE-%D0%BC%D0%BE%D0%B4%D1%83%D0%BB%D1%8E-%D0%BE%D0%BF%D0%B8%D1%82%D1%83%D0%B2%D0%B0%D0%BD/) according to the criteria: objectivity of assessment, ability to convey material to students, ability to establish partnership relations with students,	fulfilled

	benevolence and tact towards students, use of remote communication tools. Students can express their opinion about teachers in the Telegram channels "Good KPI" @kpi_777, "Bad KPI" @kpi_666. The Telegram channels of the Department of Educational Work @DNVR_team_bot and the faculty @fel_ikpibot have chat bots for student feedback. The feedback form is available on the website of the department (http://eds.kpi.ua/?page_id=138). The specified feedback mechanisms allow you to effectively monitor the students' attitude to the educational process and effectively adjust it. **Recommendations:** - consider taking into account also the results of the surveys conducted by the Student union	
2.	The process of monitoring the opinion of the students is adequate with regard to the relevance of the collected information, rate of reply and improvement measures (identified and implemented). **Findings from the Self-Evaluation Report/ Visit:** Student appeals received via feedback channels are processed promptly and analyzed and discussed at department meetings. The department has a person responsible for educational work, who interacts with students directly and through the curators of study groups. Important issues are brought to the faculty level, on the basis of which explanatory materials are formed in text and video format through the Department of Educational Work (https://dnvr.kpi.ua/). **Recommendations:** - none	fulfilled
3.	Monitoring the opinion of the students about the didactic process confirms the efficiency of the respective process and provided support services. More than 50% of the students positively assess the learning/ development environment provided by the university and their own learning path. **Findings from the Self-Evaluation Report/ Visit:** The organization of the educational process is carried out by educational and support staff in the number of 11 people, whose duties include preparing classrooms and equipment for conducting lectures, setting up equipment for conducting laboratory work, and forming a convenient schedule for students. A comfortable environment for learning is created on the territory of the department and the university. The adequacy of the educational process is carried out on the basis of the telegram chat of the department. There is also a regular survey of students regarding satisfaction with the educational program (https://docs.google.com/forms/d/10r66xbDKBLb-I0-vIAQs7aMw0P6CE5yZBGxQK9IK2B4/edit?ts=6322fef7#responses). 82.5% of students gave an affirmative answer to the question "Whether the organization of the educational process was fully ensured" **Recommendations:** none	fulfilled
	B.2.4 Student-centred learning	
1.	The teaching methods are adequate in order for the students to obtain the learning outcomes, including transversal skills. **Findings from the Self-Evaluation Report/ Visit:** In accordance with the Regulation on current, calendar and semester control of study results at KPI (https://osvita.kpi.ua/node/32) regulates monitoring and basic control measures to determine the level of competences acquired by students of higher education and program learning outcomes, their compliance with the requirements of the educational program. The results of control measures are available to students in their personal offices of the automated information system "Electronic Campus". For first-year students whose level of knowledge does not meet the requirements determined after the first rector's control, there are adaptation and correction courses (https://kpi.ua/adapt) on Mathematics,	fulfilled

	Ukrainian and English languages and Physics. If necessary, there are individual consultations of teachers. All control measures are developed at different levels, that is, it is indicated how many correct answers must be given for this or that assessment in the Regulations on the system for evaluating learning outcomes at Igor Sikorsky Kyiv Polytechnic Institute (https://osvita.kpi.ua/node/37). **Recommendations:** none	
2.	The teacher – student relationship is of partnership, each of them being responsible for obtaining the learning outcomes. The learning outcomes are explained and discussed with the students from the perspective of their relevance for their development. **Findings from the Self-Evaluation Report/ Visit:** In order for the university to perform not only the function of a translator of knowledge, but also to fulfill its educational role, to form in students their value orientations, a conscientious attitude to study and work, to promote further professional orientation, constant individual work with students is required. In KPI, the fulfillment of these functions entrusted to the institut\e of curators of academic groups and student curators. The activity of curators of academic groups is regulated by the Regulation on the curator (https://osvita.kpi.ua/node/173) and consists of: - formation of students' understanding of the principles of academic integrity; - explanatory features of the individual learning trajectory; - acquainting the applicants with the regulatory framework of the university; - informing applicants about the possibility of participation in scientific, educational, sports, social events; - communication with applicants; - clarification of unclear issues. The work of student curators is primarily a volunteer initiative of students who, remembering their first steps in a big and new world, want to help freshmen adapt to new, compared to school, learning conditions, evaluation system, peculiarities of conducting pairs and find answers to many questions that arise in their everyday educational life. **Recommendations:** none	fulfilled
3.	The teaching-learning process considers both face-to-face didactic activities and individual study. **Findings from the Self-Evaluation Report/ Visit:** For 1st-year students, according to the curriculum (http://eds.kpi.ua/?page_id=6418), 3,384 hours out of 7,200 hours are allocated to classroom learning (47%) and 3,816 hours to independent student work (53%), where they prepare for classes or perform individual tasks provided by the curriculum for each individual educational component. . To form the individual educational trajectory of the student, the department also has a certificate program "Civil Aircraft Electronics from Progresstech-Ukraine" (http://eds.kpi.ua/wpcontent/uploads/2022/07/Certificate_program_ProgresTech_EPS_FEL_bac_2022.pdf) **Recommendations:** none	fulfilled
4.	Teachers use the resources of the new technologies (e.g. email, personal webpage/e-learning platform for themes, bibliography, resources in electronic format and dialogue with the students) and auxiliary materials, from the blackboard to flipchart and video projector etc. **Findings from the Self-Evaluation Report/ Visit:** Under conditions of distance learning and the introduction of martial law, teachers use the latest technologies and resources: distance courses are hosted on the distance learning platform Sikorsky distance https://www.sikorskydistance.org/ and in the Moodle environment. Available electronic access to the KPI library (https://discovery.kpi.ua/), as well as available open access to the libraries of world universities. Teachers can take advanced training courses on the following topics http://ipo.kpi.ua/povyshenie_kvalif/pidvishennyakvalifik-vsi/: - Use of advanced Google services for educational activities; - Implementation of distance learning in universities; - Organization of distance learning using	fulfilled

	Microsoft Teams; - Development of distance courses using the Moodle platform; - Creation of photos, videos, animations to support learning; - Creation of distance learning video content. All methodical materials are placed in the Electronic Campus, as well as in distance courses, and are sent to students' electronic addresses, placed in the telegram channels of the disciplines, upon request. **Recommendations:** none	
5.	Teachers flexibly use a variety of pedagogical methods by which they encourage the debates, exchange of opinions and teamwork.. **Findings from the Self-Evaluation Report/ Visit:** The Institute of Postgraduate Education of KPI has courses for improving pedagogical skills. In addition, the syllabi of the educational components indicate the pedagogical methods used in the study of the discipline. The teacher of the department created a YouTube channel for posting lectures on the disciplines "Power Electronic Systems", "Power Electronics", "Microprocessor Devices" https://www.youtube.com/channel/UCr1UPFiA7WgpKs8zTgwR6w/videos. Laboratory works in the discipline "Information technologies" are performed in the Matlab Simulink environment, where the electronic simulation of the principles of electronic equipment works (http://eds.kpi.ua/?page_id=7090). **Recommendations:** none	fulfilled
6.	The higher education institution has recognition and completion procedures fit for purpose in cases of students' study mobility/ practice. **Findings from the Self-Evaluation Report/ Visit:** The issue of sending students to study under academic mobility programs is regulated by the Regulation on academic mobility of KPI (https://osvita.kpi.ua/node/124) It is provided that the learning results obtained in academic mobility are recognized by the university. The recognition procedure is prescribed in the Regulation on recognition in KPI preliminary study results (https://osvita.kpi.ua/index.php/node/181) One of the types of implementation of the right to academic mobility are double degree programs, which are implemented in a number of university divisions and procedural issues of which are regulated by the Regulation on double degree programs at KPI (https://osvita.kpi.ua/ppppd) In addition to academic mobility, the university provides for the possibility of dual education, in accordance with the Regulation on the Dual Form of Higher Education at KPI (https://osvita.kpi.ua/node/168) In addition, students have the opportunity to recognize the results obtained within the framework of self-education, in accordance with the Regulation on recognition at KPI of learning outcomes acquired in non-formal/informal education (https://osvita.kpi.ua/index.php/node/179) The final attestation of applicants is carried out on the basis of the Regulation on the examination commission and attestation of applicants for higher education at KPI (https://osvita.kpi.ua/sites/default/files/downloads/Regulations_EC_certification.pdf). **Recommendations:** none	fulfilled
7.	Teachers have standby classes available for the students, and they customize the guidance upon the request of the student. There are tutors or other forms of association between a teacher and a group of students. **Findings from the Self-Evaluation Report/ Visit:** Teachers conduct consultations according to the schedule, both for study groups and individually for individual students within working hours. In the conditions of distance learning, communication with groups takes place both in the chats of the corresponding Google classes and in Telegram chats created for individual groups, as well as through Electronic Campus and e-mail. In addition, the faculty has public classrooms that are accessible to the public, where students and teachers can consult. The KPI library has https://www.library.kpi.ua/wp-	fulfilled

