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Report on the Accreditation of Study Programmes

**at National Technical University
"Kharkiv Polytechnic Institute"**

IP-0571-1
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ZEvA
Zentrale Evaluations- & Akkreditierungsagentur
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20th Meeting of the ZEvA Commission on 7th November 2023

Item 04.01

Study Programme	Degree	ECTS	Dura-tion	Type of Pro-gramme	Number of Students	Licensed stu-dents per year
Computer Science and intel-ligent Systems (CSIS)	Bache-lor	240	4 years	Fulltime	148	90
Software Engineering (SE)	*Bache-lor*	*240*	*4 years*	*Fulltime*	*507*	*155*
Management of Organisa-tions and Administration (MOA)	Bache-lor	240	4 years	Fulltime	143	76
Business Administration (in English (BA)	Bache-lor	240	4 years	Fulltime	50	20

Accreditation contract signed on: 9th September 2021
Date of online site visit: 5th/6th September 2023

Contact Person at the higher education institution:
Serhii Radohuz, Head of Methodological Department

ZEvA project coordinator: Dr. Barbara Haferkorn

Expert Panel:

- Prof Dr. Julian Reichwald, Professor for Business Informatics (Digital Business Tech-nologies), Mannheim University of Applied Sciences, Head of Virtual Engineering Competence Center
- Prof. Dr. Eric Schoop, Technische Universität Dresden, Chair of Information Manage-ment, Faculty of Business and Economics
- Prof. Dr. Christine Volkmann (Schumpeter School of Business and Economics, Uni-versität Wuppertal, UNESCO-Chair for Entrepreneurship and Intercultural Manage-ment)
- Dr. Ievgen Ryzhenko, Didactic Manager at Festo Ukraine,
- Ms. Patrizia Jaroscinsky-Bartzel (student of Customer Relationship Management at Technical University Chemnitz (M.A.); student expert)

Hanover, 7th November 2023

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I. Final Vote of the Expert Panel and Decision of the Accreditation Commission

1. Decision of the ZEvA Commission (7th November 2023)

The ZEvA-Commission follows the experts' report and recommendations (and takes note of the university's response).

The ZEvA-Commission decides to accredit the following degree programmes offered by the National Technical University "Kharkiv Polytechnic Institute" without conditions for a period of six years:

- *Bachelor's programme "Computer Science and Intelligent Systems"*
- *Bachelor's programme "Software Engineering"*
- *Bachelor's programme "Management of Organisations and Administration"*
- *Bachelor's programme "Business Administration (in English)"*

This decision is based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), the Framework of Qualifications of the European Higher Education Area and the recommendations of the ECTS Users' Guide as referred to in the ZEvA Manual for the External Assessment of Study Programmes.

2.	**Final Vote of the Expert Panel**

2.1	**Summary of the Findings and Appraisal**

The expert panel is impressed by the innovative study programmes, the teaching faculty and the students they met during the online talks. Structure and content of the study programmes are well considered and convincing. Graduates are provided with both a solid academic education, research skills and the skills they need to succeed in a complex internationalised labour market.

The experts were equally impressed by the dynamic and progressive team of teachers and researchers in both departments, their dedication to teaching and their openness towards new and innovative teaching methods.

Furthermore, the experts have gained a very positive overall impression of the educational infrastructure provided for students at KhPI. Students benefit from the excellent, state-of-the art learning environment, the university's network of external partners in the region and beyond and a wide range of possibilities for internationalisation.

The support system for students and a personal atmosphere contribute to optimal learning conditions for students.

The university has developed an elaborate internal quality assurance system, both at central and decentral level. All internal and external stakeholders, including representatives of employers from the region and beyond and the students, are actively involved in the continuous improvement and development of the study programmes.

All in all, the experts conclude that the study programmes are in full compliance with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).

2.2	**Bachelor's programme "Computer Science and intelligent Systems"**

2.2.1   Recommendations

None.

2.2.2   Conditions

None.

2.2.3   Recommendation to the ZEvA Commission:

The experts recommend the accreditation (without conditions) of the Bachelor's programme "Computer Science and Intelligent Systems" for a period of six years.

2.3 Bachelor's Programme "Software Engineering"

2.3.1   Recommendations

None

2.3.2   Conditions

None

2.3.3   Recommendation to the ZEvA Commission:

The experts recommend the accreditation (without conditions) of the Bachelor's programme "Software Engineering" for a period of six years.

2.4 Bachelor's Programme "Management of Organisations and Administration"

2.4.1   Recommendations

None

2.4.2   Conditions

None

2.4.3   Recommendation to the ZEvA Commission:

The experts recommend the accreditation (without conditions) of the Bachelor's programme "Management of Organisations and Administration" for a period of six years.

2.5 Bachelor's Programme "Business Administration (in English)"

2.5.1   Recommendations

None

2.5.2   Conditions

None

2.5.3   Recommendation to the ZEvA Commission:

The experts recommend the accreditation (without conditions) of the Bachelor's programme "Business Administration (in English)" for a period of six years.

II. Evaluation Report of the Expert Panel

Introduction: Purpose, Design and Context of the Accreditation Procedure

It is the purpose of this accreditation procedure to assess the quality of four Bachelor's programmes in the fields of Business Administration and Computer Science as offered by the National Technical University "Kharkiv Polytechnic Institute" (hereinafter referred to as KhPI) in Kharkiv/Ukraine.

The assessment is based on the framework laid out in the "ZEvA Manual for the External Assessment of Study Programmes". This framework integrates the requirements of the "European Standards and Guidelines for Quality Assurance in Higher Education (ESG)" (ENQA 2015), the "Framework for Qualifications for the European Higher Education Area" (2005) and the "ECTS User's Guide" (European Communities, 2015).

As stipulated in the ESG, the assessment was organized as a multiple-step peer review procedure. ZEvA assembled an expert panel composed of three university professors in the relevant disciplines, one professional from outside academia and one student.

For the purpose of assessing the study programmes, KhPI generated a self-evaluation report including links to supplementary documents (course syllabi, CVs of teaching faculty, relevant statistical data, rules and regulations). The self-report and all documents were submitted in English.

Upon reception of the self-report, one of the experts (Dr. Ievgen Ryzhenko) travelled to Kharkiv for a site visit to see the facilities at KhPI (21st August, 2023). The outcomes of this visit were made transparent to the other experts and were duly accounted for in the assessment process.

Following that, the experts conducted a two-day online site visit which included separate interviews with members of the university leadership board, the heads of the departments, academic supervisors and programme coordinators, teaching faculty, students, graduates and employers. The online talks took place on the 5th and 6th of September, 2023.

This report is based on the experts' assessment of the self-report, the on-site visit and the results of the online talks. It will serve as a basis for the ZEvA Accreditation Commission to decide on the accreditation of the study programmes with the ZEvA quality seal.

The experts would like to thank all involved members of KhPI faculty and staff for the transparent documentation, the professional organisation of the site visit and the open atmosphere during the online talks.

1. Governance, Management and Profile of the University

1.1 Mission and Profile of the University and the Faculty

1.1.1 University

KhPI was founded in 1885 under the name "Kharkiv Practical Technological Institute". Working as a Ukrainian HEI since 1991, KhPI was granted national status in 2000 for *"national and international recognition of performance and significant contribution to the development of national higher education and science".* Since then, the university has held its current name, National Technical University "Kharkiv Polytechnic Institute" (NTU "KhPI").

