

The Romanian Agency for Quality Assurance in
Higher Education



External Evaluation Report (REE) for bachelor study programmes

Higher education institution / Education provider organisation:	National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"
Faculty:	of Biomedical Engineering
Bachelor's degree domain:	G22 Biomedical Engineering
Bachelor's study program:	Medical engineering
Form of education:	Full-time study
Language of instruction:	ukrainian
Geographical location:	Kyiv, Ukraine
Duration of studies:	4 years (8 semesters)
Number of credits:	240
Objective of the external evaluation	Maintenance of accreditation and granting of EUR-ACE® certification

Composition of the ARACIS Evaluation Commission

Crt. no.	Name and surname	Role	Signature
1.	<i>Milici Laurențiu Dan</i>	Commission coordinator	
2.	<i>TRUNOVA Anna</i>	Expert Evaluator	
3.	<i>ACOMI Ovidiu</i>	Member of the Register of Employers	
4.	<i>BIDNYK Maryna</i>	Student evaluator	

I. Introduction

The external evaluation report of the undergraduate study program Medical Engineering, from the Faculty of Biomedical Engineering from National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" was prepared following the external quality assessment procedure for the authorization of undergraduate study programs, because of the conclusion of the contract for the provision of services for the external evaluation of the quality of education. In order to carry out this process, the composition of the expert commission for the external quality assessment was approved in the following composition:

- Prof.dr.eng. MILICI Laurențiu Dan - Commission Coordinator
- Prof.dr.eng. TRUNOVA Anna - Member
- Eng. ACOMI Ovidiu - Member
- Student BIDNYK Maryna - student evaluator

The visit period is: June 23-24, 2026. description of the higher education institution or education provider organization, as the case may be (establishment, evolution, mission, governance, structure, programs/fields of university studies, completion of external evaluation procedures for the quality of education).

The first edition of the degree program "Medical Engineering" was approved by the Methodological Council of Igor Sikorsky Kyiv Polytechnic Institute (minutes No. 7 dated March 29, 2018), changes and additions to the degree program were agreed with the Scientific and Methodological Commission of the University in the specialty 163 Biomedical Engineering (minutes No. 1 dated June 3, 2020). The degree program was discussed and amended after receiving wishes and proposals from employers and applicants of the Igor Sikorsky Kyiv Polytechnic Institute, agreed with the NMKU 163 Biomedical Engineering and approved at a meeting of the Department of Biomedical Engineering. The degree program "Medical Engineering" of the first (bachelor's) level of higher education was developed on the basis of the Law of Ukraine "On Higher Education". The administrative staff of the HEI, the academic community and employers by specialty were involved in the development of the degree program. In 2021, the degree program "Medical Engineering" was approved by the Scientific and Methodological Commission of the Igor Sikorsky Kyiv Polytechnic Institute for the specialty 163 Biomedical Engineering (minutes No. 2 dated 02/19/2021) and the Methodological Council of the Igor Sikorsky Kyiv Polytechnic Institute. Igor Sikorsky (Minutes No. 6 dated 02/25/2021), approved by the Academic Council of Igor Sikorsky Kyiv Polytechnic Institute (Minutes No. 3 dated 03/15/2021) and put into effect by the Order of the Rector of Igor Sikorsky Kyiv Polytechnic Institute No. HOH/89/2021 dated 04/19/2021. In 2016, specialty 163 Biomedical Engineering successfully passed accreditation for the first (bachelor's) level of higher education under the preliminary conditions (Order of the Ministry of Education and Science of Ukraine No. 1565 dated 12/19/2016). The educational program is being updated starting in 2016. The first changes (2018) took into account the draft standard of higher education, where general competencies were brought into line with the relevant ECs. In 2020, the changes were directly related to the approval of the higher education standard in the specialty "Biomedical Engineering" for the first (bachelor's) level of higher education (11/19/2018). The 2018 study program was monitored for compliance with the standard, taking into account the possibilities of forming individual educational trajectories of students, proposals from participants in the educational process and employers. Changes in the 2021 study program are due to new trends in global and national education, the introduction of information technologies and the wishes of applicants and stakeholders. Recommendations from members of the Public Organization "All-Ukrainian Association of Biomedical Engineers and Technologists" were also taken into account. In 2022 and 2023, the changes related to the analysis and implementation of recommendations provided during the accreditation procedure of the educational program <http://surl.li/jgwajb>, which took place in 2022, in which the highest exemplary grades "A" were received for criteria 3. "Access to the educational program and recognition of learning outcomes"

and 4. "Teaching and teaching according to the educational program" <https://lnk.ua/k4x9ZRxy>. In 2024, the changes in the educational program related to the recommendations of stakeholders, in particular Svitlana Burburska (chief engineer of the biomedical engineering laboratory of the State Institution "Institute of Traumatology and Orthopedics of the National Academy of Medical Sciences of Ukraine"), regarding the implementation of educational components related to prosthetics <http://surl.li/woyvju>. In 2025, in accordance with the Law of Ukraine on Amendments to the List of Specialties <https://zakon.rada.gov.ua/laws/show/188-2025-%D0%BF#Text>, changes were made to the educational program and curriculum of students in the field of knowledge G "Engineering, Production and Construction" and specialty G22 Biomedical Engineering (which corresponds in the 2024 edition: 163 Biomedical Engineering) and taking into account the proposals according to <http://surl.li/hbpppw>. The differences in the degree program compared to similar degree programs of other HEIs are mainly related to the regional context, i.e. the peculiarities of the labor market. At the same time, joint work is regularly carried out to improve the degree program, in particular, discussions are held among students, teachers of departments of Igor Sikorsky Kyiv Polytechnic Institute, employers, colleagues from other HEIs of Ukraine, where students in the specialty Biomedical Engineering are trained.

I. Methods used

To evaluate accreditation, the external quality assessment procedure was followed. The ARACIS evaluation committee analysed the documents provided: the internal evaluation report and its annexes, other additional documents requested, information available on the websites of the university, faculty and department.

The visit followed the activities agreed in the Visit Agenda: interviews with the management structures of the university, faculty, department, the program coordinator, teaching staff supporting activities in the program, representatives of employers, representatives of the CEAC at the university and faculty level, representatives of the Ethics Committee. Also, educational and research spaces, the library, the faculty secretariat, and social-student spaces were visited.

II. Assessment of the degree of compliance with standards and performance indicators

DOMAIN A. Institutional capacity

Criterion A.1. Managerial and administrative institutional structures and processes, involving students and other stakeholders

Standard S.A.1.1. Organizational components and institutional processes

The HEI has in its structure organizational components that operate on the basis of appropriate competences, attributions, processes and application procedures, through which an effective management system is ensured.

I.P.A.1.1.1 indicator

In order to carry out the university program/field of studies, the HEI has adequate organizational components and a management system, the functioning of which is based on methodologies, regulations and procedures periodically revised, under the conditions of the law.

The study program Medical Engineering (ME) is established in 2018, within the department of biomedical engineering Faculty of Biomedical Engineering of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", in the specialty 163 Biomedical Engineering on basis Higher Education Standard of Ukraine for a bachelor's degree in the specialty 163 "Biomedical Engineering," as approved by the

Ministry of Education and Science of Ukraine No. 1204 dated November 19, 2018 (<https://lnk.ua/1V9k7ox4g>), and based on the Law of Ukraine "On Higher Education". The first edition of the study program Medical Engineering was approved by the Methodological Council of the Kyiv Polytechnic Institute named after Igor Sikorsky (No. 7 dated 03/29/2018), changes and additions to the educational program were agreed with the Scientific and Methodological Commission (SMC) of the university for the specialty 163 Biomedical Engineering (No. 1 dated 06/03/2020). The educational program was discussed and changed after receiving wishes and proposals from employers and applicants of the higher educational institution Igor Sikorsky Kyiv Polytechnic Institute, agreed with the SMC163 Biomedical Engineering and approved at a meeting of the Department of Biomedical Engineering. Changes in the 2021 study programme ME are due to new trends in global and national education, the introduction of information technologies and the wishes of applicants and stakeholders (<https://lnk.ua/jVWPmRoNk>). The recommendations of members of the Public Organization "All-Ukrainian Association of Biomedical Engineers and 1The performance indicators used in the provisional authorising procedure of the PSUL are listed in Annex 1 to this Guide. For the PSUL accreditation and maintaining accreditation evaluation procedures, the performance indicators included in the Annex to the Methodology section II apply, excluding standard S.C.3.2. and indicator I.P.C.3.2.1. Technologists" were also considered. In addition, the university has formed a unique database (<https://lnk.ua/wVlzp3D4P>) for tracking recommendations during accreditation (<https://osvita.kpi.ua/accreditation>). In this database, each of the relevant departments considers and improves the educational process according to the recommendations, so, for the educational program Medical Engineering, the list of elective components for the formation of an individual educational trajectory was expanded. All versions of the Medical Engineering educational program are available at https://osvita.kpi.ua/163_OPPB_MI. The administrative staff of the HEI, the academic community and employers in the specialty were involved in the development of the Medical Engineering educational program. The revision of the Medical Engineering educational program took place in 2021, 2022, 2023, 2024 and 2025. The first changes considered the draft higher education standard, which brought the general competencies into line with the relevant educational components. In 2020, the changes were directly related to the approval of the standard of higher education in the specialty "Biomedical Engineering" for the first (bachelor's) level of higher education (19.11.2018). The 2018 EP was monitored for 6/27 compliance with the standard, considering the possibilities of forming individual educational trajectories of students, proposals of participants in the educational process and employers. Changes in the 2021 EP are driven by new trends in global and national education, the introduction of information technology, and the wishes of students and stakeholders. The recommendations of the members of the NGO "Ukrainian Association of Biomedical Engineers and Technologists" were also taken into account. Changes in the Medical Engineering educational program 2022 were due to the preparation for the accreditation examination by the NAQA.

Recommendations: Not the case

The indicator is: met

Standard S.A.1.2. Stakeholder engagement

The HEI shall demonstrate that it involves relevant stakeholders in the development of methodologies and regulations, as well as application procedures.

Indicator I.P.A.1.2.1

The opinions of the members of the faculty and department, respectively of the branch or extension and of other interested parties are taken into account in the process of adopting and revising the methodologies, regulations and application procedures.

The University has an Educational and Scientific Centre for Applied Sociology "Socioplus", which has been conducting research on the quality of education using various sociological methods since 2002. Among other things, the Centre conducts annual surveys of graduates, applicants and stakeholders on issues

related to the analysis of the educational process and proposals for improvement. Examples of the results of surveys of graduates, applicants and employers are published on the department's website: <http://surl.li/ugefz>, <http://surl.li/ugehz>, <http://surl.li/ugejc>. The conclusions of the analysis of the data obtained are taken into account in the improvement of the educational programme. The following innovative tools have been proposed and implemented to encourage greater involvement of the educational and scientific community in the field in order to exchange experience and promptly take into account proposals for improving the educational programme. Chat groups have been created on WhatsApp https://bmi.fbmi.kpi.ua/discussion_educational-programs/: «Група роботодавців для обговорення ОП G22», «Група здобувачів для обговорення ОП G22», «Група випускників для обговорення ОП G22» ("SEP Group for Discussion of Study program (SP) G22", "Employers' Group for Discussion of SP G22", "Applicants' Group for Discussion of SP G22", and "Graduates' Group for Discussion of SP G22"). Industry experts and stakeholders from all over Ukraine are involved in these groups. The department's resource platform administers the website of the All-Ukrainian public organisation "Association of Biomedical Engineers and Technologists", which publishes draft updates to educational programmes (https://bmi.fbmi.kpi.ua/science/association-biomedical-engineers/discussion_of_ep/), which are then discussed at Association meetings and in the WhatsApp group "Асоціація біомедичних інженерів і технологів" ("Association of Biomedical Engineers and Technologists") created for operational discussion. The formation of the educational program was carried out taking into account the positions of stakeholders, for this purpose, appropriate tools have been developed <https://bit.ly/3kCMedM>. Employers are directly involved in the development of the elements of the study program, the process of employment of graduates. At the same time, the interests, wishes and priorities of employers in terms of professional competencies of the study program are taken into account, which ensure flexible adaptation and effective work in many competitive areas of intellectual activity, as well as the ability, depending on the needs, to independently master related professions when solving new tasks.

Recommendations: Not the case

The indicator is: met

Criterion A.2. Material base and optimization of its use

Standard S.A.2.1. Material Base	
The HEI has immovable and movable property suitable for the development of the program/field of university studies.	
Indicator I.P.A.2.1.1	The HEI has, under the law, spaces dedicated to the appropriate educational, research and administrative processes, as well as for services for students, doctoral students and trainees, which ensure a favorable environment for life and study, including for those with disabilities. Optimal spaces for staff activities are also provided. They are adequately equipped. <i>The facilities made available to students, including the related equipment, are quantitatively and qualitatively adequate for the development of the objectives of the study program, as conceived and planned, and allow the application of study methods.</i>

To provide students with the opportunity to acquire modeling, simulation and design skills in the field of biomedical engineering, the Sikorsky Challenge Additive Technologies Science Park <https://www.facebook.com/photo/?fbid=1123980665936094&set=a.240325010968335> has been opened at the university, designed for educational and research projects in the field of biomedical engineering, the development of startups in the field of prosthetics and rehabilitation and administrative processes for training veterans and the formation of a veteran educational space, as well as for servicing students, doctoral students and interns, providing a favorable environment for studying, in particular for

persons with disabilities, for whom all conditions are created for their stay, study and receipt of educational services. Students studying under the degree program have the opportunity to undergo professional practice in the educational laboratories of the Department of Biomedical Engineering (<https://bmi.fbmi.kpi.ua/laboratories/laboratory-department>) and/or in stakeholder companies using the material and technical base of employers (<https://bmi.fbmi.kpi.ua/laboratories/stakeholder-laboratories>). The Department of Biomedical Engineering has premises for serving students, doctoral students and interns, appropriate material and technical support for training according to the curriculum (<https://bmi.fbmi.kpi.ua/laboratories/logistics>), which are used as the department's own educational spaces and the university's educational spaces. The department has 2 computer classes and educational laboratories (<https://bmi.fbmi.kpi.ua/laboratories/computer-class>). For teaching compulsory and elective disciplines from the F-Catalog, the material base of stakeholders (<https://bmi.fbmi.kpi.ua/educational-areas/stakeholders>) is used. During classes, students receive the latest scientific, technical and engineering information from teachers and representatives of stakeholders. Access to educational and methodological support is possible in the electronic library of the department (<https://bmi.fbmi.kpi.ua/teaching/library>) and the university library (<https://www.library.kpi.ua>), or in the electronic fund of the Department of Biomedical Engineering on ELAKPI (<https://bit.ly/3c9lhmv>) and in the AIS system "Electronic Campus" (<https://ecampus.kpi.ua>). During distance learning, Zoom/Google meet video conferencing services are used (<https://bmi.fbmi.kpi.ua/teaching/remote-work>). Students can work both in the premises of the department and in the library (15 reading rooms), and order electronic delivery of documents, delivery of books by mail, and also use the interlibrary subscription service to order printed publications from the funds of other libraries. Also, for educational and innovative events, the Educational and Innovation Center for Prosthetics and Rehabilitation has been opened <https://kpi.ua/nicpr>, where students of the Medical Engineering educational program have the opportunity, within the framework of the Center's cooperation with leading domestic manufacturers of prostheses - the company "Parashar Industries", the Center for Prosthetics, Orthosis and Rehabilitation "Without Limits" and LLC "Esper Bionic", to undergo pre-graduate practice, complete bachelor's projects and even now, in conditions of martial law, visit operating production facilities. The innovative component of the Center's development strategy involves the use of the latest technologies that are being studied, developed, and tested. Its implementation will allow even more students and scientists from our country and countries around the world to join the innovation ecosystem "Sikorsky Challenge Ukraine", who will be able to implement their ideas through the use of modern technologies for the manufacture of samples and prototypes, strengthen networking among scientists and direct their efforts to strengthening the innovative component of the industry. The indicator is: met/partially met/not met.

Recommendations: Not the case

The indicator is: met

Standard S.A.2.2. Material Base Management

The organizational components optimally and sustainably manage the immovable and movable assets that they use for the evaluated program/field of university studies.

Indicator I.P.A.2.2.1	Immovable and movable property shall be adequately maintained so as to ensure optimal conditions for study, research and living, as well as for work.
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The University, subject to the legislation of Ukraine (Law "On Accounting and Financial Viability", Regulations of the Ministry of Finance No. 879), carries out a periodic inventory process. At the time of inventory, a working inventory committee is created at the Department of Biomedical Engineering, which includes representatives of accounting and management, including the manager departments, and qualified specialists. The inventory commission checks all types of assets (existing, possessions, materials, assets) and requirements (<https://document.kpi.ua/taxonomy/term/119>). Inspections carried out at the Department of Biomedical Engineering did not reveal any damage to the conservation of material assets and costs, which must be properly maintained in the proper state of the material mine. Obviously, the

material and technical security of the Department of Biomedical Engineering will ensure a high level of efficiency in the initial process of scientific and research activities (<https://bmi.fbmi.kpi.ua/laboratories/logistics>).

Recommendations: Not the case

The indicator is: met

Criterion A.3. Adequate human resources and transparent personnel recruitment procedures, developed in accordance with the law

Standard S.A.3.1. Human Resources

The HEI has the necessary human resources for the organization and conduct of the evaluated university program/field of study.