	content/uploads/2019/09/Gajd-biblioteky_2019.pdf: - 6,320 m2 of space for individual and team work; - 10 halls on 6 floors of the library, open to everyone; - Stationary computers with Internet access; - Internet access from own laptops or mobile devices via Wi-Fi; - Student space "Bielka" and Open Electronics Laboratory "Lampa". **Recommendations:** none	
	B.3 Scientific research activity	
	B.3.1 Research planning	
1.	The Bachelor's field and the study programme subjected to evaluation dispose of own scientific plan included in the strategic plan of the faculty and of the institution which it belongs to, being certified with documents kept in the department, faculty etc. **Findings from the Self-Evaluation Report/ Visit:** Scientific research of students takes place within the framework of the Faculty's Strategic Development Plan https://fel.kpi.ua/wp-content/uploads/2022/10/Strategichnyi_plan_rozvytku_FEL_20_25.pdf and the Development Strategy of KPI for 2020-2025 https://osvita.kpi.ua/index.php/node/116. The first 2 years students study general disciplines, and starting from the 3rd year students are actively involved in the scientific work of the department. The department operates a scientific school, Theoretical foundations of the transformation of electrical energy parameters (http://eds.kpi.ua/?page_id=5442). Students can carry out research within the initiative topics of teachers, state budget topics http://eds.kpi.ua/?page_id=181. Students receive individual grants for participation in scientific conferences, seminars http://eds.kpi.ua/?page_id=189. **Recommendations:** - consider the effective of information on research provided through the website, in both Ukrainian and English language	fulfilled
2.	The research themes included in the plan are within the scientific area of the field which the study programme subjected to evaluation is part of. **Findings from the Self-Evaluation Report/ Visit:** Research topics, which are carried out under the guidance and with the direct participation of the pedagogical workers and University, and are part of the scientific work plans of the EPS department and the Research Institute of Electronics and Microsystems https://science.kpi.ua/naukovo-doslidnij-institut-elektroniki -ta-mikrosistemnoyi-tehniki/, are within the scientific field, which is a part of OP. For example: Heterogeneous network of information collection, transmission and processing for the MicroGrid distributed generation system; Increasing the indicators of energy efficiency and resource saving by means of power electronics for the technology of obtaining highly reliable welded joints of dissimilar materials; Power supply system for high-frequency valve-inductor motors of a drone with multi-cell converters and space-time modulation (http://eds.kpi.ua/?page_id=8666). **Recommendations:** none	fulfilled
	B.3.2 Research resources	
1.	The research disposes of sufficient financial resources in order to meet the proposed goals. **Findings from the Self-Evaluation Report/ Visit:** Constant participation of the department's pedagogical workers in the implementation of state budget and farm contractual scientific themes, the attraction of grant funds, ensures the availability of the necessary financial resources for the implementation of the goals of the study	fulfilled

	program, the involvement of higher education institutions in active scientific research. The amount of funding is about UAH 150,000 every year. A list of specific scientific topics with an indication of the corresponding amounts of funding is given at the link http://eds.kpi.ua/?page_id=8666 **Recommendations:** none	
2.	The research disposes of sufficient logistic resources in order to meet the proposed goals. **Findings from the Self-Evaluation Report/ Visit:** The faculty has appropriate laboratories at its disposal to ensure research activities. At the same time, pedagogical workers who teach at the OP conduct scientific research at the EMST Research Institute (https://science.kpi.ua/naukovo-doslidnij-institut-elektroniki -ta-mikrosistemnoyi-tehniki/), which provides additional broad opportunities for conducting relevant research. Research laboratories are equipped with measuring and computing equipment, physical and technological installations. Among the available laboratories, the following should be noted: - Nanotechnological Center NANOFAB (building 2); - licensed laboratory for the design of analog microcircuits with a very high degree of integration (VLSI); - educational and scientific laboratory of analog electronics Melexis; - research laboratory of power electronics (NDI EMST); - educational and scientific center of plasma nanotechnology of functional optical coatings; - the center of supercomputer calculations; - and other **Recommendations:** none	fulfilled
3.	The research disposes of sufficient human resources in order to meet the proposed goals. **Findings from the Self-Evaluation Report/ Visit:** Research topics are carried out under the guidance and with the direct participation of qualified scientific and pedagogical workers and students of higher education of the educational program. 7 Doctor of Science, Professors, 10 Doctor of Science, Associate Professors, 3 senior teachers and students of higher education are involved in the implementation of research topics. The list of scientific topics performed by scientific and pedagogical workers and students of higher education can be found at the link http://eds.kpi.ua/?page_id=8666 **Recommendations:** none	fulfilled
	B.3.3 Performance and valorisation of research	
1.	Teachers carry out scientific research activities in the field of the disciplines include in their workload, which are valorised in: publications in scientific journals or publishing houses from the country or abroad, scientific papers presented in sessions, symposiums, seminars etc. from the country and/or abroad, contracts, expertise, consultancy etc. based on contracts or agreements concluded with partners from the country and/or abroad, with evaluation certified by specialty commissions, patents and technological transfer through consultancy centres, science parks or other forms of valorisation, development of new products etc. **Findings from the Self-Evaluation Report/ Visit:** Lecturers of the Department have the opportunity to participate in international scientific internships within the framework of academic mobility projects https://mobilnist.kpi.ua/. Over the past 5 years, the department's lecturers have published: - 57 articles in publications indexed in international scientometric databases Scopus and Web of Science; - 145 articles in professional publications of Ukraine; - 23 patents; - 14 monographs; -- 16 articles with students. The list of publications can be found on the website of the department http://eds.kpi.ua/?page_id=5439 The list of scientific topics performed by scientific and pedagogical workers and students of higher education can be found at the link http://eds.kpi.ua/?page_id=8666	fulfilled