Today, the university consists of 101 departments, 10 educational and scientific institutes and several separate structural units (Kharkiv Computer and Technological Professional College, Poltava Polytechnic Professional College; Interdisciplinary Institute of Postgraduate Education).

According to the self-report KhPI's research infrastructure includes the following centres: Innovation Business Incubator, Technology and Innovation Support Centre, Centre for Modern Technologies in Metallography, Ukrainian-Turkish Scientific-Technological and Research Centre, "NTU KhPI Science Park" Ltd., Intersectoral centre of engine building for armoured vehicles, Inclusive educational centre "Arsenal of Ideas Ukraine", (Prostir Idei: Science & Museums), etc.

The university has 1255 scientific and pedagogical staff according to the staff list (July 2023). Among them are 228 doctors of sciences, 189 of which are professors, 767 candidates of sciences (Ukrainian equivalent of PhD) and 564 associate professors.

Nowadays, more than 10,000 full-time and part-time students are being educated at the university. They study in the fields of education, humanities, social and behavioural sciences, journalism, management and administration, natural sciences, mathematics and statistics, information technology, mechanical engineering, electrical engineering, automation and instrumentation, chemical and bioengineering, electronics and telecommunications production and technology, civil security, transport, international relations, public administration and administration of the service sector.

1.1.2 Mission and Vision

According to the self-report, the mission of KhPI is to:

„- implement a wide range of educational services demanded by main specialized markets;

- carry out fundamental and applied scientific research, transferring its results into the educational process, meeting the needs of enterprises and institutions through effective technology of cooperation due to the succession of research traditions and schools;

- promote harmonious development of the personality and provide training for a new generation of professionals who can comprehensively combine research, project and entrepreneurial activities through successful mastering fundamental knowledge, study of engineering, acquirement of engineering creativity and entrepreneurial skills;

- increase the potential of opportunities to preserve their academic essence, originality and individuality. "

As maintained by the self-report,

"the mission is achieved by implementing effective and purposeful educational, scientific, innovative and tutorial activities, ensuring the quality of tertiary education based on the preservation and development of classical university traditions.

The vision of the university: NTU "KhPI" organically combines high-rate modern educational process, research and development, provides scientific and technical support for the transition of the national economy from the current state to the economy 4.0. It has an effective corporate management system capable of training competent human resources in many sectors of the economy, both in Ukraine and abroad. […]"

Regarding the degree of autonomy of the university in relation to research projects, it should be noted that the task of the modern period of development of our HEI is to provide learning conditions, where each student acquires research skills. Methods of research activities have their own specific features. They are highly connected with the individual students' activities. Thus, the condition of the modern pedagogical process is fulfilled - individualisation of learning. In the educational process, in accordance with the Law of Ukraine "On Education", the individual educational trajectory of each interested student of higher education is built.

Research work of students in extracurricular time is one of the most important means of forming highly qualified specialists. It provides:

- Participation in the work of scientific clubs, problem groups, etc.;

- Participation in the implementation of state budget or self-supporting scientific work, conducting research under agreements on creative cooperation with local institutions and enterprises;

- Writing articles, reports and other publications."

1.1.3   Experts' Appraisal

From the experts' point of view, the institutional profile and mission of KhPI are clearly defined. The central quality goals of the university have been described in sufficient detail in the self-report, on the website and in the university's normative documents and regulations.

Apart from a strong focus on the employability of graduates, on internalisation and on co-operative relationships with business and industry, the connection between research and the students' education plays a particularly important part in the university's vision of quality and their mission to provide high quality education. The experts appraise the strong focus on yearly student rankings and competitions, taking into regard their study performance and active engagement in research-oriented project work.

As for the organisational structure, all tasks and responsibilities are clearly defined, and all internal stakeholder groups, including students, participate in decision-making processes, for example when it comes to the design and enhancement of study programmes.

1.2 Internationalisation

Internationalisation is part of the strategy of KhPI. According to the internalisation strategy *"one of the key factors in the transformation of education has been its internationalisation. It is difficult to overestimate the importance of higher education internationalisation for the country in general, and for higher education institutions in particular. This process is growing in the context of international economic, social and cultural integration, and its importance continues to grow. Some of the world's problems can be solved only within the international community, which requires the formation of modern global thinking and intercultural skills in the younger generation. Therefore, the mobility of students, academic and administrative staff has become an important component of the creation of the European Higher Education Area."*

The implementation of the internationalisation strategy is the main task of the international department. The university has closed cooperation agreements with 244 foreign partners from 39 countries (Austria, Bulgaria, Great Britain, Greece, Georgia, Estonia, Spain, Italy, China, Korea, Latvia, Lithuania, Netherlands, Germany, Poland, Romania, Slovakia, Slovenia, USA, France, Czech Republic, Switzerland, Tajikistan and others). There are 213 agreements with foreign HEIs and organisations. In the 2022/2023 academic year, the university worked on 57 international projects, 54 of which were educational and three research projects, students went abroad to study (e.g. ERASMUS + KA1 programme or double degree), to absolve internships and to participate in conferences. Currently, the university runs 15 double degree programmes with universities in Europe and Asia.

The Educational centre "German Technical Faculty" is actively providing a unique opportunity to integrate students into the European educational space through international double degree programmes, credit recognition and academic mobility. The Centre has an educational programme "German-speaking engineer", which includes in-depth study of German.

1.2.1 Bachelor's programmes SE and CSIS

The department Software Engineering and Management Intelligent Technologies (SEMIT), which provides training in the study programmes "Software Engineering" (SE) and "Computer Science and intelligent Systems" (CSIS), actively cooperates with leading European universities, including the Alpine-Adriatic University, the Sorbonne University Paris Nord, the School of Economics and Management in Public Administration in Bratislava etc. This gives the students the opportunity to take part in mobility programmes with these universities and to participate in the dual degree programme with the RWTH Aachen University (Germany).

All students are informed about the available opportunities to participate in academic mobility programmes by the published announcements on the website of the SEMIT Department and through other information sources (Facebook etc.).

Currently, the SEMIT Department is launching a project in the field of international virtual academic cooperation with the University of Applied Sciences Würzburg-Schweinfurt (FHWS, Germany). The partnership programme involves learning how to use online tools and platforms, integrating the curricula of two universities and taking courses at a partner university remotely, implementing various projects. Professors of KhPI took a DEQAR database active part in this project, visiting FHWS to take part in business simulations and workshops devoted to this

project. Other professors were invited for guest lectures (e.g. to Sorbonne University Paris Nord (France), Maribor University (Slovenia), and Bratislava University of Economics and Management (Slovakia)).

Students of KhPI have the opportunity to attend lectures and workshops of invited leading teachers of foreign universities and practitioners (e.g., "Specialized Text Mining" course by Professor Thierry Amon (Sorbonne University Paris); "Introduction to Entrepreneurial Frameworks" by Rick Rasmussen from the University of California, Berkeley (USA); "Modelling and data presentation" by Professor Thierry Amon (Sorbonne University Paris); "Grammarly NLP workshop", etc.). Due to the COVID-19 pandemic, some of the events were conducted online.