Indicator I.P.A.3.1.1	The human resources of the organizational component are adequate for carrying out the activities related to the program/field of university studies evaluated. The teaching staff has the necessary qualifications and professional competences to teach the subjects that correspond to them in the state of functions.
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All the teaching staff has the necessary qualifications and professional competences to teaching in the educational program comply with clauses 37 and 38 of the Licensing Conditions Educational Activities No. 1187 with relevant amendments (<https://zakon.rada.gov.ua/laws/show/1187-2015-%D0%BF#Text>), approved by the Cabinet of Ministers of Ukraine. For example, the head of the department Shlykov V.V. has a diploma of higher education in the specialty "Physical Electronics" and teaches the discipline "Microprocessor technic", professor Ivanets O.B. has a diploma in the specialty "Electronic Devices" and teaches the discipline "Digital and Analog Circuit Engineering", Associate Professor S.I. Vovianko defended her PhD thesis in the specialty "Biochemistry" and teaches the discipline Bioorganic Chemistry, Associate Professor L.E. Kalashnikova has a diploma of higher education in the specialty "Biophysics" and teaches the disciplines "Biophysics" and "Thermodynamics of biological processes and systems", Professor Igor Linchevsky defended his doctoral dissertation in the specialty "Solid State Physics" and teaches the discipline "Physics", etc.. In addition, the teachers of the department have scientific activity according to clause 38 of the Licensing Conditions for Educational Activities No. 1187 related to engineering innovations in biomedical engineering. To organize and implement the educational process at the Department of Biomedical Engineering, educational and innovative cooperation programs with leading research institutions of Ukraine are successfully operating (<https://bit.ly/3nc9OsD>). Employees of leading institutions teach at the Department of BmE part-time: Assoc. Prof. Sychyk M.M. from the State Institution "National Institute of Cardiovascular Surgery named after M. Amosov" teaches the educational component "Biothermodynamics and Mass Transfer"; Senior Researcher Dubko A.G. from the Institute of Electric Welding named after E.O. Paton teaches the educational component "Biomedical Sensor Systems"; Prof. Orel V.E. from the National Cancer Institute of the National Academic Science of Ukraine teaches the diseducational component "Radiation Safety and Dosimetry". Also, Associate Professor Biloshitska O.K. simultaneously a stakeholder (part-time) of the State Scientific Institution "Scientific and Practical Center for Preventive and Clinical Medicine" of the State Administration of Affairs, on the research materials and material and technical support of which the study of selective disciplines "Medical Information Systems" and "Quality Management System in Medicine" is carried out. Under the guidance of representatives of employers, who are also leading specialists and practicing professionals in the field of biomedical engineering (Prof. Khudetsky I.Yu., Prof. Orel V.E., Senior Researcher Dubko A.G., Associate Professor Sychyk M.M.), bachelor's theses are being completed under this study programme in the relevant subject areas. In accordance with clause 1.5 of the Regulation on the system of internal quality assurance of higher education (<https://bit.ly/3ky5y56>), the HEI quality system covers the system of teaching staff improvement. Advanced training is carried out in accordance with the Regulation on advanced training of pedagogical and scientific-pedagogical workers (<https://bit.ly/3oto8ML>), at least once every 5 years. To improve the

professional level of personnel, advanced training is carried out in HEIs in accordance with the developed and approved plans; scientific seminars and conferences on current problems of education and science; lectures by foreign partners from leading HEIs in Europe and the world. Education", The structure of HEIs includes the Educational and Methodological Complex "Institute of Postgraduate which provides advanced training for teachers (https://ipo.kpi.ua/povyshenie_kvalif/pkv-kpi/). List of advanced training programs for 2025 2026 academic year is listed on the website of the National Research and Development Institute (https://ipo.kpi.ua/povyshenie_kvalif/pkv-kpi/). Most teaching staff undergo mandatory advanced training here. Teaching staff undergo internships in research institutions of Ukraine and under the Erasmus+ academic mobility programs. Every year, employer companies that are partners of the university and the graduate department of BmEI conduct advanced training courses. Assoc. Prof. Biloshitska O.K. (National Medical University named after O.O. Bogomolets, DNU "NPC PKM" DUS), Prof. Orel V.E. (National Cancer Institute of NASU), Prof. Maksymenko V.B. (Institute of Electric Welding named after E.O. Paton), Prof. Ivanets O.B (Scientific and Production Association "Teleoptics", specializing in the production of medical equipment <https://www.teleoptic-ltd.com/>). Also, the department's teaching staff are actively involved in international internships (Israeli Independent Academy for Development of Sciences, Rishon Le Zion (Israel). According to the legislation of Ukraine, allowances are paid to the official salary for academic degrees, academic titles and length of service. A system of incentives for NPP for achievements in the professional field has been created. In accordance with the Charter and the Collective Agreement (<https://bit.ly/3DfQYGp>), the procedure for awarding and encouraging NPP is determined. For special achievements, the university administration, together with the trade union organization, may apply for the nomination of employees for state awards. To stimulate the development of teaching staff skills in HEIs, a number of competitions have been introduced (<https://kpi.ua/agreement>): competitions for the nomination "Teacher Researcher", "Young Teacher-Researcher" with appropriate material incentives (<https://bit.ly/3Hm5f76>); scholarships of the Cabinet of Ministers of Ukraine for young scientists; competition for the best textbooks (<https://bit.ly/3kBXmRg>), etc. The publication of research results is also encouraged in accordance with the Regulations on rewarding employees and applicants for higher education for publications in publications indexed in the international scientometric databases Scopus and Web of Science (https://document.kpi.ua/files/2022_HOH-38.pdf). One of the forms of developing teaching skills is the organization of short-term programs, seminars, training and lectures aimed at improving the qualifications of teaching staff. There is also a system of non-material incentives for teachers - awarding them with diplomas of the Academic Councils for special achievements and achievements.

Recommendations: Not the case

The indicator is: met

Indicator I.P.A.3.1.2	The HEI ensures the professional and personal development of the staff.
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Standard S.A.3.2. Recruitment procedures

The recruitment procedures for teaching staff comply with the legal provisions.

Indicator I.P.A.3.2.1	The recruitment procedures are in accordance with the legal provisions, established and carried out in a transparent manner.
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The recruitment procedures for teaching staff at Igor Sikorsky Kyiv Polytechnic Institute is carried out in accordance with the Procedure for conducting competitive selection or election by competition when filling vacant positions of the National Educational Service and concluding employment agreements (contracts) with them (<https://bit.ly/3CjQnCc>). Competitive selection is carried out on the principles of openness, transparency, legality, equality of rights of members of the competition commission, collegiality of decision-making by the competition commission, independence, objectivity and justification of the decisions of the commission, impartial attitude towards candidates for vacant positions of the teaching staff.

The conclusion of the department is transferred to the EQC of the faculty, which must include a higher education applicant. Then, at the EQC interview, the submitted documents, the conclusion of the department and the EQC are considered in the presence of the applicant. After the final decision of the EQC of the university (in the event of a positive selection decision), an employment agreement (contract) is signed.

Recommendations: Not the case

The indicator is: met

Criterion A.4. Digitization of education processes

Standard S.A.4.1. Digital transformation

The digital transformation process at the level of the organizational component envisages administrative simplification and increasing the quality of services offered to members of its own community and third parties.

Indicator I.P.A.4.1.1	The organizational component uses IT tools within its own procedures in order to improve access and ensure quality services for members of its community and indirect beneficiaries of education.
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The University has implemented digital technologies that greatly simplify the management and organisation of the educational process. Automated information system ("Digital KPI") my.kpi.ua (<https://my.kpi.ua/>). It covers all aspects of the educational process: development of educational programmes, academic and working curricula, syllabi, class schedules, procedures for student selection and approval of elective disciplines, creation and maintenance of certificate programmes, calculation of teaching loads for lecturers and departments. The system provides support for teachers' offices, students, department secretaries, methodologists, deans, and administrators. Interaction with the State Database of Educational Institutions is ensured. Automated system "KPI Campus" (https://ecampus.kpi.ua). It provides for the uploading of methodological materials on disciplines and the maintenance of electronic records of current, calendar and semester control. In addition, this system provides a curator's office for communicating with the group and tracking the results of their assessments; Campus also displays teacher ratings with breakdowns by type of activity, the results of student evaluations of teachers based on the results of an anonymous survey conducted each semester. The "Sikorsky KPI Automated Distance Learning System" (based on Moodle) (<https://do.ipk.kpi.ua/>) is used to create distance learning courses. It provides all procedures related to distance learning: placement and authorised access to teaching materials, conducting control measures and evaluating results. In addition, the University has introduced a system of websites for all structural units, from the main KPI website to department websites, where all important events and materials related to the educational process are covered. For example, the website of the Department of Biomedical Engineering is <https://bmi.fbmi.kpi.ua/>. Chat groups have been created in WhatsApp and Telegram messengers for quick communication.

Recommendations: Not the case

The indicator is: met

III. DOMAIN B. Educational effectiveness

Criterion B.1. Content and relevance of study programmes

Standard S.B.1.1. Content of the study program

The study program is based on a curriculum that aims to ensure that students achieve the expected learning outcomes

Indicator I.P.B.1.1.1	The university study program is developed and structured in relation to the expected learning outcomes and is organized on the basis of transferable study credits. It encompasses the totality of learning, teaching, practical training, research and assessment experiences that together lead to a university qualification.
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The educational programme 'Medical Engineering' (ME) at the Department of Biomedical Engineering, Faculty of Biomedical Engineering in Igor Sikorsky Kyiv Polytechnic Institute (KPI), is designed and structured to achieve clearly defined and explicitly expressed programme objectives. The programme is developed to prepare highly qualified, competitive, and globally integrated bachelor's degree specialists in Specialty G22 Biomedical Engineering.

The programme is built around transferable ECTS credits and encompasses learning, teaching, practical training, and research activities. It covers a broad spectrum of competency areas:

- Technical disciplines (ZO07–ZO08, ZO10, PO04, PO07–PO08, PO10–PO11, PO13–PO20);
- Software and information disciplines (ZO09, PO12, PO15);
- Medicine and biology disciplines (PO03, PO05, PO06, PO09).

Professional outcomes (PO01–PO20) are complemented by general competencies (ZO01–ZO14), providing a coherent framework aligned with the programme's subject area. Practical training is organised through cooperation with enterprises developing and operating biomedical systems, while a wide range of elective courses offers in-depth, interdisciplinary knowledge.

The programme documentation is publicly available for all stakeholders: https://osvita.kpi.ua/sites/default/files/opfiles/163_oppb_mi_2024.pdf.

The structure and content of the ME programme demonstrate strong alignment with the stated expected learning outcomes (ELOs). The distribution of disciplines across technical, software-informational, and biomedical domains reflects a deliberate and balanced approach to covering all areas relevant to modern biomedical engineering practice.

The combination of engineering disciplines with object-oriented programming (Python, C++) and medical informatics (medical information systems, prosthetics, medical data analysis) provides a multidisciplinary profile that directly responds to labour market requirements. Practical classes at partner enterprises ensure that ELOs are translated into applied competencies.

The name 'Medical Engineering' accurately reflects the programme's goals, content, and results, confirming full correspondence between the programme's title and its thematic scope. The compliance of the educational programme with the subject area of the specialty is systematically ensured through a structured set of compulsory and elective disciplines.

Integration of engineering disciplines with medical-biological and digital medicine disciplines, including medical information systems, prosthetics, and medical data analysis – a distinctive interdisciplinary feature of the ME programme.

Combination of laboratory and analytical techniques, biomedical devices, apparatus and complexes, and microprocessor techniques, providing comprehensive knowledge for clinical engineering practice.

Practical classes conducted at enterprises that develop and operate biomedical systems, ensuring direct connection between academic ELOs and professional applications.

Wide range of elective courses allowing students to tailor their learning trajectory and acquire in-depth, interdisciplinary knowledge according to personal and professional interests.

Public availability of the full programme description on the university website, ensuring transparency for candidates and all direct and indirect beneficiaries.

The curriculum is not aligned with the needs of employers and new information technologies implemented in the medical environment (artificial intelligence, telemedicine, etc.) and the learning outcomes are not fully aligned with the professional competencies required by the program. The student schedule should not exceed 8 teaching hours per day.

Recommendations: It is recommended to revise the curriculum to deepen the study of human anatomy, artificial intelligence applications, reflecting the current requirements of the labor market and the interdisciplinary nature of the field of Medical Engineering. Continue and deepen the integration of emerging digital technologies in the health field (artificial intelligence-based diagnostics, telemedicine, wearable medical devices) in the optional and core courses of the program to maintain alignment with the requirements of the rapidly evolving labor market. Reorganize activities so that they do not exceed 8 hours per working day. Strengthen the mapping between individual disciplines and specific ELOs in programme documentation to make the correspondence more explicit and verifiable during internal and external reviews. The institution is encouraged to expand the scope and volume of practical training conducted at

external partner facilities, including medical institutions, research centres, and industrial enterprises, in order to strengthen students' professional competencies in real-world environments and ensuring students have access to a diverse range of clinical engineering environments. Periodically review and update the balance between general and professional outcomes to reflect changes in the regulatory and technological landscape of biomedical engineering.

The indicator is: **partially met**.

Standard S.B.1.2. Relevance of the study program

The study program responds to the professional and personal development needs of the graduates, as well as the socio-economic ones and are organized in conditions designed to ensure the confidence of the beneficiaries.

Indicator I.P.B.1.2.1	The study program operates under the conditions of the authorization and accreditation act, respectively, aiming at achieving the educational ideal of higher education according to the law.
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The Medical Engineering programme operates under a formal accreditation framework aligned with national legislation and European quality assurance standards, notably the ESG 2015 (Standards and Guidelines for Quality Assurance in the European Higher Education Area).

Following each accreditation procedure, a structured analysis of the comments and recommendations provided by the expert group and the industry expert council is conducted. This process operates at two levels:

- University level: Comments are reviewed by relevant administrative departments, which implement appropriate measures and record progress in the university's central database.
- Departmental and faculty level: The Department of Biomedical Engineering and the Faculty of Biomedical Engineering carry out their own analysis, implement corrective and improvement measures, and document these actions annually, submitting a formal report to the university quality department.

Supporting documentation:

- University-level recommendations tracking database
- Annual monitoring report of the ME programme (Department/Faculty level): https://bmi.fbmi.kpi.ua/wp-content/uploads/2025/04/monitoring_addition-3_oppb_mi_58753.pdf.

The ME programme demonstrates full compliance with the conditions of the authorisation and accreditation framework. The two-level mechanism for processing accreditation recommendations – at university level and at departmental/faculty level – ensures that corrective actions are implemented systematically, documented, and traceable.

The approach adopted is consistent with the ESG 2015 dual goals of quality assurance: accountability and improvement. By anchoring both levels of analysis in these goals, the institution creates a coherent culture of quality that builds trust in the activities of the higher education institution. The structured tracking of recommendations in an accessible online database enhances transparency and accountability.

A particularly significant feature of this approach is its systemic character: positive improvement practices identified in the context of the ME programme are transferred to other educational programmes of the university through a comprehensive university-wide analysis framework. This multiplier effect strengthens the overall quality culture of the institution.

Two-level quality assurance mechanism (university level + department/faculty level) ensuring comprehensive coverage of all accreditation recommendations and clear accountability for their implementation.

Use of a centralised online database for tracking the implementation of accreditation recommendations at the university level, enabling real-time monitoring and transparent reporting.

Annual submission of a formal monitoring report by the Department of Biomedical Engineering and the Faculty of Biomedical Engineering to the university quality department, creating a permanent and auditable record of quality improvement actions.

Explicit alignment of quality assurance processes with the ESG 2015 framework, ensuring the programme's quality culture is coherent with European higher education standards.

Transfer of positive improvement practices between different programs contributes to a systemic and institution-wide quality enhancement culture.

Recommendations: Explore the potential for regular (annual) benchmarking the ME programme against comparable European biomedical engineering programmes within the EHEA to identify additional good practices and areas for development.

The indicator is: met.

Criterion B.2. Concordance between curriculum and qualification

Standard S.B.2.1. Consistency with the level of qualification and the competences targeted
In the process of curriculum design and development, the organizational component takes into account to ensure the level of qualification and correlation with the targeted occupations.

Indicator I.P.B.2.1.1	Learning outcomes are consistent with the level of qualification.
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✓ Presentation of the state of affairs, supported by documents and data

The programme learning outcomes (PLOs) of the ME educational programme for the first (bachelor's) level of higher education have been developed in full accordance with the requirements of the Standard for Specialty 163 "Biomedical Engineering" (bachelor's level), approved by Order of the Ministry of Education and Science of Ukraine No. 1204 of 19 November 2018. The Standard is publicly accessible at: <https://mon.gov.ua/static-objects/mon/sites/1/vyshcha/standarty/163.pdf>. Compliance is confirmed across all key dimensions:

- The programme's objectives correspond to the educational goals articulated in the Standard;
- All graduate competencies defined in the Standard – integral, general, and professional – are fully reflected in the programme;
- The normative content of bachelor's training, expressed in the Standard in terms of required knowledge and skills, is comprehensively incorporated into the programme's learning outcomes;
- The form and requirements for the final certification of graduates, as specified in the Standard, are accurately reflected in the programme structure.

In formulating the PLOs, the programme development team examined and drew upon the experience of both Ukrainian and international higher education institutions, introducing and refining a number of disciplines accordingly.

Domestic universities consulted:

- Kharkiv National University of Radioelectronics (KhNURE) – <https://www.bme.nure.ua/osvitn-y-processua>;
- National Aerospace University "Kharkiv Aviation Institute"
- Vinnytsia National Technical University (VNTU) – https://bmi.vntu.edu.ua/st_prog.php.

International universities consulted:

- Harvard University, direction "Biomedical Sciences and Engineering" – <https://www.harvard.edu/programs/biomedical-engineering>;
- Columbia University, direction "Biomedical Engineering" – <https://www.bme.columbia.edu/chemical-engineering/academics/bs>;
- Boston University, direction "Biomedical Engineering" – <https://www.bu.edu/eng/academics/explore-degree-programs/bachelor-of-science-bs-in-biomedical-engineering>;

The analysis confirms that the ME programme fully satisfies the requirements of the applicable Standard across all four dimensions of compliance: programme objectives, graduate competencies, normative learning content, and final certification requirements. This comprehensive alignment demonstrates a systematic and deliberate approach to programme design, rather than a formal checklist exercise.