	Recommendations: - consider increasing the visibility of the published research (target higher ranked journals and conferences)	
2.	Every teacher has at least one annual publication or didactic or scientific achievement. **Findings from the Self-Evaluation Report/ Visit:** During the 2021-2022 academic year, the department published 33 scientific articles, 29 manuals and textbooks, 3 patents, 4 monographs, that is, 2,875 publications per full-time pedagogical worker (http://eds.kpi.ua/?page_id=5439) . **Recommendations:** none	fulfilled
3.	The students are supported and stimulated to carry out research activities, they are involved in research projects, and they are financially supported to participate in national and international scientific conferences / symposiums. **Findings from the Self-Evaluation Report/ Visit:** For students, the fee for participation in faculty conferences is reduced (for example, for the International Conference on Electronics and Nanotechnology (ELNANO) https://elnano.ieee.org.ua/ the discount is 40%). University supports teachers and students by awarding prizes for publications in publications included in the scientometric databases Scopus, Web of Science https://document.kpi.ua/files/2022_HOH-38.pdf. The presence of publications has a positive effect on the defense of the thesis. **Recommendations:** none	fulfilled
4.	The faculty organises with the teachers, researchers, students and graduates, on regular basis, scientific sessions, symposiums, conferences, round tables, and the papers are published in scientific volumes with ISBN and ISSN or in proceedings dedicated to the organised activity. **Findings from the Self-Evaluation Report/ Visit:** 2 annual conferences are held at the faculty on a regular basis https://fel.kpi.ua/naukovi-konferentcii/: - International Conference on Electronics and Nanotechnology (ELNANO) https://elnano.ieee.org.ua/ - International scientific and technical conference of young scientists "Electronics" http://elconf.kpi.ua/ 2 scientific journals are published: - Microsystems, Electronics and Acoustics http://elc.kpi.ua/ - Electronic and Acoustic Engineering http://feltran.kpi.ua/ The department conducts scientific seminars of the National Academy of Sciences of Ukraine in the direction of "Analysis of processes in electronic devices, devices and systems" http://eds.kpi.ua/?page_id=62. The faculty annually holds an Olympiad on the theory of electric circuits https://kpi.ua/circuit_theory **Recommendations:** none	fulfilled
5.	*Other requirements provided in the standards specific to the Bachelor's field/ study program*. **Findings from the Self-Evaluation Report/ Visit:** **Recommendations:**	Not the case
C. QUALITY MANAGEMENT		
C.1 Quality assurance strategies and procedures		
1.	In the higher education institution, there is a central quality assurance commission and commissions for study programmes, who work on integrated basis. There is a commission for quality assessment and assurance at the level of the faculty/department coordinating the study programme, which coordinates the application of the quality assessment and assurance procedures and activities.	fulfilled

	Findings from the Self-Evaluation Report/ Visit: The university has a system of internal quality assurance of education, which operates in accordance with the Regulation on the internal quality assurance system in higher education at the National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute» (https://osvita.kpi.ua/sites/default/files/downloads/REGULATIONS%20_Eng.pdf). The overall management of the system is carried out by the rector of the University. At the university-wide level, the system includes: the first vicerector, the Methodological Council of the University, the Department of Educational Process Quality, the Institute of Education Quality Monitoring, the Department of Educational Process Organization, the Department of Educational Work, Scientific research centre of applied sociology "Socioplus", the Design Bureau of Information Systems, educational and methodological complex "Institute of Postgraduate Education". At the faculty level the system includes: the dean, the Academic Council, the Methodical Commission, the Council of Employers, the Student Council. At the level of educational programs the system includes: support groups for each educational program (involved in all procedures that require the development, approval, monitoring and revision of educational programs, as well as external evaluation and self-evaluation procedures), persons responsible for educational components of educational programs, academic staff of graduation departments, as well as higher education graduates, which are members of working groups and belong to groups for monitoring and reviewing educational programs. The general set of procedures for the implementation of the educational quality assurance system includes: - competitive selection of higher education applicants; - complex monitoring of the quality of training of students by specialty; - monitoring of the state of fundamental training of the first year students of the University; - evaluation of the comprehensive rating of the University's divisions; - assessment of educational programs; - examination of educational materials; - rating of academic staff; - survey of higher education applicants, academic staff, graduates, employers; - resolution of conflict situations; - monitoring measures to improve the internal system of ensuring the quality of education. The head of the Department of Educational Process Quality annually reports at the meeting of the Academic Council of the University on the functioning of internal quality assurance system. The proper functioning and organization of the work of the University's internal quality assurance system are provided by distribution of decision-making powers among officials, the management of educational programs and universitywide structural units with the involvement of students, self-governments, employers and alumni associations. **Recommendations:** - consider to establish a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including documentation of the proceedings;	
2.	The quality assurance policies and strategies are active in the faculty coordinating the study programme, and they stimulate the participation of each member of the didactic and research team and also of the students. **Findings from the Self-Evaluation Report/ Visit:** The syllabus of each educational component (https://osvita.kpi.ua/node/167) states: - pre-requisites and post-requisites of the educational component (place in the structural and logical scheme of training according to the educational program); - the policy of mastering the educational component; - rules of academic integrity; - types of control; - a rating system for evaluating learning outcomes. Syllabuses of all educational components studied under the educational program are posted on the website of the department (http://eds.kpi.ua/?page_id=7090#1) and are reviewed annually in order to improve the quality of teaching provision. Syllabuses of the department's educational components are approved by the protocols of the department's meeting, and then approved by the Faculty's Methodical Council. Syllabuses of the university-wide educational components are approved by the protocols of the providing department's meeting, and then approved by the Methodogical Council of the University. **Recommendations:**	fulfilled

	- consider to establish a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including documentation of the proceedings;	
3.	The educational institution prepares and presents an annual report regarding the modality of complying with the provisions of the programme of quality policies and to the positive and negative aspects of the internal quality assurance, which it makes public. **Findings from the Self-Evaluation Report/ Visit:** The University annually conducts a self-analysis of the departments' activities and determines whether their indicators meet the internal accreditation criteria (https://document.kpi.ua/taxonomy/term/508). Departments provide information on: - general characteristics of educational programs; - the contingent of higher education applicants; - personnel support; - scientific activity; - financial income. The results of the self-analysis are discussed at the department to determine the dynamics of changing the indicators, then the report is approved by the accreditation commission of the faculty, which includes the dean of the faculty, deputy dean, heads of graduate departments, heads of scientific and methodical commissions of the university for specialties. The accreditation commission of the faculty summarizes the results of self-analysis of the departments and provides materials to the accreditation and licensing department of the Department of Educational Process Quality **Recommendations:** - prepare and publish annually the quality assessment report for each study program	fulfilled
4.	The study programme is part of the institutional system of internal quality assurance, and it implements the identified measures to improve the quality of the educational process. **Findings from the Self-Evaluation Report/ Visit:** The University's higher education quality system has levels corresponding to the direct performing the educational programs, as well as their implementation and administration (https://osvita.kpi.ua/sites/default/files/downloads/REGULATIONS%20_Eng.pdf). Educational program support groups are the participants in the system of internal assurance of the quality of educational activities and the quality of higher education. The support groups are formed separately for each educational program, are involved in all procedures that require the development, approval, monitoring and revision of educational programs, as well as in external evaluation and self-evaluation procedures. The main functions of support groups include: - substantiation of the necessity to introduce an educational program based on the results of labor market research, surveys of employers, and potential applicants, analysis of current trends in the development of the economy and science; - development of the educational program and its publication on the websites of the faculty, University; - ensuring the coordination of competencies, learning outcomes, structure of curriculum, optional disciplines, criteria for evaluating the level of achievement of learning outcomes by key stakeholders. **Recommendations:** - prepare and publish the annually quality assessment report for each study program	fulfilled
	C.2 Procedures regarding the initiation, monitoring and periodic review of study programmes	
1.	A regulation regarding the initiation, approval, monitoring and periodic review of the study programmes exists, and it is applied. **Findings from the Self-Evaluation Report/ Visit:** In order to organize, unify and make transparent the implementation of the procedures at the educational programs of the University, in accordance with the System of internal quality assurance of higher education, the Regulations on development, approval, monitoring and review of educational programs at Igor Sikorsky KPI is implemented (https://osvita.kpi.ua/sites/default/files/downloads/Regulation%20educational%20programs.pdf). **Recommendations:** - prepare and publish annually the quality assessment report for each study program	fulfilled