1.2.2   Bachelor programmes MOA and BA

The developers of the study programmes MOA and BA have a long-standing relationship with the University of Maribor (Slovenia) and the University of Sapienza in Rome (Italy). Every year students from those study programmes participate in credit mobility. Since February 2022 many students have been accepted for participation in Erasmus+ and other programmes (e.g. Vienna University of Economics and Business (Austria), Otto von Guericke University (Germany), DAAD project "Ukraine digital: Ensuring academic success in times of crisis (2022)": "Capacity Building for Ukraine (CaBifU): Sustainable Securing of Ukrainian teaching and research", Rhine-Waal University of Applied Sciences (Germany)).

Information about possible internships abroad is posted on the official website of the department. Students are supported by the university's Erasmus coordinator.

Apart from the possibility to study abroad, there are options for internalisation at home:

- Lectures by leading professors of foreign universities are organized (e.g. Tamas Bako (Miskolc University, Hungary), Noama Shemtova (Queen Mary University, London, UK), Mariana Prokop (Jan Kochanowski University, Kielce, Poland), Gregor Polančič (University of Maribor, Slovenia) and Rick Rasmunsen (University of Berkeley, USA)) and recently an online lecture and workshop on intercultural communication by Oliver Tettenborn (Dresden International Institute, Zittau).

- Within the course „Strategic Management" students of KhPI cooperate with students of the University of Maribor in the context of joint projects.

- Meetings with students are organized on a regular basis after their return from study periods abroad to encourage other students to take part in the internationalisation process.

- Students have opportunities for online internships abroad.

- In 2023, a group of students cooperated with the San-Pablo University (Spain) within a Collaborative Online International Learning (COIL) project.

- A large number of international students participate in the study programmes; the department of Management organizes regular meetings to encourage intercultural communication.

The university's Innovative Business Incubator provides mentorship by specialists from Norway, USA, UK and other countries. The programme provides financial and technical support for the EU incubator project in Kharkiv.

Incoming students are supported by additional Ukrainian language training courses if necessary. All official regulations and course syllabi are provided both in Ukrainian and in English.

1.2.3   Experts' Appraisal

The topic of internationalisation was discussed with KhPI students, faculty and staff throughout the online talks. The experts are impressed by the level of internalisation reached by the university in general and by the study programmes that are the subject of this assessment report.

The university's internationalisation strategy is clearly implemented in the study programmes , enabling students not only to learn from internationally renowned guest lecturers but to take part in a variety of activities with international partner organisations, both online (e.g. Virtual Mobility and COIL – collaborative online international learning - courses) and offline (e.g. Erasmus).

With one all-English study programme (Business Administration (in English)) and optional all-Englisch learning opportunities in the other study programmes, graduates are particularly well prepared for the national and international labour market.

During the online talks it became very clear that students are encouraged and supported by the teaching staff to study in English and that students are eager to take the multiple opportunities for online or real-life mobility offered to them. With opportunities to cooperate across countries and subject disciplines, as e.g. in the context of the business incubator or COIL project, enabling Virtual Mobility and Exchange, students have a variety of options to enhance their communication skills and other soft skills.

1.3   Teaching Faculty

The university submitted their standards for hiring educational staff, which are in turn based on national standards ("Regulation on electing and hiring academic teaching workers"). For all study programmes under review, detailed information was provided on the teaching staff involved. CVs of the teaching faculty were included in the self-report. Also, the experts had the opportunity to talk to the academic supervisors of the programmes and other members of the faculty during the online site visit.

The university's degree of autonomy in appointing teachers and staff is determined by the "Regulations on the election and hiring of research and teaching workers" which set out the procedure for electing and appointing staff to vacant positions (directors (deans), heads of departments, professors, associate professors, teachers, assistants, etc.).

1.3.1   Bachelor's programmes CSIS and SE

Currently 40 lecturers, among them 9 full professors, are involved in the study programme CSIS and 42 educators/lectures, among them 9 full professors, teach in the study programme SE. All lecturers are employed at the university. With very few exceptions they hold full-time positions.

1.3.2   Bachelor programmes MOA and BA

According to the self-report 46 lecturers (among them 4 full professors) are involved in the study programmes MOA and 36 lecturers (among them 5 full professors) teach in the programme BA. With one exception (one part-time assistant) all lecturers are employed at the university full-time.

1.3.3   Experts' Appraisal

The experts are impressed by the excellent qualifications, the international profile and the open mindset of the teaching faculty they encountered during the digital talks. There is no doubt that the lecturers, as well as the faculty leadership, attach a high importance to the quality of teaching and to their own professional role as teachers. The lecturers' research interests give students the opportunity to take part in a wide range of different research projects.

The university's excellent staff resources are further supplemented by regular visiting national and international lecturers from inside and outside academia and the university ensures that students receive qualified training and supervision during internships and projects.

The experts have come to the conclusion that the university is applying a fair and transparent process for the recruitment and development of the staff. lecturers/professors are appointed according to national regulations. The process includes vacancy competition and involves students' representatives. Training opportunities for the lectures include special training from companies in the region (e.g. companies from Kharkiv IT cluster).

1.4   Learning Environment and Student Support System

The infrastructure, resources and student services provided at KhPI are described in detail in the self-report. In addition, one of the experts visited the university campus prior to the online talks and gave an account of his findings in the experts' preparatory meeting. The facilities visited included classrooms, laboratories, dormitories, shelters, sports and recreation facilities as well as the innovation campus, the start-up hub, the library and the students' palace).

The North-Eastern Regional Centre of the Scientific and Computer Network of Ukraine (URAN) is located on the premises of KhPI. It provides access to the resources of the pan-European research and education network GEANT2. Students have free access to the infrastructure and information resources needed for teaching and research. The university's information infrastructure provides hardware and software support for remote work and access to external academic resources.

KhPI is an academic subscriber to the Microsoft Office 365 basic software and to other MS software products. Teachers and students have personal accounts to access these products. The Automated System for the Training Process Management (ASU NP – Ukrainian abbreviation) has been formed at the University. The "student's online cabinet" and the "teacher's online cabinet" have been introduced and used successfully in distance examination sessions.

The university's library comprises more than 752.000 books, as well as scientific publications and full-text electronic resources. National subscription access to the Web of Science platform;

Scopus, SciVal, ScienceDirect, Springer Nature as well as access to Research4Life programs (Group A), distance learning platforms Coursera and UDEMY are provided.

Student services include a career centre, a medical care centre and socio-psychological service. According to the self-report the needs and interests of students are properly identified through the university's cooperation with student self-government bodies (StudAlliance, Stud Heads and Students' primary trade union organisation). The self-report outlines that among the priority areas of development until 2025 improving the material, technical and financial support of educational, scientific and educational processes is the most important at KhPI.

The university has a "policy of equality" and a "concept of supporting the policy of equality, diversity and inclusiveness" and a "procedure for support (assistance) for persons with disabilities and other low-mobility groups. It was stressed during the online talks that all the modern buildings are equipped with ramps for wheelchairs and in the courses for physical education special groups are formed for students with medical issues.

A merit-based system of study fees is in place, that allows excellent students to study for free.

1.4.1 Experts' Appraisal

The experts have come to the conclusion that the students at KhPI are provided with a very good environment for both online and offline learning. Infrastructure and equipment are state-of-the-art and in good condition. This applies especially to the study programmes CSIS and SE, thanks to the support from IT-companies in the region.