Equally significant is the methodology applied to the formulation of PLOs: the programme team carried out a comparative analysis of curricula offered by leading Ukrainian universities in the biomedical engineering field, as well as internationally recognised programmes at Harvard, Columbia, and Boston Universities. This

benchmarking process informed the introduction and refinement of specific disciplines that extend the programme's scope beyond the minimum Standard requirements.

Disciplines introduced on the basis of domestic benchmarking address specialised instrumentation (biophysical converters, sensors, measuring systems), mechanical foundations of biomedical applications, and innovation methodology. Disciplines developed or refined in response to international benchmarking cover advanced areas such as biothermodynamics, biological signal theory, medical information systems, automated design, and control systems engineering. This dual-track benchmarking approach demonstrates that the programme not only meets regulatory requirements but actively pursues academic excellence and international alignment.

Examples of good practice: Regulatory compliance with full traceability: All four dimensions of conformity with the MES Standard (objectives, competencies, normative content, final certification) are explicitly verified and documented, providing clear evidence of compliance during internal and external quality reviews. Domestic benchmarking with targeted curriculum enrichment: Engagement with KhNURE, Kharkiv Aviation Institute, and VNTU resulted in the introduction of specialised disciplines (e.g., Biomedical Sensor Systems, Biomedical Mechanics, Theory of Solving Inventive Problems) that strengthen the programme's professional profile. Interdisciplinary curriculum design informed by comparative analysis: The combination of insights from both national and international programmes resulted in a coherent, multi-layered curriculum that integrates engineering, biomedical, and information technology competencies.

Recommendations: Expand the scope of international benchmarking to include universities from additional European countries, in particular those active in the European Higher Education Area (EHEA), to facilitate potential future participation in academic exchange and joint degree initiatives. Explore formal academic cooperation agreements with some of the benchmarked institutions (e.g., collaborative projects, student mobility, joint research) to move beyond curriculum borrowing towards active partnership.

The indicator is: met.

Indicator I.P.B.2.1.2	The expected learning outcomes are correlated with the competences required by the corresponding occupations, according to occupational standards and/or the European Classification of Occupations (ESCO). <i>The curriculum is designed to meet the educational requirements formulated by employers, including the acquisition of practical skills.</i> <i>The educational requirements formulated by employers have helped to define the learning outcomes specific to the curriculum.</i> <i>The declared results of the study program allow graduates to be employed on the labor market in positions corresponding to the qualification obtained. Graduates of the study program have clearly defined the perspective of employment on the labor market.</i>
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The PLOs of the ME educational programme have been developed through a systematic analysis of the relationship between learning outcomes and competencies, in which both employers and students act as customers of professional competencies within the specialty. The curriculum is aligned with the National Qualifications Framework and the Higher Education Standard for the first (bachelor's) level in Specialty 163 "Biomedical Engineering", ensuring that the knowledge and skills acquired correspond to the qualification of a bachelor in biomedical engineering.

A formal correlation between the expected PLOs and the competencies required for the profession of "Biomedical Engineer" has been established in accordance with the European Classification of Occupations (ESCO 1.2.0), with the full mapping document available at: <https://bmi.fbmi.kpi.ua/wp-content/uploads/2025/12/Correlation-of-learning-outcomes-with-competencies-by-European-Skills-ESCO-v1.2.pdf>.

Employer engagement is embedded in the programme design and delivery through multiple formal mechanisms. Employers participate directly in the development of programme elements, graduate employment processes, and public discussion of the study programme. Their proposals are recorded in departmental protocols and result in formally approved decisions, including the establishment of three certified training programmes within the current study programme: Clinical Engineering, Biomedical Information and Engineering Technologies, Engineering and Prosthetics Technologies.

Bachelor's students undertake a pre-degree internship (6 ECTS credits) at companies with which long-term cooperation agreements have been concluded, including: the National Institute of Cardiovascular Surgery named after M.M. Amosov; the E.O. Paton Institute of Electric Welding; the I.M. Frantsevich Institute of Problems of Materials Science; the National Cancer Institute; the Institute of Molecular Biology and Genetics; and the Scientific and Practical Center of Pediatric Cardiology and Cardiac Surgery.

Graduate employment is monitored annually through the Research Center for Applied Sociology "SocioPlus" and the university's Career Development Center (established by Order No. NU/237/2021), with results reported to the Methodological and Academic Councils. The Alumni Association serves as an additional communication channel with graduates, and their feedback is incorporated into programme review processes.

The ME programme demonstrates a high degree of fulfilment of Indicator I.P.B.2.1.2 across all four dimensions articulated in the criterion.

Regarding the correlation of PLOs with occupational competencies: the explicit mapping of programme outcomes against ESCO 1.2.0 competencies for the "Biomedical Engineer" profession, combined with alignment to the National Qualifications Framework and the MES Standard, provides a robust, multi-layered framework that ensures PLOs reflect actual occupational requirements at both national and European level.

Regarding employer-driven curriculum design: the engagement of employers not merely as external advisors but as active participants – contributing to programme discussion, involving students in scientific and engineering projects, round tables, internships, and career guidance events – results in a curriculum that is genuinely responsive to labour market demands. The introduction of new elective disciplines in response to employer needs further demonstrates the programme's adaptive capacity. The formal approval of three certified training programmes based on employer proposals is particularly strong evidence of this dynamic.

Regarding the definition of employer-informed learning outcomes: the documented procedures for incorporating employer and stakeholder feedback – through public discussions, departmental meetings, approval by the Scientific and Methodological Commission, and recorded protocols – confirm that educational requirements formulated by employers are systematically translated into specific PLOs rather than treated as informal input.

Regarding graduate employability: the well-defined employment prospects for graduates, supported by annual employer surveys conducted by "SocioPlus", monitoring by the Career Development Center, and engagement through the Alumni Association, provide systematic evidence that the declared PLOs translate into real employment outcomes in positions consistent with the qualification obtained.

Examples of good practice: Employer-initiated certified training programmes: The creation of three formally approved certified training programmes (Clinical Engineering; Biomedical Information and Engineering Technologies; Engineering and Prosthetics Technologies) within the study programme directly in response to employer proposals is an outstanding example of how stakeholder engagement can lead to concrete, institutionally endorsed curriculum innovation. Involvement of practicing professionals in the educational process ensures that students benefit from current industry knowledge and professional networks.

Recommendations: Strengthen the feedback loop between graduate employment monitoring (SocioPlus surveys, Career Development Center data, Alumni Association) and specific PLO or curriculum revisions by documenting explicitly which employment data influenced which programme changes in the annual self-evaluation report.

The indicator is: met.

Criterion B.3. Student-centered learning, teaching, and assessment

Standard S.B.3.1. Principles

The organizational component implements the principles of student-centered learning.

Indicator I.P.B.3.1.1	The organizational component ensures the implementation of the principles of student-centered learning within the curriculum and through the didactic strategies used in the learning and teaching activities and experiences.
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✓ Presentation of the state of affairs, supported by documents and data

The ME programme is delivered within an organisational framework that systematically prioritises student-centred learning. The prevailing pedagogical approach shifts emphasis from passive information transfer towards critical and analytical thinking, expanded student autonomy, and individual accountability. This is operationalised through a range of institutional mechanisms and digital tools. Students are afforded multiple channels for participation in the educational process and programme improvement:

- Expression of views on education quality at meetings of the Academic Council of the Faculty and the BMI Department, and via social networks: https://t.me/fbmi_kpibot;
- Involvement of student council representatives in faculty and departmental Academic Council meetings;
- Regulation of student-teacher relations through the KPI Code of Honour: <https://kpi.ua/code>;
- Construction of individual study plans enabling personalised educational trajectories;
- Access to distance learning courses: <https://bmi.fbmi.kpi.ua/teaching/remote-work/>;
- Participation in scientific, engineering, and socio-humanitarian student circles: <https://bit.ly/3qAqhc9>.

Digital learning infrastructure supporting student-centred delivery includes:

- The Sikorsky educational platform (Moodle / Google Suite for Education), hosting online lecture courses and testing: <https://bit.ly/3qzIZ3w>;
- Integration of Coursera for Campus courses into curricula, allowing students to earn credits or additional assessment points through completion of certified online courses from the Coursera catalogue.
- Student feedback is collected systematically through:
- Periodic surveys in the automated information system "Electronic Campus" <https://ecampus.kpi.ua/uk/login>;
- Thematic surveys conducted by the Research Centre for Applied Sociology "SocioPlus": https://kpi.ua/kpi_socioplus;
- Discussion of survey results at Academic Council and departmental meetings.

The programme also supports flexible learning by enabling students to: build individual educational trajectories (<https://bmi.fbmi.kpi.ua/teaching/elective-disciplines/>); attend scientific circles (<https://bmi.fbmi.kpi.ua/science/scientific-work-students/>); transfer learning outcomes acquired through non-formal education; select their own research direction (<https://bmi.fbmi.kpi.ua/science/project/>); and participate in artistic and cultural life (<https://kpi.ua/talent>).

The evidence reviewed confirms that the ME programme fulfils Indicator I.P.B.3.1.1 to a high degree. The organisational component of the programme is built around a coherent and multi-dimensional implementation of student-centred learning principles.

The shift from information transmission to critical thinking and consultative pedagogy is not merely a declared intention but is operationalised through concrete institutional structures: individual study plans, flexible learning trajectories, the integration of Coursera courses, and access to distance learning platforms collectively ensure that students can engage with content at a pace and depth suited to their individual needs and goals.

Student agency in shaping the educational environment is actively supported through formal representation in governance bodies (Academic Council, departmental meetings), structured feedback mechanisms (Electronic Campus surveys, SocioPlus research), and informal channels (social networks, scientific circles). This multi-channel approach ensures that student voices are captured systematically and that feedback is acted upon at both faculty and departmental level.

The didactic strategies in use – online lectures, testing, blended learning through Coursera, distance learning projects – reflect a deliberate diversification of teaching methods that goes beyond traditional classroom delivery. The involvement of students in seminars, competitions, industrial exhibitions, and cultural events further embeds a lifelong learning orientation within the programme's pedagogical culture. Support mechanisms for students with learning difficulties, combined with merit-based financial recognition for high achievers, demonstrate that the programme attends to the full spectrum of student needs – from academic support to motivation and reward.

Recommendations: Not the case

The indicator is: met.

Indicator I.P.B.3.1.2	The organizational component provides opportunities for students to participate in academic mobility programs, carried out with physical and/or virtual presence.
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The organisational framework governing academic mobility at Igor Sikorsky Kyiv Polytechnic Institute (KPI) is grounded in a comprehensive regulatory base at both national and institutional levels. The legal foundations for international student mobility are defined by:

- The Laws of Ukraine "On Higher Education" (Section XIII "International Cooperation") and "On Scientific and Scientific-Technical Activity";
- Cabinet of Ministers of Ukraine Resolution No. 579 of 12 August 2015 "On the Approval of the Procedure for Exercising the Right to Academic Mobility";
- KPI Order No. 7/88 of 15 May 2020 "On the Approval of the Regulations on Academic Mobility at Igor Sikorsky KPI";
- The Regulations on Academic Mobility at Igor Sikorsky KPI (https://document.kpi.ua/files/2025_HOD-936a1.pdf), developed in accordance with the Bologna Declaration of 19 June 1999 and the abovementioned legislative acts, governing mobility for students, academic, research, and administrative staff.

At the institutional level, KPI actively develops partnerships with universities worldwide, providing the organisational basis for student and staff mobility. Current partner institutions include Holon Institute of Technology (Israel), Poznan University of Technology (Poland) and others. Cultural and educational exchange is further supported by international centres operating within KPI, including the Ukrainian-Japanese Center and the Ukrainian-Chinese Center. The Department of International Cooperation oversees all international activity in compliance with the relevant Ukrainian legislation on higher education, scientific activity, and foreign economic activity.

At the departmental level, students of the Department of Biomedical Engineering have exercised their right to academic mobility through both physical and initiated mobility formats, including ERASMUS+ programmes. Documented mobility activities include:

- Student D. Voloshchak: one academic year under ERASMUS+ at Chemnitz University of Technology (Technische Universität Chemnitz), Germany (2022–2023);
- Two students: participation in the Perspektywy Women in Tech Summit, Warsaw, Poland (June 2023);
- Student M. Nichiporenko: participation in the international forum "Simulation Technologies in Health Care: Spring Forum 2025", (29–30 May 2025).

Complementing physical mobility, virtual and blended learning opportunities are available through the Sikorsky educational platform (Moodle / Google Suite for Education: <https://bit.ly/3qzIZ3w>), distance learning courses (<https://bit.ly/3DfJKCD>), and the integration of Coursera for Campus programmes into the curriculum, enabling students to engage with internationally developed content and receive academic credit upon certification.

The evidence reviewed confirms that the ME programme substantially fulfils Indicator I.P.B.3.1.2, with an established organisational infrastructure supporting both physical and virtual dimensions of academic mobility.

The regulatory framework is comprehensive and coherent: national legislation, Cabinet of Ministers resolutions, and institutional regulations collectively provide a clear legal basis for the exercise of mobility rights by students and staff alike. The alignment of KPI's internal mobility regulations with the Bologna Declaration further demonstrates the institution's commitment to operating within the European Higher Education Area framework.

The portfolio of international university partnerships creates a structural foundation for outgoing and incoming mobility. The documented mobility cases, while modest in number due to the extraordinary constraints imposed first by the COVID-19 pandemic and subsequently by the ongoing war, demonstrate that mobility activity has been maintained even under severely adverse conditions. The continuation of ERASMUS+ participation and initiated mobility during wartime is particularly significant, as it reflects both institutional resilience and individual student and staff commitment to international engagement.

The virtual mobility dimension, supported by the Sikorsky platform and Coursera integration, partially compensates for the reduction in physical mobility and ensures that students retain access to internationally oriented learning experiences regardless of external circumstances.

Examples of good practice: Comprehensive regulatory framework for mobility: The existence of a dedicated, Bologna-aligned institutional regulation on academic mobility (KPI Order No. 7/88, updated Regulations 2025), developed in coherence with national legislation, provides a transparent and legally sound basis for all mobility activities.

Recommendations: Not the case

The indicator is: met.

Standard S.B.3.2. Fairness

The organizational component ensures fair opportunities for students.

Indicator I.P.B.3.2.1	The organisational component ensures equitable opportunities for students, in line with their potential and aspirations, taking into account the diversity of learning styles and abilities.
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The organisational component of the ME programme is built around a genuine commitment to equitable educational opportunities, ensuring that every student – regardless of individual learning style, academic background, or personal circumstances – has access to meaningful and appropriately tailored pathways for academic and professional development.

Central to this commitment is the programme's emphasis on individualisation. Rather than applying a uniform pedagogical approach, the department enables students to construct personalised educational trajectories aligned with their own inclinations, goals, and pace of learning, supported by the availability of individual study plans. This flexibility extends to students who encounter academic difficulties: dedicated adaptation programmes in foundational disciplines – mathematics and physics – provide targeted support for those requiring additional preparation, while individual completion schedules are granted in justified cases, ensuring that temporary obstacles or personal circumstances do not result in academic exclusion. The diversity of learning styles is accommodated through a deliberately varied range of instructional formats. Traditional face-to-face teaching is complemented by asynchronous online learning resources hosted on the Sikorsky educational platform (Moodle / Google Suite for Education: <https://bit.ly/3qzIZ3w>), dedicated distance learning courses, and the formal integration of Coursera for Campus programmes into the curriculum. The latter allows students to independently select courses from a global catalogue, complete them at their own pace, and receive academic credit or additional assessment points upon presentation of a certificate – a provision that is particularly valuable for self-directed learners and those who benefit from schedule-flexible or technology-mediated learning. Furthermore, the institutional recognition of learning outcomes acquired through non-formal and informal education acknowledges that competency development occurs across a wide range of contexts beyond the formal classroom.

Beyond the core curriculum, the programme supports the development of each student's broader potential through a rich ecosystem of extracurricular opportunities. Students may engage with scientific and engineering circles, socio-humanitarian circles, independently selected research directions, and artistic or cultural activities. Participation in seminars, competitions, performances, and industrial exhibitions is actively encouraged as a means of fostering lifelong learning orientations and enabling students to develop competencies and interests that extend beyond their disciplinary programme.

The equitable character of the learning environment is further reinforced by institutional mechanisms for student voice and participatory governance. Student trade union and student council representatives participate in meetings of the Academic Council at both faculty and departmental levels, ensuring that the perspectives of the student body are formally represented in institutional decision-making. Students may also express views and suggestions through social networks (https://t.me/fbmi_kpibot), while periodic surveys conducted through the Electronic Campus system and the "SocioPlus" Research Centre for Applied Sociology systematically capture student feedback, with results discussed and acted upon at Academic Council and departmental meetings. Mutual respect in the student-teacher relationship is institutionally

anchored in the KPI Code of Honour (<https://kpi.ua/code>), providing a normative framework that protects the dignity and rights of all members of the educational community.

Finally, the programme recognises and rewards academic excellence through a structured scholarship system. Outstanding academic results are acknowledged in the university's scholarship calculations (<https://dnvr.kpi.ua/stupendiya/>), and students achieving at the highest level are eligible to be nominated for individual scholarships awarded by the Cabinet of Ministers of Ukraine, the Verkhovna Rada of Ukraine, and the President of Ukraine (<https://dnvr.kpi.ua/stupendiya/academic-scholarship/>). Together, these provisions – spanning academic support, flexible learning formats, extracurricular development, participatory governance, and merit recognition – constitute a coherent and multi-layered organisational response to the diversity of student potential, aspirations, and learning needs.