2.	The study programme is periodically reviewed in terms of objectives and labour market need, teaching and learning process, resources, outcomes and management system, to guarantee their continuing relevance and effectiveness. **Findings from the Self-Evaluation Report/ Visit:** Monitoring of the educational program is carried out to establish the achievement of the defined goals and learning outcomes. Monitoring is carried out annually by the department, the Educational and Scientific Center of Applied Sociology "Socioplus" conducts surveys of higher education applicants and employers, the Educational and Scientific Center for Innovative Monitoring of the Quality of Education conducts rector's control of residual knowledge, as well as adaptation and corrective courses for applicants of higher education. Also, experts, practicing professionals, higher education providers and other stakeholders are involved in the monitoring. Every year in September-October, the proposals of stakeholders and the self-analysis of the educational program take place; in October-November - making changes to the educational program and its public discussion (at the same time, the project of the educational program is posted on the website of the department http://eds.kpi.ua/?page_id=5040); in November-December - approval of the updated version of the educational program by the scientific-methodical commission for the specialty and the Methodical Council of the university and approval by the Academic Council of the university. **Recommendations:** - consider to establish a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including documentation of the proceedings;	fulfilled
3.	The process of periodic review of the study programme considers: (i) the interest of the representatives of the labour market for the study programme and the satisfaction regarding the training of students/graduates; (ii) the interest of the practice partners for the study programme and satisfaction regarding the training of students; (iii) results of monitoring the opinion of the students with regard to the didactic process. **Findings from the Self-Evaluation Report/ Visit:** During the process of monitoring the educational program, the following are taken into account: - requests from employers for employment with the provision of relevant requirements for the candidate for the position; - conversations with stakeholders; - results of the survey "Teacher through the eyes of students", survey of employers, survey of students regarding satisfaction with educational needs. **Recommendations:** - consider to establish a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including documentation of the proceedings;	fulfilled
4.	An annual study programme internal evaluation report is prepared, and it includes proposals to improve the quality of the education. **Findings from the Self-Evaluation Report/ Visit:** In accordance with the Regulation on the development, approval, monitoring and revision of educational programs in Igor Sikorsky KPI (https://osvita.kpi.ua/sites/default/files/downloads/Regulation%20educational%20programs.pdf) departments annually prepare a self-analysis report, which indicates the results of the self-analysis, as well as how inconsistencies in those or other self-assessment criteria. **Recommendations:** - prepare and publish annually the quality assessment report for each study program	partially fulfilled
	C.3 Objective and transparent procedures for the evaluation of the learning outcomes	
1.	The higher education institution has a regulation regarding the examination and grading students, which is rigorously and consistently applied. **Findings from the Self-Evaluation Report/ Visit:**	fulfilled

	Each student of higher education can view the results of current, calendar and semester control in the personal account of the "Electronic Campus" system (https://ecampus.kpi.ua/home). For the proper implementation of semester control in the conditions of distance education, the University has developed the Regulations for conducting semester control and defenses of qualification papers and attestation exams in distance mode (https://osvita.kpi.ua/index.php/node/148). Provisions on current, calendar and semester control of study results at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/32), which regulates all procedures for conducting control measures for the purpose of evaluating learning outcomes and Regulations on the evaluation system of learning outcomes at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/37) is an integral part of the Regulation on the organization of the educational process at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/39) and compliance with their requirements is mandatory for all participants in the educational process. **Recommendations:** - none	
2.	Besides the course holder, at least another specialty teacher participates in the examination. The evaluation methods are diverse, and they encourage critical thinking, creativity, teamwork, case studies. **Findings from the Self-Evaluation Report/ Visit:** In accordance with clause 4.11 of the Regulation on current, calendar and semester control of study results at KPI named after Igor Sikorskyi (https://osvita.kpi.ua/index.php/node/32), scientific and pedagogical workers who conducted classes in this educational discipline in the study group (lectures, practical classes, checking individual tasks). If the applicant has an academic debt based on the results of the semester control, then a commission is created to liquidate it by the decision of the department, which includes competent teachers of the department, a representative of the student council and a pedagogue of the department's administration (deputy dean for educational and organizational work). In order to carry out semester control measures within the scope of repeated study of disciplines in order to improve a positive assessment, a commission of two teachers is created, one of whom necessarily ensures the teaching of the academic discipline from which the control measure is conducted, in addition, one or both teachers must have a scientific degree. In accordance with the requirements for methodical provision of semester control, diagnostic tools (examination tickets, control tasks, tests) are developed for all educational disciplines, with the exception of course projects/works and practicals. The criteria for evaluating the applicant's response within the semester control must correspond to the planned level of achievement of program learning outcomes (for example, according to Bloom's taxonomy). **Recommendations:** - none	fulfilled
3.	The evaluation of students includes the objective examination and grading based on criteria and methods clearly established in the beginning of the semester and on standards presented to the students, together with other criteria for the assessment of the carried-out activity. **Findings from the Self-Evaluation Report/ Visit:** The evaluation criteria for all types of work provided by the curriculum for a specific discipline are prescribed in the rating evaluation system, which is an integral part of the syllabus. This information must be brought to the attention of students at the first lesson of the discipline in the semester. In addition, the syllabus is placed in the automated system Electronic Campus, the distance course on the discipline on the distance learning platform Sikorsky Distance (https://www.sikorsky-distance.org/) provides information about the syllabus and evaluation criteria. Syllabus are also posted on the website of the department (http://eds.kpi.ua/?page_id=7090). Any changes to the syllabus cannot be made during the semester. In exceptional situations, when such changes are due to objective reasons that make it impossible to implement the existing criteria and requirements, changes are made by the decision of the department with mandatory advance informing of students and without worsening the conditions for them regarding assessment or increasing the volume of work. The requirements for the structure for filling out	fulfilled

	syllabi are prescribed in the Procedure for creating and approving work programs (syllabi) of educational disciplines (educational components) at KPI named after Igor Sikorskyi (https://osvita.kpi.ua/index.php/node/174), and the principle of functioning of the rating evaluation system for tests and exams is reflected in the Regulations on the evaluation system of study results at KPI named after Igor Sikorskyi (https://osvita.kpi.ua/index.php/node/37). **Recommendations:** - none	
4.	The methods and criteria used to evaluate the students with regard to the developed skills and competences are adequate and allow the verification of actual acquirement by them of the knowledge and skills provided in the discipline syllabi. **Findings from the Self-Evaluation Report/ Visit:** The rating system for evaluating learning results is formed in accordance with the requirements of the Regulation on the system for evaluating learning results in Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/37) and provides that the results of knowledge acquisition, formation of skills and competences for disciplines in which the semester control is conducted in the form of credit are evaluated by the number of points, collected by the student during the semester. The maximum number of points that a student can get from such disciplines in a semester is 100. For exams, the final semester grade is formed as the sum of the starting points that the student gets in the semester - as a rule, it is 40-50 points, and the exam component - the points that the student gets according to the results of the examination work. This approach allows both to stimulate students to work as efficiently as possible during the semester, and to carry out an objective check of the achieved learning results in the process of conducting semester control measures. The syllabus, which clarifies the mutual responsibility of the teacher and the student, and which defines the content of the discipline, teaching policy, deadlines, criteria and means of evaluating learning results, is approved by the graduation department and the Methodical Commission of the faculty, which checks the compliance of the evaluation criteria presented in it with the requirement of adequate verification the level of assimilation of knowledge and formation of skills and acquisition of competences provided for by the educational program. The requirements for the form and content of the syllabus are set out in the Procedure for creating and approving work programs (syllabi) of educational disciplines (educational components) at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/174). **Recommendations:** - none	fulfilled
5.	For the disciplines provided with laboratory and/or project activities, the evaluation methods and criteria included in the discipline syllabi contain detailed information on the evaluation of the students in the different types of activity: course/ laboratory/ project (for example, percentage of the final grade, minimum performance standard). **Findings from the Self-Evaluation Report/ Visit:** For all disciplines, the rating evaluation system provides a detailed description of the evaluation criteria for various types of work (control work, laboratory work, calculation or calculation-graphic work, etc.) with a reflection of their percentage contribution to the overall rating evaluation for the discipline. A separate syllabus and rating evaluation system is formed for coursework/projects, which reflects the deadlines for their completion, content requirements, and evaluation criteria. In a similar way, criteria for evaluating the performance of practice tasks, generated reports, and the implementation of public defense of these results before the commission at the end of the practice are being developed. When evaluating practical work, not only the calculation part is evaluated, and when performing laboratory work, not only the performance of measurements, but also the program implementation (if available), and also a test express control is conducted to check the success of learning the material.	fulfilled