According to the students, student support is well organised and efficient, coming up with solutions to most of students' questions and problems within a day. The highly motivated library staff made a lasting impression with their mission to provide customers with all the literature needed.

It only remains to hope that the only wish students expressed during the online talks – returning to on-site learning – will come true as soon as possible.

1.5 Quality Assurance

The university submitted their policy for quality assurance to the experts ("Regulations on Education Activity Quality Assurance and Higher Education Quality Assurance in the National Technical University Kharkiv Polytechnic Institute"), which can also be found on the KhPI website.

According to the self-report, quality assurance activities include evaluation of the courses, monitoring of the students' workload, graduate surveys and student satisfaction surveys.

Generally, the university maintains a constant monitoring and revises the study programmes each academic year to guarantee that they are aligned with the intended learning outcomes and the needs of students and society.

The following parameters are evaluated:

- the programme content in light of the latest research in related areas;

- changes in society's needs;

- students' workload, achievements, and success;

- the efficiency of students' assessment procedures;

- students' expectations, needs, and satisfaction with the programme;

- the learning environment, the student support system and their achievement of learning outcomes.

Students and employers are being involved in the quality assurance process. The information thus gathered is analysed and the programme is adapted to ensure its relevance. Of any changes either planned or implemented in the process, the interested parties are duly notified. The university publishes the characteristics of the updated programme.

Course evaluation, graduates' surveys, students' satisfaction surveys, etc. are carried out anonymously by Office 365 tools through feedback questionnaires that are analysed to detect risks and adjust the learning process. The surveys' outcomes are reported at meetings and at the Academic Council. Depending on the type of the survey, they are published on the websites of departments, institutes or the quality assurance department.

To estimate the level of the skills and knowledge obtained by students and to analyse the link between teaching quality and teaching outcomes, the Quality Assurance Department organises monitoring and carries out related consulting for faculties/institutes and departments of the university and for expert commissions members. The reports on monitoring procedures fulfilment are analysed. On this basis, proposals for lecturers are made as to improvement of the education process, study programmes, and the content of the delivered subjects.

To form the Quality Management System at NTU "KhPI", the Quality Assurance Department cooperated in 2017 with the management systems certification body of "Kharkiv Regional Science-and-production Centre for Standardizing, Metrology, and Certificating" State enterprise. Since then the university was granted the Certificate for the Quality Management System regarding provision of services in higher education, research, and experimental design and has successfully passed re-certification.

The process of inconsistencies and corrective actions management at the University includes the following consequent operations (stages):

– detection and registration of an inconsistency;

– analysis of the causes of the inconsistency;

– defining the corrective actions;

– carrying out the corrective actions, adjustment;

– verifying the elimination of the inconsistency and its causes;

– analysing the outcomes of the corrective actions.

All the detected inconsistencies are worked on in accordance with the adopted plans for inconsistencies elimination. The outcomes of corrective measures are reflected in the Rector's yearly reports and the KhPI Trade Union Committee reports on fulfilment of the Collective Agreement items.

In certain cases, the reports on corrective measures' outcomes are reported and discussed at the meetings of the Methodological and the Academic Councils of the University.

Every study programme has its so-called guarantor, who provides and controls the quality of educational activities within the educational program. The degree of responsibility and authority for decision-making and other definitions regarding educational programmes are set out in the Regulations on the guarantor of the educational programme of KhPI.

The guarantor of the educational programme is a person who works at the university at the main place of work, has a qualification according to the specialty, degree and / or academic title and a sufficient number of points of professional activity (according to national regulations).

Stakeholders are also involved in decision-making and quality assurance processes. The main stakeholders are:

- the state, which carries out regulatory and legal regulation of the university and the main order for the training of higher education through the distribution of the state order for training;

- regional bodies of state power and bodies of local self-government;

- employers (large industrial enterprises; small and medium enterprises; social organisations) who are interested in competent professionals;

- students, entrants and their parents;

- scientific and pedagogical workers, administrative staff;

- educational institutions of different types and kinds, which are located in the region of the university location;

- various public organisations and associations that are not directly related to the education system (creative unions, research institutions, etc.), but which are interested in social partnership.

In accordance with the development of partnerships with Ukrainian enterprises, entrepreneurs who are potential employers are actively involved in the procedure of revising the training of applicants. A list of enterprises is posted on the university website.

Involvement of employers in the process of annual review of educational programmes and other quality assurance procedures takes place at special extended meetings of departments and meetings with applicants before graduation. Meetings between employers and applicants for higher education are held regularly at the university's graduating departments.

All student selection procedures are contained in the Rules of Admission and other regulations posted on the university website. According to those rules of admission, for a bachelor's degree persons can be admitted who have completed a general secondary education or educational qualification level of a junior specialist (junior bachelor).

The university adheres to the policy of equal opportunities in all areas of its activities. This is reflected in regulations on

- the right of students to freely choose academic disciplines,

- academic mobility of students, research and teaching staff.

- criteria and system of assessment of knowledge and skills and the rating of students.

- the election and employment of scientific and pedagogical workers.

- measures to minimize conflicts of interest and resolve conflicts of interest in case of their occurrence

- support (assistance) of persons with disabilities and other low-mobility groups" etc.

Furthermore, the university has developed and implemented the "Concept of supporting the policy of equality, diversity and inclusiveness" aimed at supporting the policy of equality at NTU "KhPI".

1.5.1   Experts' Appraisal

KhPI makes use of a wide variety of instruments for the continuous monitoring and review of its programmes. Course evaluations, evaluation on students' workload as well as graduates' feedback surveys are conducted on a regular basis.

Apart from written surveys, these also include the analysis of performance indicators as e.g. dropout rates or the number and profile of applicants.

During the online talks the experts got the impression that quality assurance activities at the faculties fulfil their purpose. Students reported that they felt their voice was heard and that teachers were open to their feedback.

Another particularly strong point is the tight network between the university and the employment market. Businesses from the region and beyond accept students for internships, stay in touch with the university on a permanent basis and provide regular feedback on the study programmes in general.

1.6   Transparency and Public Information

The university provided a list of the most important regulations and procedures on university level and for the study programs in questions. All key information on the university, the faculties and the study programmes (intended learning outcomes, profile, contents, course syllabi, etc.) can be found on the KhPI website, almost all of it both in English and in Ukrainian language. Also, there is extensive additional information available for international students, concerning, for example, tuition fees or the admission procedure.

Graduates of the study programmes receive a Diploma Supplement in line with European standards and requirements.

1.6.1   Experts' Appraisal

The experts commend KhPI on the high degree of transparency and easy accessibility of its website. For all enrolled students, maximum transparency regarding course requirements and assessment procedures is warranted. Information for prospective students on content of the study programmes and administrative procedures is provided as well.

However, the experts would suggest simplifying the pathway from the university's main page in English to the study programmes' information pages. In the current structure, it appears to take some knowledge about the university's organisational structure to get to the different chair web pages with links to information about the study programmes, which may be hard to find for prospect students from abroad.

To provide an easily accessible overview about the content of the study programmes, it might be helpful to offer a complete syllabus for each study programme, so that prospect students don't need to access syllabi for each module individually.

The panel also learned during the online talks that the students are encouraged to enrol into the English language study programme "Business Administration (in English)" or the English study groups within the other study programmes if teachers deem their language skills sufficient. The experts acknowledge these measures as very supportive and apparently very successful, but would like to suggest outlining the minimum entrance requirements as regards language proficiency more transparently to prospective students.