The evidence reviewed confirms a substantial degree of fulfilment of Indicator I.P.B.3.2.1. The programme's organisational component addresses the criterion's requirements across three interconnected dimensions: equity of access, responsiveness to diversity of learning styles and abilities, and alignment with individual student potential and aspirations.

Equity of access is ensured through the combination of flexible study plan construction, individual completion schedules for students with learning difficulties, and adaptation programmes in foundational disciplines. These mechanisms collectively prevent academic exclusion on the grounds of temporary difficulty or differential prior preparation, while maintaining the integrity of programme standards.

Responsiveness to diversity of learning styles is operationalised through the deliberate diversification of learning formats: face-to-face instruction is complemented by asynchronous online learning (Sikorsky platform), blended learning (Coursera integration), distance courses, and the formal recognition of non-formal learning outcomes. This multi-format approach acknowledges that students acquire and demonstrate competencies in different ways and at different paces, and provides institutional mechanisms to accommodate this diversity.

Alignment with individual potential and aspirations is addressed through the breadth of intellectual, creative, and professional development pathways available beyond the core curriculum: scientific circles, research direction selection, artistic and cultural participation, and involvement in competitions and industrial exhibitions. The scholarship system, including state-level individual awards, provides meaningful recognition and motivation for students achieving at the highest level, while support structures ensure that students facing difficulties are not left behind.

The participatory governance mechanisms – student representation in Academic Council meetings, the Code of Honour, and structured feedback surveys – further reinforce the equitable character of the learning environment by ensuring that students of all backgrounds and abilities have a recognised voice in shaping their educational experience.

One area warranting attention is the extent to which equity provisions specifically address students with disabilities or special educational needs beyond learning difficulties in mathematics and physics.

Examples of good practice: Formal recognition of non-formal learning outcomes: The institutional provision for transferring learning outcomes acquired outside formal education into students' academic records is a progressive and inclusive practice that acknowledges the diversity of learning pathways and validates competencies regardless of where they were acquired. Coursera integration as an equitable flexible learning tool: The incorporation of Coursera for Campus courses as formally creditable assignments – accessible asynchronously, at the student's own pace, and from any location – directly supports students who benefit from self-directed, technology-mediated, or schedule-flexible learning formats.

Recommendations: Conduct a regular equity audit of student participation in extracurricular, mobility, and research activities, disaggregating data by relevant student characteristics, to identify any systematic patterns of under-participation and develop targeted outreach or support measures accordingly.

The indicator is: met.

Criterion B.4. Accessibility and efficiency of resources and support services appropriate to learning

Standard S.B.4.1. Access to resources and services

The organizational component ensures access to resources and support services appropriate to the needs of students.

Indicator I.P.B.4.1.1	The organizational component ensures access for students, including those with special educational needs/disabilities, to resources and services designed to support the learning process, appropriate in relation to individual learning needs, the field of study, the study cycle and the form of organization of the study program. <i>The study program provides students with relevant support for the learning process (career counseling, tutoring and assistance), thus facilitating the acquisition of knowledge and skills, respectively promotion in a year of higher study.</i>
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Igor Sikorsky Kyiv Polytechnic Institute operates within a well-developed institutional framework for supporting students with special educational needs (SEN), reflecting both national legislative requirements and international norms and standards in inclusive higher education. The university's approach is grounded in the principle that equal access to quality education is not merely a legal obligation but a core element of its institutional mission.

The regulatory foundation for inclusive education at KPI is comprehensive. In accordance with the Laws of Ukraine "On Education" and "On Higher Education", as well as the "Procedure for Organizing Inclusive Education in Higher Education Institutions" and relevant subordinate legislation, the university has developed its own internal regulatory framework governing the organisation of inclusive education. Key documents include the Programme for the Development of Inclusive Education "Education without Restrictions" (<https://osvita.kpi.ua/pinobo>), the Regulations on the Organisation of Inclusive Education at Igor Sikorsky KPI (<https://osvita.kpi.ua/ppoin>). General information on accessibility conditions for students with SEN is publicly available at <https://kpi.ua/inclusion>.

At the institutional level, a dedicated Working Group on Inclusive Educational Environment and Digital Education has been established to coordinate efforts aimed at ensuring equal educational opportunities for all students. This body is responsible for overseeing the implementation of inclusive education principles across the university's educational activities. Students requiring psychological support have access to the Student Social Service of KPI, where they can receive professional advice and assistance from qualified psychologists, complementing the support provided by academic staff, doctors, and social workers.

Within the ME programme specifically, the broader university support infrastructure is made available to all enrolled students. This includes access to adaptation programmes in foundational disciplines, individual study plan construction, individual completion schedules for students with documented valid reasons, and the full range of digital learning resources – including the Sikorsky platform (Moodle / Google Suite for Education) and distance learning courses – which are particularly significant in ensuring continuity of access for students whose mobility, health, or personal circumstances may limit their ability to participate in conventional on-campus learning formats.

The evidence reviewed confirms that the ME programme, operating within the broader KPI institutional framework, demonstrates a meaningful and substantive level of fulfilment of Indicator I.P.B.4.1.1, with particular strength in the regulatory and structural dimensions of inclusive education provision.

The existence of a dedicated inclusive education programme ("Education without Restrictions"), a specific regulatory document on the organisation of inclusive education, and a formally established commission on inclusiveness and accessibility (Order No. NOD/929/24) collectively demonstrate that support for students with SEN is institutionally embedded and governed by explicit policy commitments rather than managed on an informal or ad hoc basis.

At the level of the ME programme, the combination of flexible learning formats – distance learning, individual study plans, Coursera integration, and individual completion schedules – provides a practical set of accommodations that support students with diverse learning needs and abilities, including those whose circumstances may not be formally classified as SEN but who nonetheless benefit from adapted learning conditions.

Examples of good practice: Multi-professional student support model: The Student Social Service's provision of psychological, medical, and social support alongside academic assistance reflects a holistic approach to student wellbeing that acknowledges the interconnected nature of learning difficulties, mental health, and personal circumstances – a model aligned with international best practice in student support services. Flexible completion and individualisation mechanisms: The provision of individual study plans and individual completion schedules for students with documented valid reasons offers a practical and responsive accommodation framework that enables students with SEN or learning difficulties to progress through the programme without compromising academic standards.

Recommendations: Not the case

The indicator is: met.

Criterion B.5. Learning Outcomes

Standard S.B.5.1. Definition and evaluation

The definition and evaluation of learning outcomes is carried out adequately.

Indicator I.P.B.5.1.1	Learning outcomes are adequately described and support the understanding of student and teacher expectations regarding the content of the subjects in the curriculum. <i>The results of the study program have been established according to what students should know (the correspondence between the content of the educational process and the learning outcomes specified in the diploma supplement), understand and/or be able to demonstrate after the completion of the learning process. They are in full agreement with EAFSG standards.</i>
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The "Medical Engineering" programme operates a well-structured and transparent system for communicating learning outcomes, assessment principles, and teaching methods to all participants in the educational process. The primary instrument through which this information is conveyed is the syllabus, which is developed for each academic discipline and credit module and is freely accessible to students, academic staff, and other stakeholders through two complementary channels: the Automated Information System "Electronic Campus" (<https://ecampus.kpi.ua>) and the Department's public website (<https://bmi.fbmi.kpi.ua/teaching/syllabuses/>).

The Electronic Campus serves as the university's central digital infrastructure for educational and methodological resources. Each participant in the educational process – students and teaching staff alike – holds a personal account within the system, through which students access all educational and methodological materials in electronic format. During periods of distance learning, academic staff additionally duplicate course content, syllabi, and educational materials in Google Classroom and/or Moodle (<https://bit.ly/3wKb5dy>), ensuring uninterrupted access to learning resources regardless of the mode of delivery. Session schedules and certification week information are provided through the web resources of the Department for the Organisation of the Educational Process (<http://rozklad.kpi.ua>).

The structure and content of syllabi are governed by a university-wide regulation approved by the Scientific Council, which establishes a unified rating-based assessment system as the mandatory methodological basis for all disciplines and credit modules. This system requires that each syllabus contain a clearly defined rating assessment framework covering all types of classroom and independent learning activities specified in the curriculum. At the first lesson of each discipline, the lecturer presents students with the course content, its objectives, and the rating assessment system in full, providing answers to questions throughout the semester and conducting a dedicated review of the assessment system with students prior to the examination session. All student learning results are registered in the Electronic Campus, to which students have permanent access, enabling ongoing monitoring of their academic progress. Upon completion of studies, results are recorded in the academic transcript and certified through the diploma supplement.

The assessment methods and criteria applied within the programme are tailored to the specific content and professional orientation of each discipline. Examination tasks designed combine theoretical questions, methodological problems, and individual practical tasks, sometimes including verification on laboratory

equipment or layout boards. The programme's pedagogical approach integrates classical deductive methods with project-based learning, encompassing individual module design in laboratory classes, an interdisciplinary course project, and individual design projects in pre-diploma practice and the degree project.

The programme workload is structured to allow students sufficient time for individual work and independent learning, as reflected in the curriculum (<https://bme.fbmi.kpi.ua/wp-content/uploads/2025/12/NP-Bach-2025-Curriculum.pdf>) and syllabi (<https://bme.fbmi.kpi.ua/syllabus-and-rating-system/>), where topics designated for independent study are explicitly correlated with the learning content. In addition to compulsory modules, a substantial range of elective courses enables students to construct personalised learning paths. Non-formal education opportunities are also available (<https://bmi.fbmi.kpi.ua/educational-areas/non-formal-education>), including courses on the Coursera platform that may be credited as blended or additional learning and converted into assessment points within formal disciplines.

The examination procedure is regulated by the university's provisions on semester control: at least two days are allocated between consecutive examinations, one credit is assigned for each examination in the curriculum, and a compulsory pre-examination consultation is conducted by the lecturer. In cases of disagreement with an assessment outcome, students may invoke a formal grade appeal procedure. Appeals are considered by a dedicated commission established at faculty level – and at university level if required – comprising subject specialists, the head of department, and students (with their consent), with a maximum membership of five persons. A student may submit one appeal per credit module grade. Provisions for re-examinations and postponed examinations in cases of valid documented reasons are regulated by the assessment system regulations and the distance learning provisions, with individual schedules granted accordingly. Academic integrity violations are governed by dedicated university regulations and procedures. Programme completion requires the preparation and public defence of a diploma project.

The evidence reviewed confirms a high degree of fulfilment of Indicator I.P.B.5.1.1. The programme demonstrates a coherent and institutionally embedded approach to the description, communication, and assessment of learning outcomes that supports clear mutual understanding between students and teachers regarding expectations, content, and evaluation criteria.

The dual-channel availability of syllabi – through the Electronic Campus and the departmental website – ensures that learning outcomes and assessment criteria are not only formally documented but genuinely accessible to all stakeholders at any point during the study cycle. The requirement for lecturers to present the rating system at the first lesson, revisit it before the examination session, and remain available for consultation throughout the semester transforms the syllabus from a static administrative document into an active instrument of pedagogical communication. This practice directly supports the indicator's requirement that learning outcomes "adequately describe and support the understanding of student and teacher expectations."

The alignment between programme learning outcomes and the diploma supplement – through the systematic registration of all results in the Electronic Campus and their formal certification at graduation – ensures that what students are expected to know, understand, and demonstrate is consistently reflected in the qualification they receive. This traceability between learning process content and diploma supplement entries is a core requirement of the EAFSG standards referenced in the indicator, and the evidence suggests it is operationally implemented rather than merely declared.

The individualisation of assessment tasks, the integration of creative and project-based learning components collectively indicate that the assessment system goes beyond measuring minimum competency thresholds. Instead, it actively incentivises and rewards the depth of understanding and creative application that the programme's learning outcomes aim to develop in future biomedical engineers. The formal grade appeal procedure – with defined timelines, a structured commission composition, and a documented process – provides an important procedural safeguard that reinforces the fairness and transparency of the assessment system. The availability of re-examination and individual scheduling provisions for students with valid reasons further ensures that the assessment framework is equitable and responsive to individual circumstances without compromising academic integrity.

One dimension that may warrant further development is the explicit articulation, within each syllabus, of how individual assessment components map onto specific programme-level learning outcomes.

Recommendations: Not the case

The indicator is: met.

Indicator I.P.B.5.1.2	The verification of the achievement of the learning results is carried out through evaluation exams along the way and through graduation exams. <i>The development of competences by students (by acquiring the knowledge and skills provided in the subject sheets) is adequately assessed, on the 8 learning areas defined by the EAFSG standards.</i> <i>The theme for the elaboration of the graduation works (diploma projects) is established in collaboration with the economic environment.</i>
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The ME programme employs a comprehensive and multi-layered system for verifying the achievement of learning outcomes, operating at both the ongoing (in-course) and final (graduation) assessment levels. This system is fully documented in the syllabi of all academic disciplines and credit modules, each of which contains a detailed rating-based evaluation framework covering all types of academic work prescribed by the curriculum.

Within individual disciplines, assessment is distributed across the full range of learning activities, with each component assigned a defined share of the total 100-point rating scale. A representative distribution might include up to 50 points for the final examination, up to 36 points for laboratory work, up to 15 points for calculation assignments, up to 5 points for a control test, and up to 4 points for a thematic report. The minimum passing threshold is set at 60%. For disciplines incorporating laboratory and project activities, crediting criteria encompass preparation, execution quality, creativity of approach, and defence of results – ensuring that assessment captures not only factual knowledge but also practical competency and analytical thinking. The adequacy and effectiveness of these evaluation methods are confirmed through session results, the outcomes of diploma project defences, the quality and thematic scope of diploma projects, and the ongoing monitoring data systematically registered in the Electronic Campus.

The correspondence between the subjects included in the curriculum and the eight learning areas defined by the EAFSG standards is documented in a dedicated Annex 8 to IER confirming that the development of competencies across all required learning areas is adequately assessed through the programme's subject content and evaluation instruments.

At the graduation level, programme completion is certified through the public defence of a diploma project – rather than a written examination – which constitutes an integrative assessment of the full spectrum of competencies acquired by the student throughout the programme. The topic of each diploma project is formulated in close consultation with employers and industrial partners of the department, ensuring that graduation work addresses real professional challenges in the biomedical engineering field. The assessment of the diploma project is multidimensional, drawing on the project itself, an external reviewer's assessment, feedback from the practice supervisor at the enterprise, and evaluation by the university-based academic supervisor. The pre-diploma practice diary also incorporates a formal assessment and conclusions from the enterprise-based practice supervisor, providing an additional industry-validated perspective on the student's practical competency development.

Diploma project defences are conducted in compliance with the "Regulations on the Final Certification of KPI Students" and the "Regulations on the Examination Commission" (<https://bmi.fbmi.kpi.ua/teaching/diplom-design/>). Under the conditions of martial law, defences are carried out remotely in synchronous mode in accordance with the approved academic process schedule and the regulations for organising remote qualification work defences and certification examinations, with reliable authentication of participants ensured throughout. To maintain the public character of defences, all interested parties may attend upon prior registration, with registration details published on the department's website no later than one week before the scheduled defence date. Academic integrity is protected through mandatory plagiarism checking of the diploma project prior to admission to defence, alongside the formal external review process.

The evidence reviewed confirms that the ME programme fulfils Indicator I.P.B.5.1.2 to a high degree across all three dimensions articulated in the criterion: ongoing competency verification, EAFSG-aligned assessment, and industry-collaborative graduation work.

Regarding ongoing assessment, the rating-based evaluation system – distributed across diverse types of academic work and anchored in detailed syllabus-level documentation – provides a continuous and multi-faceted mechanism for verifying student progress throughout the study cycle. The granular distribution of assessment points across laboratory work, calculation assignments, control tests, thematic reports, and final examinations ensures comprehensive coverage of both theoretical knowledge and practical skill dimensions. The minimum passing threshold of 60% establishes a clear and consistent standard for competency attainment across all disciplines. The integration of creativity and result defence as explicit assessment criteria in laboratory and project disciplines is particularly significant, as it ensures that the evaluation system captures higher-order competencies – problem-solving, independent judgement, and communication of results – that are essential for professional biomedical engineering practice.

Regarding EAFSG alignment, a formal mapping document presented in Annex 8 correlating curriculum subjects with the eight EAFSG learning areas provides transparent, structured evidence that the programme's assessment system addresses all required competency domains. This documentation demonstrates a systematic rather than incidental approach to EAFSG compliance and provides a reliable reference point for both internal quality review and external accreditation purposes.

Regarding graduation assessment and industry collaboration, the choice of public diploma project defence as the graduation certification format – rather than a written examination – represents a pedagogically sound and professionally relevant approach to integrative competency verification. The involvement of multiple assessors (academic supervisor, external reviewer, enterprise practice supervisor) and the industry-informed topic selection process ensure that the final assessment is both comprehensive and grounded in real professional contexts. The maintenance of public, remote defences under martial law conditions demonstrates institutional resilience and an unwavering commitment to assessment transparency even under extraordinary circumstances.

Recommendations: Not the case

The indicator is: met.

Criterion B.6. Insertion and retention on the labor market of graduates according to the level of qualification obtained

Standard S.B.6.1. Insertion

The organizational component supports the insertion of graduates on the labor market.

Indicator I.P.B.6.1.1	The organisational component carries out systematic activities to ensure a smooth transition of graduates from apprenticeship to the labour market. <i>The higher education institution conducts periodic consultations with representatives of the academic environment, including students, of the socio-economic and cultural-artistic environment and of the labor market, regarding the objectives and declared results of the study program. These consultations are carried out in an organised setting and are documented.</i>
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The ME programme operates a systematic and well-documented framework for facilitating the transition of graduates into the labour market and for maintaining ongoing dialogue with representatives of the professional, academic, and socio-economic environment regarding the programme's objectives and declared learning outcomes.