	Recommendations: - none	
6.	During the practical activity evaluation process, the assessments of the practice tutor from the company where the respective activity was carried out shall be considered. **Findings from the Self-Evaluation Report/ Visit:** In accordance with the Regulation on the procedure for the practice of higher education applicants of Igor Sikorsky KPI Regulations on the procedure for conducting the practice of higher education Igor Sikorsky Kyiv Polytechnic Institute (https://osvita.kpi.ua/node/184) the practice program must contain a description of the procedure and specific criteria for assessing the level of knowledge, skills and abilities , which should be achieved by students of higher education during practice. According to the same provision, practice managers from university departments and from the enterprise are appointed to lead the practice. The head of practice from the department, together with the head of practice from the enterprise, takes credit for the practice and forms a credit assessment. That is, the internship manager from the enterprise, institution, or organization assesses the quality of work of each student of higher education during the internship, which is recorded in the internship diary. **Recommendations:** - none	fulfilled
7.	The number and distribution of the forms of examination in a semester are organised so that to ensure the time necessary to the training of the students and deployment of the evaluation process. **Findings from the Self-Evaluation Report/ Visit:** According to the curriculum (http://eds.kpi.ua/?page_id=6418), 1 ECTS credit (30 hours) is allotted for the exam. At least 2 days are planned for the preparation of applicants for each exam, depending on the scope of the educational discipline (educational component) (Regulations on current, calendar and semester control of study results at Igor Sikorsky KPI (https://osvita.kpi.ua/index .php/node/32)). On the third day, the exam is held. Since the duration of the examination session is 2 weeks, the total number of examinations does not exceed 3. For all other disciplines, semester control measures are conducted in the form of assessments, which are not conducted at a separately allocated time, but in the last scheduled lesson in the last week of study. Grades are given for all disciplines available in the curriculum. **Recommendations:** - none	fulfilled
8.	There is an official procedure for the students to contest the evaluation and to solve the appeals, which is presented to the students. **Findings from the Self-Evaluation Report/ Visit:** Procedures and prerequisites for appealing the grade obtained during semester control measures are provided for in the following documents, published and available for review on the official resources of the university: - Regulations on appeals in Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/182); - Regulations on resolving conflict situations in Igor Sikorsky KPI (https://osvita.kpi.ua/2020_7-170); - Regulations for conducting semester control and defenses of qualification papers and attestation exams in remote mode (https://osvita.kpi.ua/index.php/node/148). **Recommendations:** - none	fulfilled
9.	There are regulations with regard to re-examinations, taking the medically postponed examinations and credited examinations, sanctioning the frauds discovered during examinations, other circumstantial situations. **Findings from the Self-Evaluation Report/ Visit:**	fulfilled

	If a student has not fulfilled the requirements of the individual curriculum in certain disciplines and was not allowed to participate in the semester control activities in these disciplines, he can liquidate the academic debt, in accordance with Section 8 of the Regulation on current, calendar and semester control of study results at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/32). The number of such disciplines should not exceed 2. The repeated study of such disciplines can be postponed to the next semester of study, which is reflected in the student's individual study plan. At the same time, it is possible to completely repeat the study of the discipline, and only to repeat the semester control measures. If, even after that, the student was unable to fulfill the conditions of the individual study plan, he is provided with an individual study schedule. In the Regulation on current, calendar and semester control of study results at Igor Sikorsky KPI (https://osvita.kpi.ua/index.php/node/32) in clause 6.7 states that the teacher has the right to remove the candidate from taking the exam/test, if the fact of violation of the principles of academic integrity or moral ethical norms of behavior. At the same time, in the information of the semester control, the corresponding mark "removed" is placed against the given student and a memo is submitted to the head of the unit stating the reasons for removal. **Recommendations:** - none	
10.	The completion of studies implies the preparation of a graduation thesis, which demonstrates the capacity of the student to fulfill an independently assigned task at the level of the imposed standards. The higher education institution disposes of plagiarism prevention mechanisms. **Findings from the Self-Evaluation Report/ Visit:** According to the educational program, certification of higher education graduates is carried out in the form of a public defense of a qualifying thesis. The thesis must contain a solution to a complex problem, a specialized task or a practical problem in the field of electronics, which is characterized by complexity and uncertainty of conditions and involves the application of theories and methods of electronics. A student can choose a thesis topic from the list available on the department's website (http://eds.kpi.ua/?page_id=2021). The duration of diploma design is 5 weeks. The procedure for conducting the defense is prescribed in the Regulations on the Examination Board and Certification of Higher Education Applicants (https://osvita.kpi.ua/sites/default/files/downloads/Regulations_EC_certification.pdf). There can be no academic plagiarism, falsification, or plagiarism in the qualification work. To prevent academic plagiarism, the texts of diploma theses, articles, university publications, etc., are publicly available in the Electronic Archive of Scientific and Educational Materials of Igor Sikorsky KPI (https://ela.kpi.ua/). **Recommendations:** - none	fulfilled
11.	In the process of evaluating the graduation theses with themes proposed by/ prepared in collaboration with the industry, the assessments of the company representative in collaboration with whom the respective activity was carried out shall be considered. Representatives of the industry are invited to participate in the presentation of the graduation theses. **Findings from the Self-Evaluation Report/ Visit:** In accordance with the Regulation on the examination board and attestation of applicants for higher education in KPI named after Igor Sikorskyi (https://osvita.kpi.ua/sites/default/files/downloads/Regulations_EC_certification.pdf) the thesis defense is held at an open meeting of the examination commission, which can be attended by everyone. Employer representatives are invited to the defense. In the process of evaluating graduation papers, the evaluations of the representatives of the company, in cooperation with which the relevant activity was carried out, namely the reviewer and consultant of the graduation thesis, are taken into account. The reviewer is a certified specialist of the company where the pre-diploma practice took place, is an expert in the field in which the diploma work under review was performed. The reviewer provides a written review, in which he indicates the conformity of the quality of the completed work (project) with the requirements set forth for such works, about	fulfilled

	the possibility of admitting it to defense. Teachers of the department, as well as highly qualified specialists, researchers of other institutions, organizations and enterprises are appointed as consultants for individual sections of the qualification work according to the profile of the section. Consultants provide assistance to the student in working on the relevant section, check the quality of the assignment, put their signature on the title page. **Recommendations:** - none	
	C.4 Procedures of regular quality assessment of the academic staff ESG 1.5	
1.	The peer-review is organised on regular basis, being based on general criteria and clear and public procedures. **Findings from the Self-Evaluation Report/ Visit:** The staff is recruited in accordance with competitive selection, the rules of which are prescribed in the Procedure for conducting competitive selection or selection by competition when filling vacant positions of the academic staff and concluding labor agreements (contracts) with them (https://osvita.kpi.ua/competition). A mandatory condition for concluding a contract is the fulfillment of at least 4 clauses of the Licensing Conditions for Conducting Educational Activities (https://zakon.rada.gov.ua/laws/show/1187-2015-%D0%BF#Text). In accordance with this Procedure, an expert and qualification commission is created at the faculty to organize a competition for the positions of associate professor, senior lecturer, and assistant. The competition for the position of dean, head of the department, and professor is organized by the expert qualification commission of the University. In addition, every year at the end of the academic year, the academic staff is rated according to the results of the annual assessment of their activity according to the point system, in accordance with the norms defined and approved by the University (https://osvita.kpi.ua/node/30). **Recommendations:** - consider the implementation of a teaching staff peer-review process	partially fulfilled
2.	The evaluation by students is mandatory. There is an evaluation form provided to students to evaluate all their teachers, being approved by the Senate, and applying after each semester training cycle. It is filled-in exclusively in the absence of any external factor and by guaranteeing the confidentiality of the appraiser. **Findings from the Self-Evaluation Report/ Visit:** Every year, Electronic Campus conducts a survey "Lecturer through the eyes of students" (https://telegra.ph/Oc%D1%96nka-vikladach%D1%96v-v-A%D0%86S-Elektronnij-kampus-05-31). This survey is conducted in order to improve the quality of the educational process at the university and is taken into account when forming the ratings of academic staff, and the answers of students will allow to obtain information to improve the effectiveness of the educational process. Since students take this survey from their personal accounts under their own login and password, no one can put pressure on them and influence the results of the survey. The survey is impersonal. All answers are confidential, the evaluation results will be available to the lecturer and the head of the department only in the form of a weighted average evaluation. There are Telegram channels Good KPI (https://t.me/kpi_777) and Bad KPI (https://t.me/kpi_666), where students express their opinions about the advantages and disadvantages of the university education system. There is also an Owl Telegram channel (https://t.me/analyticsKPI), where students independently evaluate lecturers. For messages, comments and complaints, there is an information bot of the faculty @fel_ikpibot. **Recommendations:** - none	fulfilled
3.	The academic staff carries out self-evaluation and he/she is also evaluated by the head of the department.	fulfilled