2.	Assessment of the Study Programmes

2.1 Common Features and Strategic Dimension of the Programmes

The study programmes implement the two-tier Bologna structure and the European Credit Transfer System (ECTS). All bachelor's programmes comprise four years. The number of ECTS credits for the period of training is 240, with 180 ECTS awarded for obligatory educational components and 60 ECTS for elective educational components. The elective part of the programmes consists of a number of compulsory electives which are selected based on the student's chosen focus area, and free electives to be chosen from the university's general catalogue. (By law, the elective part in the study programmes has to comprise at least 25%).

The allotted number of hours for each discipline includes the main types of classes, specifically lectures (interactive including presentations and discussions), laboratory, practical and seminar classes, consultations and self-study (in the form of studying literature, preparing individual assignments, course projects, online tests, etc.).

The students' knowledge is evaluated both through the continuous assessment in the form of quizzes, question-answer sessions, tests and through the final assessment in the form of an exam or test, specified by the lecturers in the course syllabi and communicated to the students in advance.

Electronic technologies are widely used in students' knowledge evaluation (e.g. online testing using Google forms, Microsoft Office forms, the form of the Ministry of Education and Science of Ukraine). In some disciplines, the evaluation involves an individual task using computer technology and the internet: as test in the form of protection of an individual task, which includes creating a web application, analysis using data from the internet, use of mathematical programming tools Microsoft Excel and Statistica. Study materials, lecture notes, assignments, textbooks, useful links, links to YouTube videos are uploaded to the Google classroom and Office 365 One Note.

The fourth-year students take part in an internship (pre-diploma practice (6 ECTS)) at enterprises with which KhPI has signed corresponding agreements.

Each bachelor's programme ends with the preparation, presentation and defence of the bachelor thesis (6 ECTS).

Students with special needs have the right to study on an individual schedule according to "Regulations on student training on an individual schedule". This applies to students with disabilities, health issues, mothers with young children or pregnant students.

Selection and admission to study is carried out on a competitive basis within the licensed capacity and in accordance with the rules of admission to KhPI.

The numbers of students enrolled in the study programmes are given in the self-report as follows:

Pro- gramme	Total number of students	Foreign stu- dents	Share in the total contingent	Licensed students per year
CSIS	148	7	1.91	90
SE	507	81	6.53	155
MOA	143	5	1.84	76
BA	50	10	0,65	20

The study programmes SE and CSIS of the SEMIT department belong to the set of study programmes in the field of information technology representing 20,7% and 6,03% of full-time bachelor's students in the SEMIT department.

The study programmes MOA and BA of the Department of Management belong to the set of KHPI's set of study programmes in the field of management and administration and represent 22% and 8% of full-time bachelor's students in the department.

Software Engineering (SE) and Computer Science and Intelligent Systems (CSIS)

Both study programmes are carried out by the department Software Engineering and Manage- ment Intelligent Technologies (SEMIT) and have the following features in common:

The programmes include general training components (48 ECTS), special (professional) train- ing components (132 ECTS), selective components (60 ECTS) including profiled sets of disci- plines (33 credits), free choice disciplines of professional (15 ECTS) and general training (12 ECTS).

Innovation Campus

Following a successful pilot project in 2019, the laboratory "Innovation Campus" was intro- duced into the study programmes SE and CSIS as a selective focus area (besides "Software Development and Start-up" and "Research and Development"). After intensive training, sec- ond-year students in the "Innovation Campus" work on real projects. The training is based on innovative pedagogical technologies like self-education, peer-to-peer-learning, gamification, selection of learning tracks, where students have the opportunity to master practical skills of software development and testing as well as develop the soft skills needed for a career in software engineering, computer science and intelligent systems with IT companies or depart- ments.

In 2022 the programme was awarded second place in the Wharton-QS Reimagine Education Regional Award Europe and also received the "Grand Prix Higher Education of Ukraine".

<u>MOA and BA</u>

Both study programmes are carried out by the Department of Management and have the following features in common:

The programmes include general training components (77 ECTS), special (professional) training components (103 ECTS), selective components (60 ECTS) including profiled sets of disciplines (23 credits), free choice disciplines of professional (25 ECTS) and general training (12 ECTS).

Starting from year 3 students choose one of the selective focus areas of the programmes as well as optional professional courses.

<u>Start-up Centre "Spark"</u>

KhPI founded the "Spark" Start-up Centre to enable students of MOA and BA to take part in the implementation of their business own ideas and in the preparation and promotion of technical innovation ideas of students of other specialities. Students then get in touch with potential investors. The main product of "Spark" is a mechanism for commercialisation of intellectual capital.

2.1.1   <u>Experts' Appraisal</u>

The experts commend both departments involved in the study programmes on their innovative teaching methods especially in connection with the innovation campus or the start-up centre, which not only helps students to hone their practical skills but also give them the opportunity to work across disciplines and to acquire soft skills required in business and science.

Another remarkable feature of the study programmes is the freedom of choice given to students, who can not only choose a pathway within their study programmes but can also develop individual profiles of their own choice and thereby enhance their career perspectives.

Graduates of the programmes mentioned during the interviews that the high level of practical knowledge application and particularly the internships had helped them finding suitable employment.

2.2   Intended Learning Outcomes

The university has defined detailed Programme Learning Outcomes (PLOs) for all four programmes (see self-report for the complete lists). These are rooted both in the national standards and the KhPI standards. The PLOs include universal, general professional and professional learning outcomes and cover academic research skills as well as soft skills and professional/management skills.

2.2.1   <u>Bachelor's programme CSIS</u>

According to the self-report *"the educational and professional programme "Computer Science and Intelligent Systems" is focused on the training of specialists capable of conducting theoretical and experimental research in the field of computer science and intelligent control systems; apply mathematical methods and algorithmic principles in modelling, design,*

development, and maintenance of information management technologies; to develop, implement and maintain intelligent systems for analysis and data processing of organisational, technical, natural and socio-economic systems.

The "Computer Science and Intelligent Systems" educational programme aims at forming students' ability to solve complex specialized problems and practical problems in the field of computer science and intelligent management systems or in the process training that involves the use of theories and methods of information technology and is characterized by complexity and uncertainty of conditions. […]

The general didactic approach of the educational and professional programme "Computer Science and Intelligent Systems" is to form students' ability to solve complex specialized problems and practical problems in the field of computer science and intelligent management systems or in the process training that involves the use of theories and methods of information technology and is characterized by complexity and uncertainty of conditions."

According to the self-report graduates of the "Computer Science and Intelligent Systems" programme can also work as professionals in computer systems, programming, other computing (computer science), and in the field of project and programme management according to the National Classification of Occupations.

2.2.2   Bachelor's Programme SE

According to the self-report *"the educational and professional programme "Software Engineering" is focused on the training of specialists capable of setting and solving tasks related to the development, maintenance, and quality assurance of software in combination with a high level of training, formation of the scientific worldview, and providing a broad outlook in the social, humanitarian, fundamental fields, and in the software engineering field.*

The "Software Engineering" educational programme aims at forming students' ability to solve complex specialized problems or practical problems of software engineering, characterized by complexity and uncertainty of conditions, using theories and methods of information technology. […]

The general didactic approach of the educational and professional programme "Software Engineering" is to form students' ability to solve complex specialized problems or practical problems of software engineering, characterized by complexity and uncertainty of conditions, using theories and methods of information technology."