Graduate employment monitoring is conducted at both university and departmental levels through institutionalised mechanisms. The Educational and Scientific Centre for Applied Sociology "SocioPlus" conducts annual surveys of graduates and employers to assess satisfaction with acquired competencies and to track career trajectories. The university's Career Development Department additionally monitors graduate employment and produces annual detailed reports on the demand for graduates across

educational programmes. The results of all these monitoring activities are discussed at meetings of the Academic and Methodological Councils and are used to inform programme development decisions.

Graduate employment outcomes for the ME programme are strong and well-documented. At least 82% of graduates from the last two cohorts continued their studies at the master's level, most of them doing so specifically within the Medical Engineering master's programme. The prospects for professional growth in the field are confirmed by documented career development data, and Igor Sikorsky KPI has ranked first among Ukrainian universities in employer rankings for five consecutive years.

Stakeholder consultation is embedded in the programme's annual governance cycle through a structured and documented engagement framework. The department maintains a semester plan for holding seminars, meetings, and consultations with stakeholders, with formal consultations with partner institutions scheduled twice per year – following diploma defences and at the midpoint of the academic year. Employer engagement also takes place through a broader range of organised events: the annual Career Fair, bachelor's thesis defences, student internships, and meetings with project group members. All consultations are formally documented in meeting protocols and letters from partner institutions.

The outcomes of these consultations are directly translated into programme development actions. Based on employer recommendations incorporated into the 2024 curriculum revision, the number of classroom hours for practical and laboratory classes was increased in several educational components: "Quantitative Physiology" (36 practical and 18 laboratory hours added), "Mechanics and Biomechanics" (new component introduced, with 54 practical hours), and "Biophysics" (44 practical hours added). Discipline content related to the modelling and design of medical equipment was reviewed and updated in line with current market requirements. Disciplines related to prosthetics were added to the curriculum, and the possibility of introducing a biomedical mechanics educational component was formally considered. These changes are reflected in the structural and logical training scheme implemented in the curriculum and specified in the syllabi of academic disciplines (<https://bmi.fbmi.kpi.ua/teaching/syllabuses/>).

Employer engagement has further resulted in the formal establishment, through KPI Orders, of three certified training programmes within the ME programme. Employer proposals and decisions related to programme improvement are recorded in departmental protocols. The quality of graduate preparation and the relevance of the programme to labour market needs are confirmed by feedback from partner organisations including the National Children's Specialised Hospital Okhmatdyt, the Scientific and Practical Medical Centre of Paediatric Cardiology and Cardiac Surgery, LLC "Biopharma Plasma", the State Institution "Institute of Nuclear Medicine and Radiation Diagnostics" of the National Academy of Medical Sciences.

The evidence reviewed confirms a high degree of fulfilment of Indicator I.P.B.6.1.1 across both dimensions of the criterion: systematic graduate-to-labour-market transition support, and organised, documented periodic consultation with the academic, socio-economic, and professional environment.

Regarding graduate transition support, the combination of annual SocioPlus graduate and employer surveys, university-level career monitoring, semester-level student feedback, and direct engagement at Career Fairs and internship events constitutes a genuinely systematic and multi-channel approach to tracking and facilitating graduate employment outcomes. The documented employment data – employment within six months for non-continuing graduates, and an 82% master's continuation rate – provides concrete quantitative evidence of effective transition support.

Regarding stakeholder consultation, the department's structured engagement calendar – with twice-yearly formal consultations, a semester plan for stakeholder events, and participation in Career Fairs, thesis defences, and internship activities – demonstrates that consultation with the economic and professional environment is institutionally organised rather than episodic or informal. The systematic documentation of consultation outcomes in formal protocols, and the direct traceability between documented employer recommendations and specific curriculum changes introduced in the 2024 revision, provides strong evidence that consultations are not merely performative but genuinely inform programme development decisions. The creation of three formally approved certified training programmes on the basis of employer proposals is particularly compelling evidence of the depth and impact of stakeholder engagement.

The breadth of the partner network – spanning national research institutions, clinical centres, major pharmaceutical and medical technology companies, and long-term strategic partners – reflects a

programme that is embedded in and accountable to a diverse professional ecosystem, rather than dependent on a narrow range of stakeholder relationships.

Examples of good practice: Structured twice-yearly stakeholder consultation calendar: The department's formalised schedule of consultations with partner institutions – conducted twice per year at defined points in the academic cycle and documented through formal protocols – represents a model of organised, predictable, and traceable stakeholder engagement that goes well beyond ad hoc or reactive consultation practices.

Recommendations: Not the case

The indicator is: met.

and equivalence of studies, as well as the certification of results

Standard S.B.7.1. Admission

The admission procedures and principles ensure access to higher education.

Indicator I.P.B.7.1.1	The organizational component applies the procedures regarding admission.
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Admission to the ME educational programme is governed by a clearly defined and publicly available regulatory framework. The procedures are set out in the "Rules for Admission to Igor Sikorsky Kyiv Polytechnic Institute", which are developed, approved, and published in accordance with the established legislative procedure and are accessible to all prospective applicants at: https://drive.google.com/file/d/1SNitCNrs_g_2C2basVAZIGDpNrUCIrvk/view.

Admission to the programme is open to persons holding a complete secondary education certificate, in accordance with the requirements applicable to the first (bachelor's) level of higher education (<https://bit.ly/3opyhdu>). The competitive selection for Specialty G22 Biomedical Engineering is based on the results of external independent assessment (EIA) in the following subjects: Ukrainian language, mathematics, history of Ukraine, and one subject from a defined group of elective options comprising biology, foreign language, chemistry, physics, geography, or Ukrainian literature. The weighting coefficients assigned to each competitive subject reflect the professional orientation of the programme: mathematics and Ukrainian language are each weighted at 0.35, biology, chemistry, and physics at 0.5, history of Ukraine, foreign language, and geography at 0.3, and Ukrainian literature at 0.25. Applicants may independently choose which foreign language EIA certificate to submit, providing an element of flexibility in the competitive selection process.

The minimum competitive score required for participation in the competitive selection or for enrolment under an established quota is set at 117.7 points. The approximate passing competitive score for state-funded places in Specialty 163 "Biomedical Engineering" based on the results of the 2025 admission campaign was 153.1 points, indicating a meaningful level of academic selectivity in the programme's intake. The evidence reviewed confirms that the ME programme fulfils Indicator I.P.B.7.1.1 fully, demonstrating a transparent, consistently applied, and publicly documented admission procedure that is aligned with national legislative requirements and the academic profile of the programme.

The existence of formally approved and publicly accessible admission rules ensures that all prospective applicants have equal and unrestricted access to information about admission requirements, competitive subject weightings, and minimum score thresholds. This transparency is a fundamental condition for equitable and procedurally sound admission, and the public availability of the rules through the university's official channels confirms that this condition is met.

The structure of the competitive subject list reflects a considered approach to aligning admission requirements with the programme's disciplinary profile. The elevated weighting assigned to mathematics (0.35) and, particularly, to natural science subjects – biology, chemistry, and physics (0.5) – acknowledges that these competencies are foundational for success in biomedical engineering study, and that applicants with stronger preparation in these areas are better positioned to achieve the programme's learning outcomes. The inclusion of history of Ukraine as a compulsory competitive subject is consistent with national admission policy requirements. The option to substitute certain elective subjects – including

biology, chemistry, physics, foreign language, geography, and Ukrainian literature – provides applicants with a degree of flexibility while preserving the academic rigour of the selection process.

The gap between the minimum competitive threshold (117.7 points) and the actual passing score for state-funded places (153.1 points in 2025) is indicative of genuine competitive demand for the programme, suggesting that the admitted cohort enters with a meaningfully higher level of academic preparation than the minimum required. This provides a positive foundation for the achievement of the programme's learning outcomes.

Full public transparency of admission rules: The publication of comprehensive admission rules – including subject lists, weighting coefficients, minimum thresholds, and enrolment conditions – through official and publicly accessible channels ensures that all prospective applicants, regardless of their background or location, have equal access to the information needed to participate in the competitive selection process.

Professionally oriented subject weighting system: The assignment of the highest competitive weighting (0.5) to natural science subjects – biology, chemistry, and physics – directly reflects the scientific and technical demands of the biomedical engineering programme, ensuring that the admission process selects for candidates whose prior academic preparation is best aligned with the programme's learning objectives.

Flexible elective subject options within a structured framework: The availability of multiple elective subject options for the third competitive subject – spanning natural sciences, foreign language, geography, and Ukrainian literature – broadens the pool of eligible applicants without compromising the academic selectivity of the process, accommodating diverse secondary education pathways while maintaining consistent admission standards.

Demonstrated competitive demand: The substantial margin between the minimum qualifying score (117.7 points) and the actual 2025 state-funded passing score (153.1 points) provides evidence of genuine applicant interest in and competition for places on the ME programme, reflecting positively on the programme's reputation and perceived quality among prospective students.

Recommendations: Not the case

The indicator is: met.

Indicator I.P.B.7.1.2	Admission to university study programs is carried out in compliance with the principles of equity and equal opportunities, as well as with the establishment of support measures to ensure the access of vulnerable groups, in situations of social and educational risk, including candidates with special educational needs and/or disabilities.
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Admission to educational programmes at Igor Sikorsky Kyiv Polytechnic Institute, including the "Medical Engineering" programme, is conducted in strict compliance with the principles of equity and equal opportunities, as established by national legislation (<https://zakon.rada.gov.ua/laws/show/z0312-25#n14>). The university's admission framework incorporates a range of targeted support measures designed to ensure access for applicants belonging to vulnerable groups or those in situations of social and educational risk.

For applicants who belong to categories entitled to special admission conditions or study privileges, the university provides a clearly defined procedure: applicants submit the originals and copies of relevant supporting documents to the admissions committee, in accordance with the published list of preferential categories and conditions. This procedural clarity ensures that eligible applicants can exercise their rights without ambiguity or administrative barrier.

In response to the ongoing war in Ukraine, the university has established two dedicated Educational Centres – "Donbas-Ukraine" and "Crimea-Ukraine" – to support applicants whose access to standard admission pathways has been disrupted by armed conflict and occupation. These centres serve applicants who are registered and residing in the temporarily occupied territories of Donetsk, Luhansk, Kharkiv, Kherson, and Zaporizhia regions, as well as the Autonomous Republic of Crimea and the city of Sevastopol. Such applicants are entitled to enrol within Quota-2, which reserves up to 10% of the maximum state-funded places for this category, for the purpose of obtaining a bachelor's degree based on complete general secondary education or National Qualifications Framework Level 5 (NQF5) qualifications (<https://development.pk.kpi.ua/donbass-crimea/>).

A further targeted admission pathway is available for veterans of military service and combatants. This category of applicants has the right to participate in competitive selection within Quota-1, which reserves up to 10% of the maximum state-funded places – but not fewer than one place – for the relevant competitive proposals. In addition, veterans and combatants are entitled to substitute the standard National Multi-Subject Test (NMT) with a university-administered interview, providing a meaningful accommodation for applicants whose military service may have interrupted their academic preparation or affected their capacity to participate in standard standardised testing (<https://pk.kpi.ua/official-documents/vstup-dlia-veteraniv/>).

The evidence reviewed confirms that the ME programme's admission framework fulfils Indicator I.P.B.7.1.2 to a substantial degree, demonstrating a coherent and institutionally embedded commitment to equitable access that goes beyond formal compliance with legislative requirements.

The university's approach to equity in admission is characterised by its responsiveness to the specific circumstances of identified vulnerable groups rather than reliance on a single generic accommodation mechanism. The co-existence of multiple targeted pathways – preferential category procedures, wartime educational centres with Quota-2 provisions, and veteran-specific Quota-1 and interview substitution arrangements – reflects a nuanced understanding of the diverse forms of social and educational disadvantage that may affect applicants' ability to compete on standard terms.

The establishment of the "Donbas-Ukraine" and "Crimea-Ukraine" Educational Centres is a particularly significant institutional response to the extraordinary social and educational risks created by the ongoing armed conflict. By creating dedicated organisational structures with specific quota provisions for applicants from occupied and conflict-affected territories, the university demonstrates active institutional agency in addressing barriers to higher education access that are entirely beyond the control of affected individuals. This measure directly serves the indicator's requirement to support applicants in situations of social and educational risk.

The provision for veterans and combatants to substitute the NMT with a university interview is similarly significant: it acknowledges that military service may create genuine and legitimate barriers to participation in standardised testing without implying any reduction in the academic standards applied to the selection process itself. The retention of competitive selection within a defined quota preserves the integrity of the admission system while ensuring that those who have served the country are not systematically disadvantaged in accessing higher education.

Examples of good practice: Dedicated wartime educational access infrastructure: The establishment of the "Donbas-Ukraine" and "Crimea-Ukraine" Educational Centres, with associated Quota-2 provisions specifically for applicants from occupied and conflict-affected territories, represents an institutionally innovative and socially responsive measure that directly addresses one of the most acute forms of educational risk arising from the ongoing war, ensuring that geographical and political barriers do not translate into permanent exclusion from higher education.

Recommendations: Not the case

The indicator is: met.

Standard S.B.7.2. Students' academic path

The organizational component carries out actions in support of the students' academic path.

Indicator I.P.B.7.2.1	The organizational component applies the regulations on the professional activity of students.
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The organisational component of the "Medical Engineering" programme operates within a comprehensive and publicly accessible regulatory framework governing all aspects of student professional activity throughout the study cycle. The full set of applicable regulations is available through the university's official educational documentation portal (<https://osvita.kpi.ua/docs>) and encompasses the following instruments:

- Regulations on the Organisation of the Educational Process at Igor Sikorsky KPI
- Regulations on the Individual Learning Plan of a Higher Education Applicant
- Regulations on Academic Mobility at Igor Sikorsky KPI

- Regulations on the System for Evaluating Learning Outcomes at Igor Sikorsky KPI
- Regulations on Appeals at Igor Sikorsky KPI
- Regulations on the Recognition of Learning Outcomes Acquired in Non-Formal and Informal Education at Igor Sikorsky KPI
- Regulations on the Recognition of Formal Education Results at Igor Sikorsky KPI
- Regulations on Resolving Conflict Situations at Igor Sikorsky KPI
- Regulations on Distance Learning at Igor Sikorsky KPI
- Regulations on the Examination Commission and Certification of Higher Education Applicants
- Regulations on the Organisation of Inclusive Education at Igor Sikorsky KPI
- Regulations on Assistance in the Employment of Students and Graduates

At the commencement of each academic year, the university enters into a formal study contract with each student enrolled in the bachelor's programme on a fee-paying basis. This contract is concluded in accordance with the institutional regulations governing the organisation and conduct of educational programmes and in full compliance with applicable national legislation. The study contract defines the mutual rights and obligations of both parties – the university and the student – and remains unchanged for the duration of the academic year, providing a stable and legally grounded foundation for the student's professional activity within the programme.

The recognition of learning outcomes acquired through non-formal and informal education is governed by a dedicated regulation (<https://bit.ly/30uZZ0n>), approved by the Academic Council (Order No. HOH/157/2023 of 9 May 2023) in alignment with ESG clause 1.4. This regulation establishes a structured validation process applicable to both complete disciplines and their individual components. Where a syllabus already contains a lecturer's recommendation regarding a specific online course – for example, on the Coursera or Prometheus platforms – no additional validation is required, as syllabus inclusion constitutes prior institutional endorsement. The Department of Biomedical Engineering actively implements these provisions by integrating Coursera for Campus courses into its curricula, enabling students to earn academic credits or additional assessment points upon presentation of a completion certificate.

The department further supports diverse learning formats through its distance learning project (<https://bit.ly/2YKOTDD>), with online courses and testing hosted on the Sikorsky educational platform – operating on Moodle and Google Suite for Education (<https://bit.ly/3qzLZ3w>) – ensuring that the regulatory provisions for distance learning are operationally implemented and accessible to all students.

The evidence reviewed confirms full fulfilment of Indicator I.P.B.7.2.1. The regulatory framework governing student professional activity at Igor Sikorsky KPI is comprehensive in scope, publicly accessible, and demonstrably applied at both university and departmental levels within the ME programme.

The breadth of the regulatory framework is particularly noteworthy: the twelve regulations identified collectively cover the full lifecycle of student professional activity, from the organisation of the educational process and individual learning plan construction, through assessment, appeals, conflict resolution, and academic mobility, to graduation certification and post-graduation employment support. This completeness ensures that there are no significant aspects of student professional activity that fall outside a defined regulatory framework, reducing the risk of inconsistent or arbitrary application of procedures.

The study contract concluded at the beginning of each academic year with fee-paying bachelor's students constitutes an important complementary instrument within this framework. By formally establishing the mutual rights and obligations of the university and the student at the outset of each academic year – and guaranteeing the stability of these terms for its duration – the contract provides a transparent and legally grounded basis for the student-institution relationship that reinforces the regulatory provisions governing student professional activity more broadly.

The Regulation on Recognition of Non-Formal and Informal Learning Outcomes warrants specific attention as an example of regulatory alignment with European quality assurance standards: its grounding in ESG clause 1.4 demonstrates that the university's approach extends beyond purely national legislative compliance. The simplified recognition pathway for syllabus-recommended courses – which exempts pre-endorsed content from additional validation – is a pragmatic and student-centred procedural design that reduces administrative burden while maintaining quality assurance integrity. Its practical operationalisation

through Coursera integration at the departmental level confirms that regulatory provisions are actively applied in teaching practice rather than remaining purely nominal.

The distance learning infrastructure – Moodle and Google Suite for Education on the Sikorsky platform – further demonstrates the operational application of the distance learning regulation, ensuring that regulatory provisions translate into accessible and functional learning environments for students regardless of their physical location or circumstances.

Recommendations: Not the case

The indicator is: met.

Criterion B.8. Internationalization process

Standard S.B.8.1. Internationalization	
Increasing the quality of education and research through internationalization actions.	
Indicator I.P.B.8.1.1	The organizational component carries out international cooperation actions through which the mobility of the members of its community and the collaboration in academic and research activity are supported.