Findings from the Self-Evaluation Report/ Visit:

According to the Regulation on the rating of academic staff of Igor Sikorsky KPI (https://osvita.kpi.ua/node/30), heads of departments, professors, associate professors, senior lecturers, lecturers, assistants - must be subject to rating evaluation. The rating of the academic staff is a component of the internal system of ensuring the quality of the educational process at the University. The rating of the academic staff is carried out annually in the terms determined by the discharge of the University. After entering all the information about the results of its activity, each employee from academic staff generates its rating list (in the "Academic Staff Rating" module of the "Electronic Campus" system) and submits it to the head of the department for verification of the entered data. The discussion of individual rating sheets of the academic staff is held at the department meeting, and the general rating table is attached to the minutes of the department meeting. Based on the results of the discussion of the academic staff rating, the department makes proposals and recommendations regarding the fulfillment/non-fulfillment of the terms of the academic staff contract. Heads of departments and deans of faculties, directors of institutes receive generalized information about the academic staff ratings of the respective departments. In addition, before the beginning of each new academic year, lecturers fill out individual work plans, on the implementation of which they report at the department meeting at the end of each academic year.

Recommendations:
- *none*

C.5 Accessibility of the adequate learning resources

1.	The faculty disposes of incentive programmes for the students with outstanding results and recovery programmes for the students with learning difficulties.	fulfilled

Findings from the Self-Evaluation Report/ Visit:

At the state level, there are scholarship programs available to all students of our university, which are aimed at providing financial support to students who have outstanding results in educational, scientific and socially useful activities - a scholarship of the President of Ukraine, a scholarship of the Verkhovna Rada of Ukraine, a scholarship of the Cabinet of Ministers of Ukraine, scholarships of specialized enterprises (for example, Energoatom https://www.energoatom.com.ua/) for students of certain specialties. In addition, the university carries out activities to attract commercial enterprises that work in the fields in which our students study, to support students who have remarkable success in certain disciplines or generally have a high academic rating. An example of such a company is Melexis Ukraine (https://www.melexis.com/), which pays scholarships, including to students of the Faculty of Electronics. An increased academic scholarship is provided for excellent students (https://dnvr.kpi.ua/stupendiya/). According to the Procedure for preferential lending for higher education at KPI named after Igor Sikorsky, approved by Order No. 7-155 of August 27, 2020 (https://document.kpi.ua/files/2020_7-155.pdf), every student (citizen of Ukraine) who studies on the basis of an agreement on the provision of educational services at the expense of individuals or legal entities, may receive a soft loan. The soft loan is provided with an annual interest rate of 3% and the possibility of repayment within 15 years after 12 months after graduation. Adaptation and correction courses are provided for students who have problems with studying fundamental disciplines (https://kpi.ua/adapt). For students who have difficulties in completing the educational program, the normative acts of the state (Law of Ukraine "On Higher Education", Article 46) and the Regulation on Expulsion, Interruption of Study, Renewal and Transfer of Students of Higher Education to Igor Sikorskyi KPI (https://osvita.kpi.ua/index.php/node/178) is scheduled to receive an academic leave - a break in studies, during which the student is not expelled from the university, but also does not participate in the educational process. The duration of the academic leave is usually one year. In addition, the Regulation on current, calendar and semester control of study results at Igor Sikorskyi KPI (https://osvita.kpi.ua/index.php/node/32) and the rector's orders provide for the possibility of forming an individual study schedule for students who have objective circumstances that make it difficult to fulfill the schedule of the educational process in a timely manner (this updated position not yet approved) Students who have

	been expelled from the university before completing their studies in a certain educational program have the right to reinstatement regardless of the reason for the expulsion and the length of the study break. This right is given to them by the Law of Ukraine "On Higher Education" (Article 46) https://zakon.rada.gov.ua/laws/show/1556- 18#Text, by order of the Ministry of Education and Science of Ukraine No. 245 dated 15.07.1996 "On approval of the Regulation on the procedure for transfer, expulsion and renewal of students of higher education institutions" (https://zakon.rada.gov.ua/laws/show/z0427-96#Text) and the Regulation on expulsion, suspension of studies, renewal and transfer students of higher education at KPI named after Igor Sikorskyi (https://osvita.kpi.ua/index.php/node/178), formed on their basis. For students with special educational needs, training takes place in accordance with the Regulation on the organization of inclusive training at Igor Sikorsky KPI (https://osvita.kpi.ua/sites/default/files/downloads/Regulations_inclusive_edu.pdf). **Recommendations:** - none	
2.	The higher education institution has structures and procedures to facilitate the mobility of the students in the same system or between different systems of higher education, like the International Relation Office, commissions for the recognition of formally or non-formally acquired qualifications/ skills and competences, etc. **Findings from the Self-Evaluation Report/ Visit:** The incoming and outgoing academic mobility of students is regulated by the Regulation on Academic Mobility (https://osvita.kpi.ua/sites/default/files/downloads/Regulation_acad_mobility.pdf). The Department of Academic Mobility (https://mobilnist.kpi.ua/) provides information support and documentation of student and teacher mobility procedures. The Faculty of Electronics has an international office (https://fel.kpi.ua/international-office/) headed by an academic mobility coordinator who coordinates the faculty's academic mobility programs. Recognition of the learning results of the participants of the credit academic mobility programs will take place by crediting them with ECTS credits earned at the host institution of higher education, in accordance with the pre-signed training contract and individual academic mobility curriculum. The procedure for recognizing the results of studies under the academic mobility program is implemented by the deputy dean of the faculty for educational work together with the coordinator of academic mobility and the head of the graduation department. Decisions on the recognition of study results will be drawn up in the form of a protocol, a copy of which is provided by the coordinator of academic mobility to the department of academic mobility of the University. In addition, the Faculty of Electronics offers a double degree master program at the Technical University of Dresden, Germany (https://me.kpi.ua/podvijnyj-dyplom/). **Recommendations:** - insure that all the disciplines from the mobility and ECTS credits are recognized and that the disciplines acquired in the mobility are included as such in the diploma supplement	fulfilled
3.	The faculty, through the university, disposes of social, cultural and sports services for students, like: accommodation premises for at least 10% of the students, sports center, various advisory services, which have an efficient management. The students are informed on the existence of such services. **Findings from the Self-Evaluation Report/ Visit:** There are various sports facilities for students and teachers, namely: physical education building: there are more than 20 different sports sections. Also, student dormitories received equipped sports halls, reading rooms, rooms with table tennis. The campus has two football fields, a basketball court, a tennis court, training grounds, and a swimming pool. There are also summer and winter health camps for students: the Mayak health complex on the Black Sea coast, the Globus mountain sports and health camp in the Carpathians, the Polytechnic student health camp, and the Sosnovy health camp in the Kyiv region. The Art Center of Igor Sikorsky KPI. This is the place for rehearsals of the choir, the	fulfilled

bandurists' chapel and the theater club. In addition, the Art Center organizes and hosts meetings and lectures with prominent engineers, foreign teachers and celebrities. There are student workplaces ("Tower", "Colosseum", "Squirrel") where photo exhibitions, lectures and seminars are held with the active participation of various teachers. An open laboratory of Lampa electronics has also been created on the territory of the university (https://lampa.kpi.ua/), visiting which and using the equipment is free. The laboratory works in the areas of education and prototyping. The equipment allows you to study all areas of modern electronics using online courses and video lectures. It is also possible to use lab devices to create prototypes of your own designs. The Student Consolidation Center is available for students, on the basis of which a variety of events are held for students and with their participation, university and faculty events, engineering competitions and concerts of student bands (https://dnvr.kpi.ua/#m8). Social and psychological support for students is provided by the Student Social Service, the main task of which is the social development of students, psychological assistance, and promotion of an active social position of young people (https://dnvr.kpi.ua/#m6). Socio-humanitarian circles work for students https://telegra.ph/sochum-club-06-16. Students from other cities have the opportunity to settle in the university's dormitories - in total, there are 20 dormitories on the territory of the university, in which more than 13 thousand students live (more than 60% of the university's students). Taking into account the situation with the pandemic since 2020 and the martial law of 2022, the total number of students currently housed in dormitories is significantly smaller - students are mostly at home. Information about accommodation in dormitories is available on the campus website https://studmisto.kpi.ua/. Information about all opportunities and activities for students is available on the website of the university https://kpi.ua/index.php/kpi_students and the department of educational work https://dnvr.kpi.ua/