The self-report states that graduates of the "Software Engineering" programme can work as professionals in the fields of computer systems and programming according to the National Classification of Occupations.

2.2.3   Bachelor's Programme MOA

According to the self-report *"the purpose of the educational programme is to train professionals capable of solving practical problems and complex specialised tasks in the sphere of management of organisations, due to developing a system of professional competencies.*

The programme is oriented towards applications and is focused on the corresponding professional areas. EP allows students to get a wide range of knowledge about how to carry out administrative, entrepreneurial, analytical activities in organisations of any form of ownership. Graduates from the MOA programme have the opportunity to build their careers as managers of enterprises, institutions, and organisations at different levels, technical specialists in the fields of management, other specialists in economics and management. […]

The general didactic approach of the EP MOA is to form students' ability to solve complex specialised problems or practical problems of managing organisational environment characterised by complicity and uncertainty of conditions, using theories and methods of management. "

The self-report states that graduates from the programme MOA can work in the following groups of professions (according to the National Classification of Occupations): managers of enterprises, institutions, organisations and their departments; other specialists.; technical specialists in the field of management.

One of the elective focus areas of the study programme MOA is aimed at in-depth training in the field of production management - resource and quality management, production logistics – and develops the skills of the future operations manager. The second elective focus area - "Management in the IT field" is aimed at developing teamwork skills for working on projects and aimed at training the IT manager. Thus, a student can choose the elective focus area in which he or she has the greatest interest and which corresponds to the sphere offering more opportunities for the student's self-realisation.

2.2.4 Bachelors's Programme BA

According to the self-report *"the purpose of the educational programme is to train professionals capable of solving practical problems and complex specialised tasks in the sphere of business management, due to developing a system of professional competencies.*

The educational and professional programme has a practical orientation. The programme's emphasis is on the formation of capabilities for carrying out administrative, entrepreneurial, and analytical activities using modern approaches and methods of management and the historical background of its development, Specialised subject areas include cross-sectoral aspects of the development and making managerial decisions and are aimed at training specialists in the field of business, based on modern results and trends in business management. The programme provides training in English. […]

The integral competency of the programme is the ability to solve complex specialised tasks and practical problems characterised by complexity and uncertainty of conditions in the management sphere or the learning process, which involves the application of theories and methods of social behavioural sciences. The programme develops managerial competencies focused on building robust business. The study of Ukrainian practice took into account the competencies that determine the regional context."

The self-report states that graduates from the programme "BA" can work in the following groups of professions (according to the National Classification of Occupations): managers of

enterprises, institutions, organisations and their departments; other specialists; technical specialists in the field of management.

One of the selective focus areas of BA is "Business Relationship Management". It includes in-depth training in the field of business communications and helps students develop the skills relevant for future public relations managers, content managers, customer service managers, etc. The second selective focus area "Financial support of business" is aimed at helping students develop analytical skills and training future information analysts, financial managers, project managers, etc.

2.2.5 <u>Experts' Appraisal</u>

From the experts' point of view, the intended learning outcomes of all four study programmes are formulated in a very detailed, yet precise manner and fully match the actual profiles of the programmes. The formulated goals of the programmes (which are based on the Ministry of Education's stipulations), demanding as they may be, are adequately reflected in the curricula. The intended learning outcomes are closely aligned with the taxonomies of the Qualifications Framework for the European Higher Education Area. It becomes clear from the descriptions that the programmes include both a thorough theoretical education in the respective subject discipline and a practice-oriented preparation for the demands of the labour market. The talks with the representatives of companies showed that they are very satisfied with the graduates' knowledge and competencies.

2.3 Concept and Structure of the Study Programmes

2.3.1 <u>Software Engineering (SE) and Computer Science and Intelligent Systems (CSIS)</u>

Both programmes include general training components (48 ECTS), special (professional) training components (132 ECTS), selective components (60 ECTS) including a number of elective focus areas (33 credits) and free electives in the field of professional (15 ECTS) and general training (12 ECTS).

The general training (48 ECTS) in both study programmes consists of the modules "Physical education" (semester 1 to 6), "Foreign language for professional purposes" (sem. 1-2) "Foreign language for professional communication" (sem. 6 to 8), "History and Culture of Ukraine" and "Ukrainian language (for professional purposes)" (both sem. 1), "Fundamentals of humanitarian and philosophical knowledge in professional activity" (sem. 2), "Higher mathematics" (sem. 1-2) and "Physics" (sem. 1).

From semester 3 to 7 students choose modules from the profile unit (33 ECTS), among them 3 modules "Foreign language" (sem. 3 to 5). In semester 7 they have the opportunity to choose optional courses from the university's catalogue (15 ECTS).

An internship ("Pre-diploma Practice", (6 ECTS) and the bachelor's thesis ("Certification", 6 ECTS) conclude the study programme in semester 8.

2.3.2   Bachelor's programme CSIS

Apart from the above mentioned modules that the CSIS programme has in common with the bachelor's programme SE, students study the basic professional modules "Algorithmisation and programming", "Fundamentals of CS and AI methods" (both sem. 1), "Algorithmisation and programming", "Operating systems", "Algorithms and data structures", "Introductory practice in the "Innovation campus"" (all in sem. 2), "Probability theory and mathematical statistics", "Mathematical modelling and analysis of systems" (both in sem. 2), "Discrete mathematics" (sem. 4), "Numerical methods" (sem. 5), "Operations research", "Decision making theory" (both sem. 6), "IT project management", "Methods of computational intelligence", "Intelligent data analysis" and "Intelligent control systems and knowledge bases" (all sem. 8).

IT-focused professional modules like "Databases", "Object-oriented programming", "Computer networks", "Business analyses techniques for requirements management", "Fundamentals of web development", "Software architecture and design", "Software quality, quantity, testing and support, "Distributed computed and cloud services", "Fundamentals of cybersecurity and "Project (practice)" have to be absolved in semester 3 to 6.