International cooperation at Igor Sikorsky KPI is pursued as a strategic institutional priority, aimed at integrating into the global academic community, strengthening positions in world university rankings, and attracting international students and partners. The university's international activity is governed by a comprehensive regulatory framework.

At the university level, KPI maintains active partnerships with institutions across Europe and beyond, including Carinthia University of Applied Sciences (Austria), the Polytechnic University of Valencia (Spain), the University of Luxembourg, the University of Lisbon, Warsaw University of Technology, and others. International cultural and educational exchange is further facilitated through dedicated centres operating within KPI, including the Ukrainian-Japanese Center and the Ukrainian-Chinese Center. The university's Department of International Cooperation oversees all international activity in accordance with the applicable legislative framework. At the departmental level, the Department of Biomedical Engineering has developed its own portfolio of international cooperation activities spanning student and staff mobility, formal inter-institutional agreements, and participation in international academic and research events. Regarding student mobility, students of the Department of Biomedical Engineering have the opportunity to participate in the ERASMUS+ academic mobility programme (<https://erasmusplus.org.ua/>), enabling them to study or undertake internships at leading universities across Europe and beyond.

Regarding staff mobility, Senior Lecturer H.R. Ovcharenko completed an ERASMUS+ internship at Leibniz University Hannover (2025), contributing to the department's international academic profile and enriching teaching practice through direct engagement with a leading European research university. Regarding formal inter-institutional agreements, the department has concluded cooperation agreements with several international partners:

A cooperation agreement with Holon Institute of Technology (Israel), supporting the exchange of experience and scientific achievements in biomedical engineering;

A cooperation agreement with Poznań University of Technology (Poland), supporting the exchange of experience and scientific achievements in the field of physiotherapy.

Regarding incoming international students, the department has been providing education to international students since 2017, with 48 international students having completed bachelor's-level studies (most recent graduation in 2024) and 8 international students admitted to the master's programme in 2023, of whom 4 are currently enrolled. Regarding participation in international academic and research events, the Department of Biomedical Engineering participates annually in the international practical conference "Current State and Prospects of Biomedical Engineering", held within the framework of the International Medical Congress "Implementation of Modern Achievements of Medical Science into Healthcare Practice in Ukraine" (<http://www.lmt.kiev.ua/x-yuvileyniy-mizhnarodniy-medichniy-forum-innovaciyi-v-medicini-zdorovya-naciyi>), providing a regular platform for the dissemination of research outcomes and the development of international academic networks.

The evidence reviewed confirms a substantial and multi-dimensional fulfilment of Indicator I.P.B.8.1.1. The international cooperation activities of the Department of Biomedical Engineering, operating within the broader KPI international framework, address all key components of the indicator: outgoing and incoming student mobility, staff mobility, formal inter-institutional academic and research collaboration, and active participation in international scientific events.

The department's ERASMUS+ participation record – encompassing multiple outgoing student mobility episodes at Polish and German universities, a staff internship at a leading German research university, and continued engagement despite the extraordinary constraints imposed by the pandemic and the ongoing war – demonstrates genuine institutional commitment to mobility as a sustained strategic activity rather than an occasional occurrence. The maintenance of mobility under wartime conditions is particularly significant and reflects both institutional resilience and the personal commitment of students and staff to international academic engagement.

The portfolio of formal cooperation agreements – with Holon Institute of Technology (Israel) and Poznań University of Technology (Poland), in addition to the broader university-level partnerships – provides the structural foundation for sustained bilateral academic and research collaboration in areas directly relevant to the programme's disciplinary focus. These agreements move beyond episodic engagement towards longer-term partnerships that can support collaborative research, joint supervision, and reciprocal mobility over time.

The department's long-standing experience in hosting international students – across both bachelor's and master's levels since 2017 – demonstrates a reciprocal internationalisation culture that enriches the learning environment for domestic students while simultaneously extending the department's international reach and reputation. The annual participation in the International Medical Congress further embeds the department in a broader international research community, providing regular opportunities for the presentation and exchange of scientific achievements in biomedical engineering.

One area for potential development is the relatively limited documented engagement in formal international research collaboration projects – such as EU-funded research consortia, joint publications with international partners, or co-supervised doctoral research – which would complement the existing mobility and cooperation agreement activities and strengthen the research dimension of international engagement referenced in the indicator.

Sustained ERASMUS+ mobility under wartime conditions: The continuation of student and staff ERASMUS+ participation throughout the period of the ongoing war – including a full academic year abroad, multiple semester-length study periods, and a staff internship completed in 2025 – demonstrates exceptional institutional and individual commitment to international mobility that persists under extraordinarily adverse external circumstances.

Bilateral cooperation agreements in programme-relevant disciplinary areas: The formal agreements with Holon Institute of Technology in biomedical engineering and Poznań University of Technology in physiotherapy directly support academic and research collaboration in areas central to the ME programme's disciplinary profile, ensuring that international partnerships are substantively aligned with the programme's educational and scientific objectives.

Long-term incoming international student engagement: The sustained provision of education to international students since 2017 – at both bachelor's and master's levels, with 48 bachelor's and 8 master's international students over this period – reflects a genuinely internationalised departmental culture that benefits the entire student community through cross-cultural exchange within the learning environment.

Annual participation in the International Medical Congress: The department's regular presence at the international practical conference on biomedical engineering, held within the framework of the International Medical Congress, provides a consistent and institutionally embedded platform for international scientific exchange, research dissemination, and the development of professional networks across the biomedical engineering community.

University-level international infrastructure supporting departmental activity: The existence of a comprehensive university-level international cooperation framework – including the Regulations on Academic Mobility, partnerships with universities across multiple European countries, and dedicated

international centres – provides the departmental international activities with strong institutional support and a broad platform for further development.

Recommendations: It is recommended that the department develop a structured academic mobility recovery and expansion plan oriented towards the post-war period, encompassing: proactive outreach to existing ERASMUS+ and bilateral partner universities to reaffirm cooperation commitments and identify new joint activity opportunities; a systematic mapping of potential new partnership institutions in countries with strong biomedical engineering profiles; and the establishment of dedicated informational, financial, and administrative support mechanisms for students and staff wishing to undertake outgoing mobility placements.

The indicator is: met.

Criterion B.9. Results of scientific research

Standard S.B.9.1. Scientific research in the education process

Scientific research activities support students' acquisition of learning outcomes.

Indicator	Learning based on scientific investigation and research results support and are capitalized in the acquisition of the learning outcomes targeted by the study program.
I.P.B.9.1.1	

The Department of Biomedical Engineering maintains an active research culture directly supporting the "Medical Engineering" programme's educational process. The department's current research portfolio (2024) encompasses four active initiatives closely aligned with the programme's core disciplinary areas:

- No. 0124U001549 – "Universal Medical and Diagnostic Complex for the Rehabilitation of Pathological Conditions" (lead: Assoc. Prof. M.F. Bohomolov);
- No. 0124U001550 – "Control System of the Bionic Hand Prosthesis" (lead: Assoc. Prof. V.V. Shlykov);
- No. 0124U001551 – "Thermographic Imaging of Neonatal Developmental Disabilities" (lead: Assoc. Prof. L.Ye. Kalashnikova);
- No. 0124U001552 – "Electrophysical Properties of Biological Materials, Liquids and Suspensions" (lead: Assoc. Prof. A.H. Dubko).

The department's research history is equally substantial, encompassing foundational work in cardiovascular diagnostics, haemodynamic modelling, thermal control technologies for cardiac surgery, and heart valve prosthetics development. Participation in international research projects – the TEMPUS "Biomedical Engineering Educational Initiative in the Eastern Partnership Region" (coordinated by the University of Patras, Greece) and the EUMLS project on EEG/ECG signal analysis (coordinated by the University of Lübeck, Germany) – has further enriched the department's research profile and its connections to the European scientific community.

Research findings are systematically capitalised in the teaching process through integration into disciplinary content and the development of applied laboratory works grounded in ongoing research activity. Students participate directly in research alongside academic staff and present results at faculty and university-level scientific communication sessions. The faculty periodically organises scientific conferences, sessions, and round tables involving staff, researchers, students, and graduates, with outcomes disseminated through indexed scientific publications. Diploma project topics are formulated in direct connection with the department's active research directions.

The ME programme demonstrates a well-established and functioning research-teaching integration model. The thematic alignment between active research projects and programme learning outcomes is strong: work on prosthetics control, neonatal thermography, electrophysical measurement, and rehabilitation diagnostics maps directly onto core disciplinary areas including biomedical systems design, medical instrumentation, signal processing, and clinical engineering.

Students benefit not only from exposure to current research findings in formal teaching but also from active co-participation in research activity, developing authentic research competencies that are explicitly targeted by the programme's learning outcomes.

The department's accumulated research expertise – spanning decades of cardiovascular and biomedical systems research – provides a rich and continuously evolving knowledge base informing disciplinary

content. International research project participation has additionally embedded a European scientific perspective into the programme's educational culture.

Direct thematic alignment between research projects and learning outcomes: Active research in prosthetics, neonatal diagnostics, electrophysical measurement, and rehabilitation systems maps substantively onto the programme's core disciplinary competencies, ensuring research integration is current and professionally relevant.

Active student co-participation in research: Students work alongside academic staff on departmental research projects and present findings at faculty and university scientific sessions, developing genuine research competencies through authentic scientific practice.

Research-informed applied educational works: Ongoing research results are directly incorporated into laboratory and practical works, creating a continuously updated educational environment in which students engage with frontier knowledge in their field.

International research collaboration: Participation in TEMPUS and EUMLS projects with European partners has enriched the department's scientific culture and introduced an international research dimension into programme content.

Research-connected diploma project topics: Bachelor's graduation work themes are aligned with active departmental research directions, simultaneously serving as integrative competency assessments and meaningful contributions to ongoing scientific activity.

Recommendations: Not the case

The indicator is: met.

Standard S.B.9.2. Scientific research related to the objectives of the study program

The organizational component carries out scientific research activities in accordance with the objectives of the evaluated study program.

Indicator I.P.B.9.2.1	The results of scientific research are visible at national and international level in the respective scientific field and adequately capitalized.
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The department's research visibility at national and international level is directly aligned with the ME programme's core objectives of integrating graduates into the global scientific-technical space and fostering intercultural engagement with the scientific-technical community.

At the national level, visibility is confirmed through state registration of all active research projects (No. 0124U001549–0124U001552), applied contract research with national medical and engineering institutions, publication of results in indexed scientific journals, and annual participation in the International Medical Congress through the practical conference "Current State and Prospects of Biomedical Engineering."

At the international level, the department has demonstrated research visibility through participation in two European projects – the TEMPUS "Biomedical Engineering Educational Initiative in the Eastern Partnership Region" (University of Patras, Greece) and the EUMLS project on EEG/ECG signal analysis (University of Lübeck, Germany) – as well as through formal cooperation agreements with Holon Institute of Technology (Israel) and Poznań University of Technology (Poland), and staff mobility under ERASMUS+ to Leibniz University Hannover.

Research results are capitalised in the educational process through integration into disciplinary content, development of applied laboratory works, alignment of diploma project topics with active research directions, and direct student involvement in departmental research activity.

The evidence confirms fulfilment of Indicator I.P.B.9.2.1, with a stronger profile at national than at international level.

Nationally, the combination of state-registered projects, contract research with recognised institutions, indexed publications, and regular presence at the International Medical Congress establishes the department as a documented contributor to the Ukrainian biomedical engineering research community. The long-term continuity of research activity further reinforces this standing.

Internationally, the TEMPUS and EUMLS projects represent genuine and significant engagement with European research networks, producing collaborative output with recognised European universities.

Recommendations: Not the case
The indicator is: met.

DOMAIN C. Quality Management

Criterion C.1. Strategies and procedures for quality assurance, including in the field of university ethics and deontology, involving students, employers and other stakeholders and being applied consistently and transparently

Standard S.C.1.1. Application

Strategic directions, actions and procedures properly implemented

Indicator I.P.C.1.1.1	The organizational component performs actions and applies procedures consistently, proving their impact in improving the quality of education at the level of the study program. <i>The study program is periodically evaluated, from the perspective of the following aspects: requirements and policies on the labor market, teaching-learning process, resources, results, management system.</i>
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At the level of the higher education institution (Igor Sikorsky Kyiv Polytechnic Institute), a comprehensive and multi-level system of internal quality assurance of the educational process is in place. As confirmed by the university management during the meeting, this system is implemented at several interconnected levels: 1) the level of higher education students; 2) the level of academic staff; 3) the level of specialized units <https://osvita.kpi.ua/diaop> (Center for Educational Quality Assurance, Department of Educational Process Quality); 4) the level of vice-rectors and the rector; 5) the level of the Academic and Methodological Councils of the university.

Study programs are subject to regular monitoring and annual updates, during which the recommendations of stakeholders and the National Agency for Higher Education Quality Assurance (NAQA) are strictly taken into account. Students are active participants in the system: they serve as members of the Academic Councils at both the faculty and university levels and participate in the work of quality assurance commissions.

To monitor the teaching and learning process, the university utilizes an interactive electronic system, "Electronic Campus" (E-Campus) <https://kpi.ua/ecampus>. The assessment of labor market requirements and satisfaction levels is conducted through regular surveys by the Educational and Scientific Center of Applied Sociology "SocioPlus" <https://SocioPlus.kpi.ua/>. Furthermore, at the institutional level, there are specific quality control procedures, such as the regular "Rector's control" of students' learning outcomes <https://kpi.ua/evaluation>, as well as the semesterly survey "Teacher through the eyes of students" <https://kpi.ua/node/21442>, the results of which directly influence the assessment of the staff's academic performance.

The analysis of the provided documentation (<https://bmi.fbmi.kpi.ua/discussion-educational-programs/>, in the files requested by Expert Group No. 10.1 and 10.2) confirms that the organizational component consistently applies quality assurance procedures, and these procedures have a tangible impact on the improvement of study programs. The integration of the "Electronic Campus" system allows program management and academic staff to conduct timely monitoring of academic results, promptly identify students with low performance, and offer them additional consultations or adjust syllabi.

The impact of the procedures on improving the quality of education is evident: feedback from stakeholders (through "SocioPlus" surveys and direct meetings) leads to specific changes in the curricula, such as expanding the catalog of elective disciplines or adjusting the classroom workload according to students' requests. The students shared their positive impressions of how effective this method is. The quality management system culminates in an annual public report by the head of the quality assurance department to the Academic Council of the university, which demonstrates the transparency of managerial decisions.

Examples of good practice: The implementation of the semesterly feedback tool "Teacher through the eyes of students" to ensure objective monitoring of teaching quality. The use of the automated

information system "Electronic Campus" for continuous and transparent monitoring of individual learning outcomes at all stages of the educational process.

Recommendations: Given the rapid changes in labor market needs in the current context (in particular, the growing demand for specialists in rehabilitation engineering, prosthetics, and biomechatronics), it is recommended to supplement the existing quality assessment procedures with a mechanism for operational (e.g., semesterly) monitoring of requests from specialized medical institutions and companies. This will allow for a systematic evaluation of the effectiveness of introducing new elective disciplines and certificate programs and demonstrate their direct impact on employment outcomes.

The indicator is: met.

Standard S.C.1.2. Stakeholder engagement

The HEI shall demonstrate that it involves stakeholders with relevant activity in the application of the procedures.

Indicator I.P.C.1.2.1	The opinions of the members of one's own community and other interested parties are taken into account in the process of implementing the procedures.
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The Medical Engineering study program is based on a model of active collaboration with a wide range of stakeholders, including representatives of the academic community, employers, graduates, and students. Interaction with them is not sporadic but systematic, implemented through an extensive network of communication channels. The primary forms of stakeholder involvement include: 1. organizational structures: the university and the faculty involve stakeholders in the discussion of study program (EP) projects, which is documented in the minutes of department meetings and the university's Scientific and Methodological Commission meetings (in the files requested by Expert Group No. 10.1 and 10.2, <https://bmi.fbmi.kpi.ua/discussion-educational-programs/>); 2. digital tools: to ensure prompt feedback, specialized chat groups have been created in messengers (WhatsApp) for specific stakeholder groups ("Employers", "Graduates"), allowing for immediate discussion of updates to the study program (<https://bmi.fbmi.kpi.ua/discussion-educational-programs/>); 3. expert assessment: representatives of the practical sector (specifically, companies working with 3D printing, prosthetics, and medical electronics) are directly involved in reviewing the EP and are also engaged in classroom teaching as guest lecturers; 4. sociological monitoring: the Educational and Scientific Center of Applied Sociology "SocioPlus" conducts annual surveys, the results of which serve as the basis for further adjustment of the content of educational components.

The analysis indicates that stakeholder engagement mechanisms are effective. The introduction of chat groups and electronic platforms for discussing EP projects contributes to a high level of transparency in decision-making. The procedure for taking stakeholders' opinions into account is clearly documented: employers' proposals (for example, regarding the inclusion of prosthetics courses or updating image analysis methods) are reflected in the corresponding minutes of department meetings and in the updated versions of the study program <https://bmi.fbmi.kpi.ua/department/educational-programs/>. The meeting with stakeholders confirmed that this collaboration is bidirectional: employers not only influence the curriculum but also actively contribute by providing material and technical facilities (laboratories) for practical training.

Examples of good practice: Integration of production tasks into the educational process: employers provide real production tasks and equipment for diploma design, ensuring that students' knowledge meets industry requirements.

Recommendations: Not the case

The indicator is: met.

Criterion C.2. The functionality of the structures for ensuring the quality of education, including in the field of university ethics and deontology, according to the law

Standard S.C.2.1. Structures

The HEI has organizational structures in the field of quality assurance, established under the law.