Recommendations:
- none

4.	The study programme provides relevant support to students for the learning process (career advice, tutorship, and assistance), in this way facilitating the acquirement of knowledge and skills and passing in a superior year of study. **Findings from the Self-Evaluation Report/ Visit:** The University pays great attention to the establishment of partnership relations with representatives of business, enterprises and organizations, with the aim of helping students in building a career. This is taken care of by the department of professional guidance - the Career Development Center (https://robota.kpi.ua/) of the Department On the website of the department, partners of the university, enterprises and organizations can leave information about their available vacancies, which students of all faculties of the university can familiarize themselves with. One of the events held by the university for the professional orientation of students is the job fair - this is a specialized event where employers and students of higher education/graduates have the opportunity to communicate in person, get first-hand information and find their dream job (https://robota.kpi.ua/#job_fair). Within each faculty and department there are persons responsible for career guidance work with students who actively interact with the career guidance department - the Career Development Center. The University has developed and operates the Regulation on promoting the employment of higher education applicants and graduates of Igor Sikorsky KPI, https://osvita.kpi.ua/index.php/node/44 To provide advisory assistance and mentoring, the curators of academic groups - employees of the graduation department (as a rule, scientific and pedagogical) are entrusted with organizing the system of relations of the students assigned to them through various types of educational, educational, organizational, advisory and extracurricular activities (Regulations on the curator in Ihor Sikorsky KPI, https://osvita.kpi.ua/node/173). In addition to curators of academic groups, each group has a curator from the student council. In addition, dual education is actively being developed and implemented at the university - the basic principles are laid out in the Regulation on the dual form of obtaining higher education at Igor Sikorsky KPI, https://osvita.kpi.ua/node/168. A mandatory component of all OPs, including this one, is the availability of practical training for students, which takes place at enterprises and organizations that are potential employers for students and university graduates.	fulfilled

	Recommendations: - none	
5.	There are sufficient personnel with adequate training to provide support services to students. **Findings from the Self-Evaluation Report/ Visit:** To support the educational process, 5 engineers of the department work at the department, including: a specialist in drawing up the schedule of pairs of the department, a specialist in setting up auxiliary equipment for conducting pairs, a specialist in the repair and maintenance of computer equipment, a specialist in the repair of laboratory equipment. **Recommendations:** - none	fulfilled
	C.6 Information management	
1.	At faculty level, the institution has a computer system which facilitates the collection, processing and analysis of data and information relevant for the efficient organisation and operation of the study programmes and of the other activities. **Findings from the Self-Evaluation Report/ Visit:** The "Electronic campus" system (https://ecampus.kpi.ua/) is an element of the university's information and telecommunications environment and is used for informational support of the daily activities of students, teachers, university employees, as well as for informational support of all types of innovative activities at the university. The main functions performed by the system include: - multilateral communication between students, teachers, scientific community; - formation of a single information resource that reflects the state of the scientific and educational process of the university; - provision of timely and prompt placement of: complete, objective, reliable and uncontroversial information about the educational process of the university; - dissemination of information about future events and activities and other reference information; - provision of centralized and convenient access to information about the activities of the rectorate and university divisions; - providing navigation through the entire information content of the system; - organization of interaction and information exchange between the Electronic Campus and other information resources and systems of the university. In the Electronic Campus system, virtual offices have been developed according to user profiles: student, teacher scientist, methodologist of the department. **Recommendations:** - none	fulfilled
	C.7 Transparency of the information of public interest with regard to the study programmes	
1.	The study programme provides complete, updated and easily accessible, both quantitative and qualitative, public information on the aims, teaching-learning process, resources, results and management system. **Findings from the Self-Evaluation Report/ Visit:** The website of the department (http://eds.kpi.ua/) is publicly accessible: - study program; - curriculum; - syllabi of educational components; - link to the schedule; - methodical materials; - teaching staff of the department. The site is partially available in English. **Recommendations:** - insure the translation of all public content in English language,	fulfilled
2.	The graduates receive, free of charge, the Diploma Supplement, which contains all the information provided by the regulations in force. **Findings from the Self-Evaluation Report/ Visit:**	partially fulfilled

	Along with the diploma, students receive a supplement to the diploma of the European model in two languages, which provides an objective description of the achievements and competencies of the graduate, at the cost of the production of the form. **Recommendations:** - provide the original version of scholarship documents to graduates without any charges	
C.8 Quality assurance by periodic external review		
1.	The higher education institution complies with the legal provisions regarding the external cyclical review of the evaluated study programme. **Findings from the Self-Evaluation Report/ Visit:** According to Part 1.6 of Art. 7 of the Law of Ukraine "On Higher Education", a higher education document is issued to a person who has successfully completed the relevant study program and passed certification and is issued by a higher education institution only for an educational program accredited in accordance with this Law. The name of the accreditation body (bodies) is indicated in the document on higher education, and information on the corresponding accreditation certificates and decisions issued by it (them) is included in the appendix to the document on higher education. In accordance with the Law of Ukraine "On Higher Education", the system of external quality assurance of educational activities of higher education institutions and the quality of higher education provides as a mandatory element of ensuring the availability of published decision-making criteria in accordance with the standards and recommendations of quality assurance in the European Higher Education Area ESG-2015 . The formation of criteria for assessing the quality of educational activities of higher education institutions of Ukraine is entrusted to the National Agency for Quality Assurance of Higher Education (NAQAHE). Mandatory conditions for accreditation are the compliance of the educational program and educational activities of the higher education institution under this educational program with the criteria for evaluating the quality of the educational program, which are determined by the National Agency and confirmed by the order of the Ministry of Education and Science of Ukraine (from 11.07.2019 No. 977). As of the moment of the accreditation, the educational program has a license of the Ministry of Education of the HD No. 1192560 (070864) dated 09/25/2017 (valid for 5 years). Accreditation of the NAQAHE educational program is planned for January 2023. **Recommendations:** - none	fulfilled

Other observations/findings:
- The NATIONAL TECHNICAL UNIVERSITY OF UKRAINE «IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE» is a leading university in Ukraine and the top technical university (in engineering specialties) in Ukraine.
- The level of financing of the university is good (as the NATIONAL TECHNICAL UNIVERSITY OF UKRAINE «IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE» is significantly better financed than the average Ukrainian university).
- There is a low teaching staff to student ratio, ensuring proper, student-centered guiding and counseling.
- The program has a good selection process in terms of competition among candidates for the tax-free places.
- The program has sufficient connections with the industrial environment, which seems to appreciate the skills of the graduates.

- The teaching materials are under revision and update (as all materials should be transposed in the state language, according to the Ukrainian law, by the end of next year).

Recommendations of the external evaluation committee:

- Consider the set-up an official board (industrial partners, teachers, stakeholders ..) To participate to the improvement of the educational program, meeting once a year minimum with an official report;

- Consider to establish a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including documentation of the proceedings;

- Consider adopting an institutional strategy for the transition towards the full digital books and educational materials

- Consider grouping the educational and documentation resources into a single system;

- Consider ensuring the appropriate coverage of the subjects in the curriculum and syllabuses with recent bibliographic; material existing in the university libraries in the language of teaching of the study program

- Consider providing clear and consistent free access to the curriculum via the web-site of the institution in the same way as the educational program does on its own department site

- Consider providing clear and consistent free access for the description (or syllabuses) of all elective professional-oriented disciplines (that can be selected by students in the positions "educational components in the university catalog" and "educational components in the faculty catalog") of the educational program

- Consider changing the approach for the elective components forming from groups, where students can select only one discipline from short list (3 or 4 proposed options) to free selection from the pool of elective disciplines;

- Consider removing duplicated disciplines from the f-catalog of elective disciplines and extend the list of the elective courses in f-catalog, proposed for the students;

- Consider transforming the common part of elective discipline into a compulsory discipline and propose as elective discipline the appropriate, unique content.