The university's self-report contains the following survey of the curriculum:
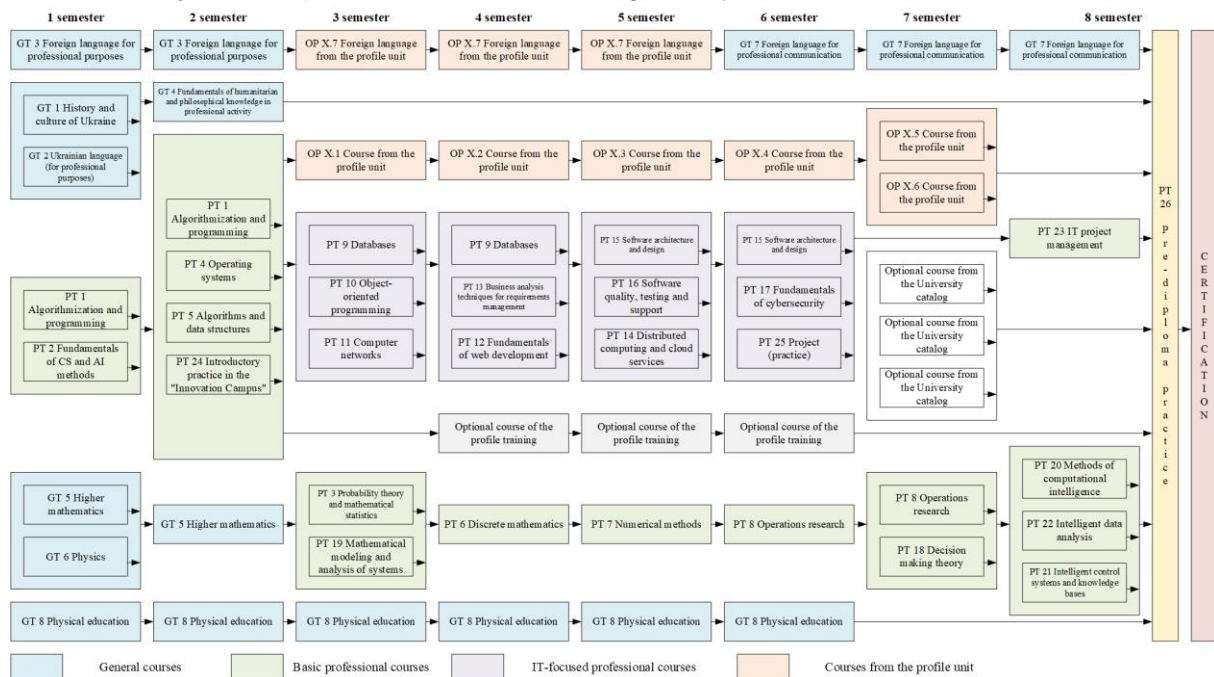

2.3.3   Bachelor's programme SE

Apart from above mentioned modules in common with the bachelor's programme CSIS, students study the basic professional modules "Fundamentals of programming", "Fundamentals of software engineering" (both sem. 1), "Fundamentals of programming", "Computer architecture and operating systems", "Theory of algorithms", "Introductory practice "Innovation campus" (all sem. 2), "Probability theory and mathematical statistics", "Mathematical models and systems analyses" (both sem. 3), "Computer mathematics" (sem. 4 to 6), "Scientific and practical seminar software engineering", "Decision making theory" (both sem. 7), "Fundamentals of software project management", "Scientific and practical seminar software engineering",

"Software modelling and analyses", "Practical seminar on mathematical methods in software engineering", "Artificial intelligence systems" (all sem. 8).

IT-focused professional modules like "Data models and structures", "Object-oriented programming", "Computer networks", "Database design and development", "Software requirements engineering", "Fundamentals of web development", "Software architecture and design", "Software quality, quantity, testing and support, "CI/CD", "Software architecture and design", Fundamentals of cybersecurity and "Project (practice)" have to be concluded in semester 3 to 6.

The university's self-report contains the following survey of the curriculum :
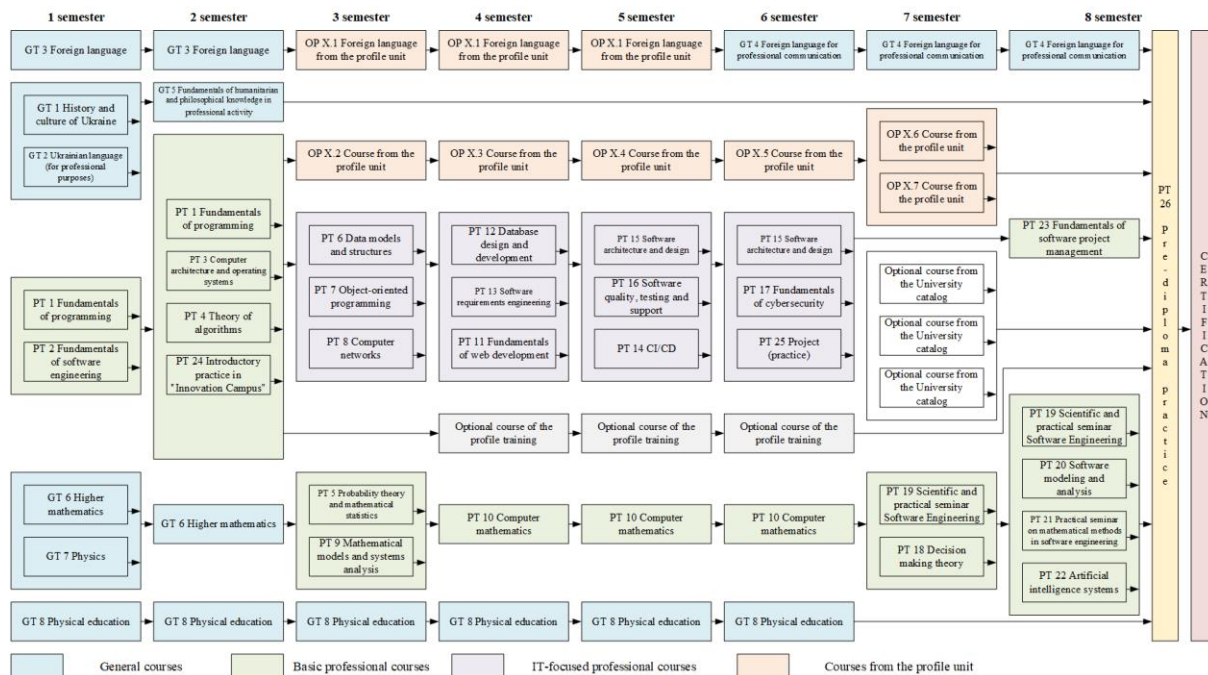
2.3.4 Experts' Appraisal

The experts fully embrace the profile and concept of the study programmes. With a view to the formulated objectives and intended learning outcomes, the curricula are designed in a convincing and plausible way, offering a good balance of mandatory and elective courses and thus enabling student-centred learning. The entrance qualifications of the students are taken into account. The intended different profiles are well represented by the respective modules.

From the experts' point of view, the structure and content of the study programmes are well-considered and convincing. The experts suggest to check if some of the course modules with sizes deviating from the average course module size (e.g. 5 ECTS) recommended by the Bologna system might be aligned to the standard size.

2.3.5 Programmes MOA and BA

The programmes include general training components (77 ECTS), special (professional) training components (103 ECTS), selective components (60 ECTS) including profiled sets of

disciplines (23 ECTS), free choice disciplines of professional (25 ECTS) and general training (12 ECTS).

The general training (77 ECTS) in both study programmes consists of the modules "Foreign language" (sem. 1 to 8), "Physical education" (sem. 1 to 6), "Ukrainian language", "Jurisprudence", "Higher Mathematics", "Economic Theory", "Fundamentals of Entrepreneurship" (all sem. 1), ""Philosophy", "History of Ukraine and Ukrainian Culture", "Economic Statistics", "Microeconomics", "Economic Informatics" (all sem. 2) and "Macroeconomics" (sem. 3).

Professional modules in both study programmes are "Introduction to speciality" (semester 1), "Theory of Organisations" (sem. 2), "Fundaments of Management" (sem. 1-2), "Enterprise Economics", "Marketing", "Finance" (all sem. 3), "Human Resource Management", "International Management", "Accounting", "Operational Management", (all sem. 4), "Self-Management", "Innovation Management", "Fundamentals of Financial Management", "Organisational Behaviour" (all sem. 5), "Information Technologies in Management" (sem. 6), "Performance Management" and "Strategic Management" (both sem. 7).