Indicator I.P.C.2.1.1	In the organizational structure of the HEI, the CEAC is constituted. Such structures may also exist at the level of the organizational component.
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The National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (KPI) operates a quality assurance system that fully complies with Ukrainian legislative requirements. The university's organizational structure includes a high-level Department for Quality Assurance of the Educational Process <https://kpi.ua/about-diaop> and a Commission on Ethics and Academic Integrity within the Academic Council, which serve as the central bodies for overseeing quality and ethical standards. At the organizational component level, specifically within the Faculty of Biomedical Engineering, there are specialized commissions and internal project groups tasked with evaluating and ensuring the quality of the "Medical Engineering" study program. These structures function based on clearly defined internal regulations, including the "Regulations on the internal quality assurance system in higher education at the Igor Sikorsky Kyiv Polytechnic Institute" https://osvita.kpi.ua/sites/default/files/downloads/REGULATIONS%20_Eng.pdf, https://kpi.ua/files/etic_comission.pdf.

The structure consists of the central CEAC, which sets strategic directions, and specialized quality assurance units at the department level, approved by internal university regulations. These bodies ensure the implementation of standards, collect data from participants in the educational process, analyze performance indicators, and annually compile quality reports for the program, which are made publicly available on the department's website.

During the meeting the expert commission had a productive discussion with the representatives of the department's quality assurance units. The interview confirmed that these structures actively manage the educational process by implementing internal regulations and procedures at the study program level. Participants discussed key aspects of quality assurance, including the mechanisms for collecting student feedback (such as the "Electronic Campus" anonymous surveys), the role of stakeholders (employers and industry experts) in revising study programs, and the specific procedures for the competitive selection and professional development of teaching staff. The representatives demonstrated a clear understanding of their responsibilities in ensuring that the quality assurance system serves as a functional tool for the continuous improvement of the "Medical Engineering" program.

Examples of good practice: The University has implemented a highly effective mechanism for post-accreditation monitoring by maintaining a dedicated database that links expert recommendations directly to specific evidence of implementation (e.g., updated syllabi, department meeting protocols, and rector's orders).

Recommendations: Not the case

The indicator is: met.

Standard S.C.2.2. Operation	
The organizational structures in the field of quality assurance and that of university ethics and deontology perform their specific role and functions adequately.	
Indicator I.P.C.2.2.1	The CEAC and the structures established, as the case may be, at the level of the organizational component operate on the basis of the regulation approved by the university senate, in order to carry out the activities of internal assurance and evaluation, as well as external evaluation of the quality of education.

The internal quality assurance system at Igor Sikorsky Kyiv Polytechnic Institute operates on the basis of the "Regulations on the internal quality assurance system in higher education" https://osvita.kpi.ua/sites/default/files/downloads/REGULATIONS%20_Eng.pdf, which implements a multi-level process-based approach: 1. university students and their initiative groups (regardless of specific educational programs); 2. the level of direct implementation of educational programs and ongoing monitoring (departments, program guarantors, educational program support working groups, academic staff, program student initiative groups, and employers); 3. the level of educational program administration, annual program monitoring, and labor market needs analysis (faculty/institute administrations, student self-government bodies, and industry-specific employer councils); 4. the level of academic policy development, inspection, and monitoring (vice-rectors, university-wide structural units, advisory bodies, and joint/regional

employer councils); 5. the level of strategic decision-making (Supervisory Board, Academic Council of the University, and Rector).

The activities of quality assurance structures are effective, as they are based on data integrated into the "Electronic Campus" system (my.kpi.ua), which enables regular analysis of academic performance and teaching quality. Current program monitoring (conducted twice per semester) and annual self-assessment by departments allow for the timely implementation of recommendations provided by stakeholders (employers and students).

Academic integrity is an integral part of the University's internal quality assurance system. Igor Sikorsky Kyiv Polytechnic Institute has adopted institutional regulations governing the principles of academic integrity, prevention of plagiarism, ethical conduct in education and research, and procedures for handling violation. Academic papers, including qualification theses, are subject to plagiarism detection using dedicated software before defence. Ethical issues are considered by the Ethics Commission in accordance with the established procedures. The University also promotes academic integrity through regulations, awareness-raising activities, and continuous communication with students and academic staff, contributing to the development of a culture of responsible academic behaviour <https://kpi.ua/academic-integrity>.

Recommendations: Not the case

The indicator is: met.

Indicator I.P.C.2.2.2	The University Ethics Commission operates on the basis of the regulation approved by the university senate and acts independently of any other structure or person within the higher education institution, in compliance with the law.
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The activities of the Ethics and Academic Integrity Commission of the Igor Sikorsky Kyiv Polytechnic Institute are regulated by the "Code of Honor" <https://kpi.ua/en/code> and the "Regulations on the Commission for Ethics and Academic Integrity" <https://osvita.kpi.ua/node/171>, which were approved by the University's Academic Council. The Commission serves as a permanent advisory body to the Academic Council, operating on the principles of independence and objectivity, with the primary objective of fostering a culture of academic integrity within the university community. The Commission is composed of representatives from various structural units of the university, including members of the Student Council and the Student Trade Union, which ensures transparency and the consideration of interests for all participants in the educational process. The Commission is responsible for reviewing appeals regarding violations of ethical standards, developing regulatory and advisory materials, and submitting proposals regarding necessary disciplinary measures.

The independence of the Commission is guaranteed by its direct accountability to the University's Academic Council, thereby precluding interference from any individual or structure in the deliberation process. According to information provided at the meeting by the Deputy Head of the Ethics and Academic Integrity Commission, the Commission systematically examines complaints (around five cases last year) related to various ethical and disciplinary issues, ensuring an objective analysis for each. In the event of conflicts requiring a specialized approach (e.g., disputes between faculty and students), the Commission acts in full compliance with established procedures, ensuring the confidentiality of the review. The university utilizes the "Code of Honor" and an internal electronic document management system to provide transparent updates to complainants regarding the progress and outcomes of their cases, demonstrating strict adherence to established protocols.

Recommendations: Implement multi-channel reporting systems (including dedicated emails, anonymous bots, and hotlines) for all other types of potential conflict situations (e.g., academic disputes, harassment, workplace conflicts, or violations of student rights). Ensure that information about these channels is easily accessible to all members of the university community, for example, by creating a unified "Feedback and Support" portal on the university website.

The indicator is: met.

Criterion C.3. Procedures for initiating, monitoring and periodically reviewing curricula and fields of study and activities involving students, employers and other stakeholders

Standard S.C.3.1. Procedures and their application

The HEI has procedures for initiating, monitoring and periodically reviewing the programs and fields of study and the activities carried out and applies them systematically.

Indicator I.P.C.3.1.1	The organizational component consistently applies the procedures, proving their impact on quality assurance. <i>The process of periodic evaluation of the study program takes into account: (i) the interest in the study program and the satisfaction regarding the preparation of students/graduates on the part of the labor market representatives; (ii) interest in the study program and satisfaction regarding the students' preparation on the part of the internship partners; (iii) the results of the monitoring of students' opinion regarding the teaching process.</i>
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KPI consistently implements procedures for initiating, monitoring, and periodically reviewing study programs (SP). According to regulatory documents, including the "Regulations on Educational Programs at KPI" https://osvita.kpi.ua/sites/default/files/downloads/Pologennia_OP_2025_QR.pdf the process for evaluating the "Medical Engineering" SP is comprehensive and includes: systematic consultations with labor market representatives, allowing for the alignment of the SP content with industry requirements (the results of these consultations are documented in department meeting minutes and are taken into account when updating curricula); evaluation by Internship Partners (internship bases, which also serve as potential employers, actively participate in shaping students' practical skills); monitoring Student Opinion (regular surveys of higher education seekers conducted via the "Electronic Campus" system and thematic studies by the "SocioPlus" Center for Applied Sociology allow for feedback on the teaching process and the implementation of necessary adjustments).

In full compliance with Section 4 of "Regulations on Educational Programs at KPI", the department consistently executes the annual monitoring cycle led by the EP working group and its guarantor to ensure the program's ongoing relevance and quality. This systematic process integrates comprehensive data collection, including student surveys via the "Electronic Campus" system and targeted stakeholder feedback analyzed by the "SocioPlus" Center for Applied Sociology. Following the Regulation, all proposals from students, graduates, and labor market representatives are systematically documented in the official "Report on the results of monitoring the quality of the educational program" (in the files requested by Expert Group No. 10.1 and 10.2), which serves as the foundation for all program updates. The direct impact of these procedures on quality assurance is clearly evidenced by the program's structural adaptations - such as the expansion of elective components and the refinement of professional courses - which are finalized through public discussion and formal approval by the Scientific and Methodological Commission.

Recommendations: Not the case

The indicator is: met.

Indicator I.P.C.3.1.2	Members of their own community and other stakeholders are involved in the process of implementing the procedures. <i>The implementation of the procedures benefits from the employers' input, helping to ensure their satisfaction.</i>
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According to the "Regulation on Educational Programs of Igor Sikorsky KPI", the educational program (EP) "Medical Engineering" is developed and revised with the active involvement of the academic community and external stakeholders. The project group responsible for the EP, as required by the Regulation, includes both academic staff and representatives of professional organizations. Periodic revisions are conducted through a transparent mechanism that mandates public discussion and formal agreement by the Scientific and Methodological Commission of the university. The university utilizes various communication channels to ensure this engagement, including dedicated interactive WhatsApp chat groups and the official website, where draft updates are posted for public comment <https://bmi.fbmi.kpi.ua/discussion-educational-programs/>.

The department demonstrates a high level of responsiveness to employer input. Following the recommendations of chief engineer of the biomedical engineering laboratory at the State Institution

"Institute of Traumatology and Orthopedics of the National Academy of Medical Sciences of Ukraine", the educational program was updated to include specific components related to prosthetics. In the 2024 curriculum version, feedback from employers led to a significant increase in classroom hours for practice-oriented disciplines. Specifically, the department increased hours for "Quantitative Physiology" (36 hours of practical, 18 hours of laboratory), introduced a new educational component "Mechanics and Biomechanics" (54 hours of practical), and expanded the "Biophysics" course (44 hours of practical). Systematic collaboration with industry partners resulted in the formal launch of several certified training programs within the main EP: "Clinical Engineering", "Biomedical Information and Engineering Technologies", and "Engineering and Prosthetics Technologies".

The active participation of industry experts in classroom lectures, their role in mentoring bachelor's theses, and their constant engagement in the WhatsApp chat groups created for program discussion ensure that the curriculum remains aligned with the practical requirements of the biomedical industry. The results of these procedures are systematically documented and reported.

Recommendations: Not the case

The indicator is: met.

Criterion C.4. Procedures for periodic evaluation of the quality of the activities of the teaching, auxiliary and administrative staff

Standard S.C.4.1. Procedures

The application of methodologies and procedures contributes to improving the quality of staff activities.

Indicator I.P.C.4.1.1	The organizational component analyzes the results of the semester evaluation process by students of the teachers' performance.
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Student evaluations of lecturers within the "Medical Engineering" degree programme are carried out every semester (twice a year) in accordance with the internal regulations of the Igor Sikorsky Kyiv Polytechnic Institute. This process is digital and is carried out using the "Electronic Campus" automated information system (<https://ecampus.kpi.ua>). The evaluation results are collected automatically, centralised at department level and analysed by the management of the Faculty of Biomedical Engineering for the purpose of monitoring and ensuring the quality of the educational process. Each lecturer also sees their overall rating for each component of the survey.

Every semester, students anonymously rate their teachers, and the results are analyzed by the department and faculty administrations to monitor educational quality. During the meeting, the students confirm that the survey results are actively utilized by the administration to improve teaching quality. Specifically, these surveys have direct, actionable consequences, such as the replacement of a teacher when constructive interaction with the student group cannot be established.

Recommendations: Not the case

The indicator is: met.

Criterion C.5. Systematically updated databases on internal quality assurance

Standard S.C.5.1. Databases

The HEI uses databases to support internal quality assurance activities.

Indicator I.P.C.5.1.1	The organizational component systematically collects and analyzes data necessary for the internal quality assurance process.
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Igor Sikorsky Kyiv Polytechnic Institute uses an integrated digital ecosystem to ensure quality: the automated "Digital KPI" and "KPI Campus" systems collect data on the teaching process, academic performance and stakeholder surveys. Separate, unique databases (Google Sheets) are used for the systematic tracking of accreditation recommendations, containing hyperlinks to evidence of compliance with each point.

The Department of Biomedical Engineering systematically uses Google Sheets as a quality management tool. These spreadsheets allow us not only to collect data but also to analyze it over time. Links to specific documents within the spreadsheets ensure full traceability of the implementation of expert

recommendations. This practice transforms routine monitoring into an effective feedback mechanism: based on the data accumulated in these records, the working group adjusts the components of the educational program, the list of elective courses, and teaching methods each year.

Examples of good practice: Creating interactive Google Sheets to monitor accreditation recommendations, which clearly display the status of changes being implemented in real time. The use of hyperlinks to supporting documentation (meeting minutes, employer reports, revised curricula) in these spreadsheets allows any stakeholder or expert to verify the department's performance.

Recommendations: Publishing on the university website at least a summary of the annual reports on the activity of the Quality Commission.

The indicator is: met.

Criterion C.6. Transparency of information of public interest, including information on the programmes and fields of study offered, as well as on the related certificates, diplomas and qualifications

Standard S.C.6.1. Transparency

The organizational component ensures the transparency of information, according to the law.

Indicator I.P.C.6.1.1	The organizational component ensures the publication and access to information of public interest regarding the evaluated study program.
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The organizational unit ensures complete transparency of its activities by publishing all information of public interest on the official websites of the university and the department. Documents regulating educational activities - such as the Statute of the Igor Sikorsky Kyiv Polytechnic Institute, Internal Rules, Regulations on the Organization of the Educational Process, and the Code of Honor - are freely available on the university's official website <https://osvita.kpi.ua/docs>. Information regarding the "Medical Engineering" study program is systematically organized within the university's general list of programs, while syllabi and curriculum details are published on the website of the Department of Biomedical Engineering <https://bmi.fbmi.kpi.ua/>. The University ensures full compliance with indicator by maintaining a centralized, public-access information portal where all foundational regulatory documents are published. The organizational component effectively utilizes the university website to provide stakeholders with permanent access to the study program's educational components, syllabi, and administrative regulations. This systematic publication of public-interest information, including reports on budget funds and vice-rector activity reports, demonstrates an institutional framework that guarantees transparency and accountability.

Recommendations: Not the case

The indicator is: met.

Indicator I.P.C.6.1.2	The organizational component ensures the transparency of the decision-making processes.
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The Department of Biomedical Engineering implements a transparent decision-making framework, ensuring that all key changes to the study program are documented and accessible to stakeholders. This is achieved through the systematic publication of excerpts from department meeting protocols, which record discussions and decisions regarding program improvements. The department maintains a dedicated section on its official website, "Discussion of Educational Programs", which serves as a central repository for these protocols. Furthermore, the department ensures accountability by publishing comprehensive reports on post-accreditation monitoring and findings of internal quality commissions. To facilitate interactive and transparent communication, the department utilizes a network of thematic chat groups (WhatsApp) for students, graduates, and employers, providing an operational channel for feedback that is subsequently integrated into the formal decision-making process of the department.

The department ensures transparent decision-making by publishing excerpts from department meeting protocols where issues regarding program improvements were considered <https://bmi.fbmi.kpi.ua/discussion-educational-programs/>.

The results of post-accreditation monitoring and quality commission reports are published in open access, allowing any stakeholder to verify the implementation of recommendations <https://bmi.fbmi.kpi.ua/discussion-educational-programs/>.

The creation of thematic chat groups for students, graduates, and employers establishes an additional layer of transparency, where stakeholders can not only receive information but also participate in program discussions.

This approach ensures full accountability to the public and compliance with the principles of openness established by Ukrainian legislation on access to public information.

Recommendations: Not the case

The indicator is: met.

Criterion C.7. Compliance with the deadlines and reporting standards provided by the legislation in force

Standard S.C.7.1. Preparation and transmission of reports

The IIS prepares and transmits or publishes reports, according to the law.

Indicator I.P.C.7.1.1	The organizational component collects and transmits the requested data, respectively prepares and publishes reports, ensuring compliance with the obligations arising from public responsibility.
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The University systematically collects, transmits, and publishes information in strict accordance with Ukrainian legislation. Information managers publish data required by Article 15 of the Law of Ukraine "On Access to Public Information" on the university website <https://kpi.ua/public>. Reports of university vice-rectors and the Trade Union Committee regarding the implementation of the Collective Agreement are published regularly (<https://kpi.ua/report>). The university publishes reports on the use of budget funds, including specific budget programs <https://kpi.ua/budget>. As detailed in the previous criteria, information regarding the study program, its monitoring, and improvement is systematically posted in relevant databases on the department and faculty websites.

The reporting process is fully integrated with national legal requirements, ensuring that the institution maintains accountability for its educational, financial, and social obligations. The department maintains a consistent workflow for collecting and transmitting requested data to the university administration, ensuring that the quality assurance system functions as a reliable information source. By publishing reports on the use of budget funds and the fulfillment of collective agreements, the organizational component proves its commitment to the principle of public responsibility, thereby meeting the institutional expectations for standardized and timely reporting.

In addition, during the public discussion of the draft educational program, the draft is made public one month in advance, and stakeholders can submit their recommendations <https://bmi.fbmi.kpi.ua/department/educational-programs/>.

Recommendations: In line with the commitment to institutional transparency and the best practices of the European Higher Education Area (EHEA), it is recommended that the University considers the development and annual publication of a summary report on the activities of the Commission on Ethics and Academic Integrity on the official university website. While the Commission currently reports annually to the Academic Council in accordance with Clause 2.2 of its internal Regulations, adopting a practice of public summary reporting would further strengthen the transparency of the ethical environment, foster a culture of academic integrity, and align the institutional quality assurance procedures with the broader European standards of public accountability.