- Consider the development syllabuses for all elective components (disciplines) that are proposed for the students' selection before the time of choosing disciplines for the next semester/academic year.

- Consider the optimization of syllabus structure for the orientation of their content on students (clear information what student should do and what student will reach when successfully finished the educational component).

- Consider increasing the number of exams in the educational program for reaching at least 50%.

- consider the introduction in the curriculum of practice/ internship in enterprise, for a total of at least 6 weeks (with 30 hours/week workload)

- Consider publishing the list of the companies that are ready to host the students for the practice with contact details.

- Consider developing more effective procedures for receiving the opinion of the hired graduates and monitoring their employability.

- Consider establishing a more systematic and procedural approach to the consultation of the stakeholders and the analysis and use of their feedback, including documentation of the proceedings;
- Prepare and publish annually the quality assessment report for each study program
- Consider the implementation of a teaching staff peer-review process
- Provide the original version of scholarship documents to graduates without any charges

Other recommendations:
- Consider adding more specific competencies and learning outcomes to the program, more closely related to the focus of the program and their unique disciplines.
- It is recommended to update some of the laboratory equipment (especially physical equipment) to the newer technology commercially available on the market.
- Consider the clarification of the requirements for the selection of the best candidates by including specific requirements (e.g. Detailed field of expertise) for the open position calls.
- Consider placing the approved (scanned copies with the signatures and stamps) curriculums on the official web-site of the ntu kpi for better transparency.
- Consider adding specialty-oriented tasks in the fundamental disciplines that will motivate the students for the study in the field of specialty in the following years.
- Consider to update the course works syllabuses and add information about possible topics of the course works so student cant select the topic that are in the area of interests before the beginning of the semester.
- Consider the possibility to increase the number of the contact hours for the 5th semester to 23-24 (such changes are recommended to be implemented by means of increasing the contact hours for the disciplines "circuit design" and "analysis and calculation of electronic circuits".)
- Consider adding free elective disciplines (with credits in addition to the 30 compulsory credits of the semester) to the curricula.
- Consider to introduce appropriate procedures for a more effective monitoring of the career progress of the graduates;
- Consider taking into account also the results of the surveys conducted by the student union;
- Consider the effective of information on research provided through the website, in both ukrainian and english language.
- Consider increasing the visibility of the published research (target higher ranked journals and conferences);
- Insure that all the disciplines from the mobility and ects credits are recognized and that the disciplines acquired in the mobility are included as such in the diploma supplement;
- Insure the translation of all public content in English language.

ROMANIAN HIGHER EDUCATION QUALITY ASSURANCE AGENCY
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▶PROPOSAL OF THE EVALUATION COMMISSION

The proposal of the Commission of permanent specialized experts - Engineering Sciences II, adopted in online meeting from the date of 10.07.2023 was *maintaining accreditation* and *awarding* EUR-ACE certification of the bachelor's study programme **ELECTRONIC COMPONENTS AND SYSTEMS**, for the form of education full-time, with **240** of credits and tuition capacity in the first year of studies of **40** of students, according to the Extract from the minutes, the Evaluation Report of the Commission and the Evaluation Sheets, registered at ARACIS with no. 4561 from 10.07.2023.

▶THE EVALUATION OF THE COUNCIL AND THE OPINION OF THE ARACIS COUNCIL

The ARACIS Council appreciated that the evaluation process was carried out in accordance with the provisions of Government Decision no. 915/2017 regarding the amendment of the annex to Government Decision no. 1.418/2006 for the approval of the External Evaluation Methodology, the standards, the reference standards and the list of performance indicators of the Romanian Agency for Quality Assurance in Higher Education.

From the analysis of the self-evaluation report, based on the reports submitted by the commission of permanent specialized experts and the opinion of the Director of the Accreditation Department regarding compliance with the procedures, the Romanian Agency for Quality Assurance in Higher Education found that:

Bachelor's study programme **ELECTRONIC COMPONENTS AND SYSTEMS** **satisfies** mandatory normative requirements, standards and performance indicators, specific standards and standards for EUR-ACE label.

▶OPINION OF THE ARACIS COUNCIL

In the Report of the Romanian Agency for Quality Assurance in Higher Education, developed and approved in accordance with the provisions of Law no. 87/2006, it's being suggested:

⇒ **MAINTAINING ACCREDITATION** – monitoring after 2 years and *awarding* EUR-ACE label undergraduate study programme **ELECTRONIC COMPONENTS AND SYSTEMS**;

⇒ Bachelor field – **Electronics and Telecommunications**;

⇒ from the Faculty of **Electronics**;

⇒ **The National Technical University of Ukraine „Igor Sikorsky Kyiv Polytechnic Institute"**;

⇒ form of education – full-time;

13.07.2023

⇒ number of credits – **240**;

⇒ tuition capacity in the first year of study of **40** students.

The report of the Romanian Agency for Quality Assurance in Higher Education and the proposed solution were discussed and approved by the ARACIS Council on 13.07.2023.

<u>Executive Office of the ARACIS Council</u>

President	Univ. Assoc. Dr. Octavian Mădălin BUNOIU
Vice-president	Univ. Prof. Dr. Eng. Valentin NĂVRĂPESCU
General Secretary	Univ. Prof. Dr. Eng. Dorian COJOCARU
Director of the External Evaluation Department	Univ. Prof. Dr. Eng. Neculai-Eugen SEGHEDIN
Accreditation Department Director	Univ. Prof. Dr. Eng. Simona LACHE

This notice is valid until the date of 27.07.2028 (five years from the approval ARACIS Council Meeting). The request for periodic evaluation will be submitted three months before the expiration of the validity period under the penalty of liquidation of the bachelor's study programme.

This opinion is submitted to the Ministry of Education in order to prepare the Government Decision and for the attention of the The National Technical University of Ukraine „Igor Sikorsky Kyiv Polytechnic Institute".

Bucharest, July, 2023   *SL/CM*
UA01/ 4561 MA

The synthetic presentation of the results of the ARACIS evaluation for the undergraduate university study programme analyzed:

No. crt.	Naming of the indicators	Remarks
1.	Higher education institution (name in Romanian and English)	Universitatea Națională Tehnica a Ucrainei „Institutul Politehnic Igor Sikorsky din Kiev"/ National Technical University Of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»
2.	The field of undergraduate university studies of the evaluated programme (name in Romanian and in English)	Electronica, Telecomunicații și Tehnologii Informaționale/ Electronics and Telecommunications (17) – Ukraine
3.	Bachelor's degree programme (title in Romanian and English)	Componente si Sisteme Electronice Electronic Components and Systems
4.	The number of enrolled students per year of study	26/ 18/ 17/ 12
5.	The number of teaching staff teaching at the programme, of which holders	32 total cadre didactice/ teaching staff 24 total titulari/ tenured
6.	Diploma issued	Inginer Engineer
7.	Qualification level according to CNC	6
8.	Duration of schooling (expressed in number of semesters)	8
9.	Total number of ECTS credits	240
10.	Targeted qualifications/occupations	Inginer tehnolog (electronica)/ Technology engineer (electronics) Inginer proiectatnt (electronica)/ Design engineer (electronics)
11.	The approval given to the evaluated study programme	menținerea acreditarii cu monitorizare după 2 ani și de acordare a certificării EUR-ACE/ maintaining accreditation with monitorization after 2 years and granting EURACE certification
12.	Date of last ARACIS assessment	-
13.	ARACIS commission of expert evaluators:	Prof. dr. ing. Constantin VERTAN – Politehnica University of Bucharest,

		Romania Dr. Oleksandr Velihorskyi - National University Chernihiv Polytechnic, Chernihiv, Ukraine Prof. Mohamed RAMDANI – Ecole Superieure d'Electronique de l'Ouest France ACOMI Ovidiu Cristian, Concurrence Counsel, Romania Polina Hombalevska - UKRAINIAN CATHOLIC UNIVERSITY
14.	Evaluation visit period	31.05-02.06.2023