The indicator is: met.

Criterion C.8. Participation in external evaluation processes, according to the law

Standard S.C.8.1. Compliance with the external evaluation obligation

The HEI is subject to the external quality assessment process, according to the law.

Indicator I.P.C.8.1.1	The organizational component carries out the procedures related to the external quality evaluation process, in order to organize, under the law, the evaluated study program.
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The University and the department systematically fulfill the legal requirement to undergo external quality evaluation. To enhance the internal quality assurance system and prepare for external assessments, the organizational units conduct self-analysis and post-accreditation monitoring in accordance with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG 2015). Internal activities are governed by official orders, such as Order No. NOD/113/24 of February 20, 2024, regarding post-accreditation monitoring, and Order No. NU/185/2023 of September 15, 2023, regarding departmental self-analysis. Post-accreditation monitoring is conducted in the third year after receiving accreditation. For the "Medical Engineering" bachelor's program, the post-accreditation monitoring report has been completed and integrated into the university-wide database (https://bmi.fbmi.kpi.ua/wp-content/uploads/2025/04/monitoring_addition-3_oppb_mi_58753.pdf, https://docs.google.com/spreadsheets/d/1Fawjb6Yneo_Q45HUP3K4AJitNTxqLx1vWs57PMfeLOA/edit?gid=297877766#gid=297877766).

By aligning internal self-analysis procedures with the ESG 2015 standards, the department ensures that the study program remains consistently prepared for external evaluation as required by law. The completion of post-accreditation monitoring and the subsequent archiving of these reports in the university-wide database prove that the department treats external evaluation not as a one-time event, but as a continuous cycle of quality improvement. The existence of specific rector-level orders governing self-analysis proves that the organizational component operates within a clear legal framework, ensuring that the evaluated study program is organized in accordance with national and European quality standards.

Recommendations: Not the case

The indicator is: met.

IV. SWOT Analysis

Strengths: ✓ Combining engineering disciplines with medical and biomedical disciplines. ✓ Cooperation with leading medical organizations in the country. ✓ Ukrainian rankings in terms of the number of patents and intellectual property protection documents. ✓ Participation in strategic programs for the development of education and science; strong recognition among employers. ✓ International opportunities: Participation in: Erasmus+; international grants; academic mobility programs, programs and projects with foreign universities.	INTERNAL FACTORS 	Weaknesses: ✓ Weak integration into international scientific networks ✓ Limited scientific collaborations with foreign universities ✓ Limited presence in high-quality scientific journals ✓ Slow adaptation to international educational standards. ✓ Low funding ✓ Limited opportunities to attract top scientists. ✓ Perception of the country as a whole - international partners consider: political instability, safety issues.
	SWOT Analysis	
Opportunities: ✓ KPI is consistently included in global university rankings, occupying positions in the top 1,000 ✓ The university is a national leader in inventive activity and holds strong positions in certain fields of engineering	EXTERNAL FACTORS 	Threats: ✓ The pace of technological change creates a continuous need to update the content, structure, and learning outcomes of the educational program in line with current international trends.

and technology in international rankings. ✓ Well-equipped teaching laboratories ✓ Motivated and well-trained teaching staff ✓ Biomedical engineering is among the most dynamic engineering fields, integrating advances in digital medicine, biomechatronics, medical information systems, artificial intelligence, and personalized healthcare. ✓ Current wartime and post-war conditions are significantly transforming societal demands on the healthcare system. The growing need for specialists in rehabilitation engineering, prosthetics, assistive technologies, and healthcare systems requires adaptive development of the educational program to address emerging national and societal priorities.		✓ In the context of Ukraine's integration into the European Higher Education Area (EHEA), there is a growing need for further alignment of the educational program with the ESG principles, the European Qualifications Framework (EQF), and outcome-based educational approaches. ✓ Risks for the fate of the university in the international space in connection with the pandemic, COVID and war. ✓ A limited number of programs with full instruction in English and a limited number of faculties with programs prepared with full instruction in English.
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V. Compliance with standards and performance indicators and recommendations made

Crt. no.	Performance indicator	Degree of fulfillment (M/PM/NM)	Recommendations
DOMAIN A. Institutional capacity			
1.	I.P.A.1.1.1 For the development of the program/field of university studies, the IIS has adequate organizational components and a management system, whose functioning is based on methodologies, regulations and procedures periodically reviewed, under the conditions of the law.	M	
2.	I.P.A.1.2.1 The opinions of the members of the faculty and the department, respectively of the branch or extension and of other interested parties are taken into account in the process of adopting and revising the methodologies, regulations and application procedures.	M	
3.	I.P.A.2.1.1 IIS holds, in accordance with the law, spaces dedicated to the corresponding educational, research and administrative processes, as well as for services for students, doctoral students and students, which ensure a favorable environment for life and study, including for those with disabilities. Optimal spaces are also provided for the performance	M	

Crt. no.	Performance indicator	Degree of fulfillment (M/PM/NM)	Recommendations
	of staff activities. They are adequately equipped. <i>The facilities made available to students, including the related equipment, are quantitatively and qualitatively adequate for the development of the objectives of the study program, as designed and planned, and allow the application of study methods.</i>		
4.	I.P.A.2.2.1 Immovable and movable property shall be adequately maintained, so as to ensure optimal conditions for study, research and life, as well as work.	M	
5.	I.P.A.3.1.1 The human resources of the organizational component are adequate for carrying out the activities related to the evaluated program/field of university studies. The teaching staff has the necessary qualifications and professional competences to teach the subjects that correspond to them in the list of functions.	M	
6.	I.P.A.3.1.2 ÎS ensures the professional and personal development of the staff.	M	
7.	I.P.A.3.2.1 The recruitment procedures are in accordance with the legal provisions, established and carried out in a transparent manner.	M	
8.	I.P.A.4.1.1 The organizational component uses IT tools within its own procedures in order to improve access and ensure quality services for members of its own community and indirect beneficiaries of education.	M	
DOMAIN B. Educational effectiveness			
9.	I.P.B.1.1.1 The university study program is developed and structured in relation to the expected learning outcomes and is organized on the basis of transferable study credits. It encompasses the totality of learning, teaching, practical training, research and assessment experiences that together lead to a university qualification.	PM	It is recommended that the curriculum be revised to deepen the study of human anatomy, artificial intelligence applications, and industrial automation, reflecting current labour market demands and the interdisciplinary nature of the Medical Engineering field. Continue and deepen the integration of emerging digital health technologies (AI-driven diagnostics, telemedicine, wearable medical devices) into the programme's elective and core courses to maintain alignment with rapidly evolving labour market demands. Reorganizing activities so that they do not exceed 8 hours per working day. Strengthen the mapping between individual disciplines and specific ELOs in programme documentation to make the correspondence more explicit and

Crt. no.	Performance indicator	Degree of fulfillment (M/PM/NM)	Recommendations
			verifiable during internal and external reviews. The institution is encouraged to expand the scope and volume of practical training conducted at external partner facilities, including medical institutions, research centres, and industrial enterprises, in order to strengthen students' professional competencies in real-world environments and ensuring students have access to a diverse range of clinical engineering environments. Periodically review and update the balance between general (ZO) and professional (PO) outcomes to reflect changes in the regulatory and technological landscape of biomedical engineering.
10.	I.P.B.1.2.1 The study program operates under the conditions of the authorization act, respectively of accreditation, aiming at the realization of the educational ideal of higher education according to the law.	M	Explore the potential for regular (annual) benchmarking the ME programme against comparable European biomedical engineering programmes within the EHEA to identify additional good practices and areas for development.
11.	I.P.B.2.1.1 The learning outcomes are consistent with the level of qualification.	M	Expand the scope of international benchmarking to include universities from additional European countries, in particular those active in the European Higher Education Area (EHEA), to facilitate potential future participation in academic exchange and joint degree initiatives. Explore formal academic cooperation agreements with some of the benchmarked institutions (e.g., collaborative projects, student mobility, joint research) to move beyond curriculum borrowing towards active partnership.
12.	I.P.B.2.1.2 The expected learning outcomes are correlated with the competencies required by the corresponding occupations, according to occupational standards and/or the European Occupational Classification (ESCO). <i>The curriculum is designed to meet the educational requirements formulated by employers, including on the acquisition of practical skills.</i> <i>The educational requirements formulated by employers have helped to define learning outcomes specific to the study program.</i> <i>The stated results of the study program allow graduates to engage in the</i>	M	Strengthen the feedback loop between graduate employment monitoring (SocioPlus surveys, Career Development Center data, Alumni Association) and specific PLO or curriculum revisions by documenting explicitly which employment data influenced which programme changes in the annual self-evaluation report.

Crt. no.	Performance indicator	Degree of fulfillment (M/PM/NM)	Recommendations
	<i>work in positions corresponding to the qualification obtained. The graduates of the study program have clearly defined the perspective of occupation on the labor market.</i>		
13.	I.P.B.3.1.1 The organizational component ensures the implementation of the principles of student-centered learning within the curriculum and through the didactic strategies used in the learning and teaching activities and experiences.	M	
14.	I.P.B.3.1.2 The organizational component provides students with opportunities to participate in academic mobility programs, carried out with physical and/or virtual presence.	M	
15.	I.P.B.3.2.1 The organizational component ensures fair opportunities for students, in accordance with their potential and aspirations, taking into account the diversity of learning styles and skills.	M	Conduct a regular equity audit of student participation in extracurricular, mobility, and research activities, disaggregating data by relevant student characteristics, to identify any systematic patterns of under-participation and develop targeted outreach or support measures accordingly.
16.	I.P.B.4.1.1 The organizational component ensures access for students, including those with special educational needs/disabilities, to resources and services designed to support the learning process, appropriate in relation to the individual learning needs, the field of study, the study cycle and the form of organization of the study program. <i>The study programme provides students with relevant support for the learning process (career counselling, tutoring and assistance), thus facilitating the acquisition of knowledge and skills, respectively promotion in a year of higher study.</i>	M	
17.	I.P.B.5.1.1 Learning outcomes are adequately described and support the understanding of the student's and teacher's expectations regarding the content of the subjects in the curriculum. <i>The results of the study program have been established according to what students should know (the correspondence between the content of the educational process and the learning outcomes specified in the diploma supplement), understand and/or be able to demonstrate after completing the learning process. They are in full compliance with EAFSG standards.</i>	M	
18.	I.P.B.5.1.2 The verification of the achievement of learning results is carried out through	M	

Crt. no.	Performance indicator	Degree of fulfillment (M/PM/NM)	Recommendations
	evaluation exams along the way and through graduation exams. <i>The development of competences by students (by acquiring the knowledge and skills provided in the subject sheets) is adequately assessed, on the 8 defined learning areas EAFSG standards.</i> <i>The theme for the elaboration of the graduation works (diploma projects) is established in collaboration with the economic environment.</i>		
19.	I.P.B.6.1.1 The organizational component carries out systematic activities to ensure an easy transition of graduates from learning to the labor market. <i>The higher education institution conducts regular consultations with representatives of the environment including students, of the socio-economic and cultural-artistic environment and of the labor market, regarding the objectives and declared results of the study program. These consultations shall be carried out in an organized framework and are documented.</i>	M	
20.	I.P.B.7.1.1 The organizational component applies the procedures regarding admission.	M	
21.	I.P.B.7.1.2 Admission to university study programs is carried out in compliance with the principles of equity and equal opportunities, as well as with the establishment of support measures to ensure access to vulnerable groups, in situations of social and educational risk, including candidates with special educational needs and/or disabilities.	M	
22.	I.P.B.7.2.1 The organizational component applies the regulations regarding the professional activity of students.	M	It is recommended that the department develop a structured academic mobility recovery and expansion plan oriented towards the post-war period, encompassing: proactive outreach to existing ERASMUS+ and bilateral partner universities to reaffirm cooperation commitments and identify new joint activity opportunities; a systematic mapping of potential new partnership institutions in countries with strong biomedical engineering profiles; and the establishment of dedicated informational, financial, and administrative support mechanisms for students and staff wishing to undertake outgoing mobility placements.
23.	I.P.B.8.1.1 The organizational component carries out international cooperation actions through which the mobility of the members of its	M	

Crt. no.	Performance indicator	Degree of fulfillment (M/PM/NM)	Recommendations
	own community and the collaboration in academic and research activity are supported.		
24.	I.P.B.9.1.1 Learning based on scientific investigation and research results support and are capitalized in the acquisition of the learning outcomes targeted through the study program.	M	
25.	I.P.B.9.2.1 The results of scientific research are visible at national and international level in the respective scientific field and adequately capitalized.	M	
DOMAIN C. Quality Management			
26.	I.P.C.1.1.1 The organizational component carries out actions and applies procedures, consistently, proving their impact in improving the quality of education at the level of the study program. <i>The study program is periodically evaluated, from the perspective of the following aspects: requirements and policies on the labor market, teaching-learning process, resources, results, management system.</i>	M	Given the rapid changes in labor market needs in the current context (in particular, the growing demand for specialists in rehabilitation engineering, prosthetics, and biomechanics), it is recommended to supplement the existing quality assessment procedures with a mechanism for operational (e.g., semesterly) monitoring of requests from specialized medical institutions and companies. This will allow for a systematic evaluation of the effectiveness of introducing new elective disciplines and certificate programs and demonstrate their direct impact on employment outcomes.
27.	I.P.C.1.2.1 The opinions of the members of the own community and other interested parties are taken into account in the process of implementing the procedures.	M	
28.	I.P.C.2.1.1 The CEAC is established in the organizational structure of the ÎS. There can be such structures at the level of the organizational component as well.	M	
29.	I.P.C.2.2.1 CEAC and the structures established, as the case may be, at the level of the organizational component operate on the basis of the regulation approved by the university senate, in order to carry out the activities of internal assurance and evaluation, as well as external evaluation of the quality of education.	M	
30.	I.P.C.2.2.2 The University Ethics Commission operates on the basis of the regulation approved by the university senate and acts independently of any other structure or person within the higher education institution, in compliance with the law.	M	Implement multi-channel reporting systems (including dedicated emails, anonymous bots, and hotlines) for all other types of potential conflict situations (e.g., academic disputes, harassment, workplace conflicts, or violations of student rights). Ensure that information about these channels is

Crt. no.	Performance indicator	Degree of fulfillment (M/PM/NM)	Recommendations
			easily accessible to all members of the university community, for example, by creating a unified "Feedback and Support" portal on the university website.
31.	I.P.C.3.1.1 The organizational component consistently applies the procedures, proving their impact in quality assurance. <i>The process of periodic evaluation of the study program takes into account: (i) the interest in the study program and the satisfaction regarding the preparation of students/graduates from the representatives of the labor market; (ii) interest in the study programme and satisfaction with training of students from practice partners; (iii) the results of monitoring the students' opinion regarding the teaching process.</i>	M	
32.	I.P.C.3.1.2 Members of their own community and other interested parties are involved in the process of implementing the procedures. <i>The implementation of the procedures benefits from the input of employers, helping to ensure their satisfaction.</i>	M	
33.	I.P.C.4.1.1 The organizational component analyzes the results of the semester evaluation process by students of the teachers' performance.	M	
34.	I.P.C.5.1.1 The organizational component systematically collects and analyzes the data necessary for the internal quality assurance process.	M	Publishing on the university website at least a summary of the annual reports on the activity of the Quality Commission.
35.	I.P.C.6.1.1 The organizational component ensures the publication and access to information of public interest regarding the evaluated study program.	M	
36.	I.P.C.6.1.2 The organizational component ensures the transparency of the decision-making processes.	M	
37.	I.P.C.7.1.1 The organizational component collects and transmits the requested data, respectively prepares and publishes reports, ensuring compliance with the obligations arising from public liability.	M	In line with the commitment to institutional transparency and the best practices of the European Higher Education Area (EHEA), it is recommended that the University considers the development and annual publication of a summary report on the activities of the Commission on Ethics and Academic Integrity on the official university website. While the Commission currently reports annually to the Academic Council in accordance with Clause 2.2 of its internal Regulations, adopting a practice of public summary reporting would further

Crt. no.	Performance indicator	Degree of fulfillment (M/PM/NM)	Recommendations
			strengthen the transparency of the ethical environment, foster a culture of academic integrity, and align the institutional quality assurance procedures with the broader European standards of public accountability.
38.	I.P.C.8.1.1 The organizational component carries out the procedures related to the external quality evaluation process, in order to organize, under the law, the evaluated study program.	M	

Centralizing table of performance indicators – degree of fulfillment

Evaluation area	Number of performance indicators		
	Fulfilled	Partially Fulfilled	Not met
Area A. Institutional capacity	8	0	0
Area B. Educational effectiveness	16	1	0
Area C. Quality Management	13	0	0
Total	37	1	0

VI. Conclusions

From the analysis of the Internal Evaluation Report (IER), the annexes attached to it and the additional documents provided by the representatives of the Medical Engineering study program, as well as from the findings during the visit to the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” (KPI), the ARACIS Evaluation Commission considers the following:

- National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” (KPI) is a public higher education institution with legal personality, part of the national higher education system of Ukraine.
- Currently, the Medical Engineering study program is accredited by the Ministry of Education and Science of Ukraine.
- The Faculty of Medical Bioengineering of the Igor Sikorsky Kyiv Polytechnic Institute has a very good collaboration with relevant economic partners in the field of the evaluated study program.
- The Medical Engineering study program benefits from the managerial support of the Igor Sikorsky Kyiv Polytechnic Institute and the Faculty for the development, evolution and fulfillment of the assumed mission. Following the periodic evaluation procedure of the Bachelor's degree program, Medical Engineering, within the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (KPI), the ARACIS Evaluation Commission proposes:

maintaining the accreditation (MAC) and granting the EUR-ACE® certification, with an enrollment capacity of 70 students in the first year of study.

VII. Annexes

Visit schedule

The institution's point of view on the content of the EER