Starting from year 3 students choose one of the selective focus areas of the programmes as well as optional professional courses. Optional student disciplines of the profiled set of disciplines (23 ECTS) can be chosen in semester 5 to 8, free choice of disciplines (25 ECTS) is possible in the semesters 5 to 7.

Two internships ("Practical Training" (6 ECTS, sem. 6) and "Pre-diploma Practice", (6 ECTS, sem. 8) are obligatory. The bachelor's thesis ("Certification", 6 ECTS) concludes the study programmes in semester 8.

2.3.6   Bachelor's Programme MOA

Apart from above mentioned modules in common with the bachelor's programme BA (general training and professional training) students have to complete the Profile training (23 ECTS, in semester 6 to 8) with the modules "Resource Management or Introduction to Computer Science", "Managerial decisions or Decision making in IT Business", "Crises management or Fundamentals of Project Management", "Logistics or Team management tools" and "Quality management or E-Business".

The survey of the curriculum as shown in the university's self-report looks as follows:

ECTS credit	1 course		2 course		3 course		4 course	
	1 semester	2 semester	3 semester	4 semester	5 semester	6 semester	7 semester	8 semester
1–4	Foreign Language 16							
	Physical education 8						Performance Management 5	Quality management or E-business 6
5–8	Ukrainian Language 3	Theory of Organization 5	Fundamentals of Management 8		Self-management 4	Information Technologies in Management 3		
9–13	Jurisprudence 4	Philosophy 3	Enterprise Economics	Human Resource Management 6	Innovation Management 5	Resource management or Introduction to computer science 5 / Managerial decisions or Decision making in IT business 5	Strategic Management 5	Optional student disciplines of the profile preparation according to list 5
14–17	Higher Mathematics 6	History of Ukraine and Ukrainian culture 4	Macroeconomics 5	International Business 5	Fundamentals of Financial Management 5		Crisis management or Fundamentals of project management 5	Optional student disciplines of the profile preparation according to list 5
18–21	Economic Theory 5	Economic Statistics 5			Organizational Behavior 4	Optional student disciplines of the profile preparation according to list 5	Logistics or Team management tools 4	
22–24	Fundamentals of Entrepreneursh 5	Microeconomics 5	Marketing 5	Accounting 5	Optional student disciplines of the profile preparation according to list 5	Optional student discipline from the general university catalog 4	Optional student disciplines of the profile preparation according to list 5	Pre-graduation Practice 6
25–30	Introduction to Speciality 3	Economic Informatics 5	Finance 6	Operational Management 6	Optional student discipline from the general university catalog 4	Practical Training 6	Optional student discipline from the general university catalog 4	THESIS

	Unit 1.1.General training
	Unit 1.2 Professional training
	Unit 2.1. Profile training
	Unit 2.2 Optional student disciplines of the profile preparation according to list
	Unit 3. Optional student disciplines from the general university catalog of disciplines
	Internship
	Thesis

2.3.7 Bachelor's Programme BA

Apart from above mentioned modules that the BA programme shares with the bachelor's programme MOA (general training and professional training), students have to complete the Profile training (23 ECTS, in semesters 6 to 8) with the modules "Leadership or Fundamentals of Taxation", "Business Communication or Investment", "Organisational Behaviour or Business Valuation", "Supply Chain Management or Resource management" "SMM Management or Risk Management".

The curriculum as a whole is designed as follows:

ECTS credit	1 course		2 course		3 course		4 course	
	1 semester	2 semester	3 semester	4 semester	5 semester	6 semester	7 semester	8 semester
1–4	Foreign Language 16							
3–8	Physical education 8						Performance Management 5	SMM Management or Risk Management 6
5–8	Ukrainian Language 3	Theory of Organization 5	Fundamentals of Management 8	Self-management 4	Information Technologies in Management 3			
9–13	Jurisprudence 4	Philosophy 3	Enterprise Economics	Human Resource Management 6	Innovation Management 5	Leadership or Fundamentals of Taxation 3	Strategic Management 5	Optional student disciplines of the profile preparation according to list 5
14–17	Higher Mathematics 6	History of Ukraine and Ukrainian culture 4	Macroeconomics 5	International Business 5	Fundamentals of Financial Management 5	Business Communications or Investment 5	Organizational Behavior or Business Valuation 5	Optional student disciplines of the profile preparation according to list 5
18–21		Economic Statistics 5			Business Modelling 4	Optional student disciplines of the profile preparation according to list 5	Supply Chain Management or Resource Management 4	
20–24	Economic Theory 5	Microeconomics 5	Marketing 5	Accounting 5	Optional student disciplines of the profile preparation according to list 5	Optional student discipline from the general university catalog 4	Optional student disciplines of the profile preparation according to list 5	Pre-graduation Practice 6
25–30	Fundamentals of Entrepreneursh 5	Economic Informatics 5	Finance 6	Fundamentals of Business Analysis 6	Optional student discipline from the general university catalog 4	Practical Training 6	Optional student discipline from the general university catalog 4	THESIS
	Introduction to Speciality 3							

	Unit 1.1.General training
	Unit 1.2 Professional training
	Unit 2.1. Profile training
	Unit 2.2 Optional student disciplines of the profile preparation according to list
	Unit 3. Optional student disciplines from the general university catalog of disciplines
	Internship
	Thesis

2.3.8   Experts' Appraisal

The experts fully embrace the profile and concept of the study programmes. With a view to the formulated objectives and intended learning outcomes, the curricula are designed in a convincing and plausible way, offering a good balance of mandatory and elective courses and thus enabling student-centred learning. The entrance qualifications of the students are taken into account. The intended different profiles are well represented by the respective modules.

From the experts' point of view, the structure and content of the study programmes are well-considered and convincing. It might be an idea to integrate topics such as sustainability and business model innovation into the study programmes in the future.

The positioning and the size of the course modules are very well adapted to the recommended structure of the Bologna System.

2.4   Methods of Teaching and Student Assessment

2.4.1   Bachelor's programmes CSIS and SE

The study programmes CSIS and SE follow the concept of student-centred teaching and include both self-study and project-based learning. The teaching process involves lectures, laboratory work, practical classes, working in small groups, seminars, discussions, brainstorming, presentations and mixed forms of learning using online learning platforms and "challenge-based learning" in the training laboratory "Innovation Campus" of the SEMIT department.

The contents of the programmes CSIS and SE encourage students to do research beginning with course work, individual tasks and projects, as e.g. in subjects like "Object-oriented programming". "Databases" or "Software Architecture and Design". Students get involved in the work of scientific groups, gain experience in research and participate in the preparation of scientific papers and their presentation at national and international scientific conferences in cooperation with their teachers (e.g. the conference "Information Technologies: Science, Engineering, Technology, Education, Health" (2022 and 2023). Also, students take part in national and international scientific project contests.

In the study programmes CSIS and SE students are continuously assessed by means of written tests, presentations and reports (group work), discussions and surveys (laboratory and practical classes) and assignments. The final assessment in the modules is carried out in the form of a test or examination, depending on the scope of the module as described in the course syllabi.

2.4.2   Bachelor's programme MOA and BE

In the study programmes MOA and BE students are taught in interactive lectures and in practical, seminar and laboratory classes. Students apply their theoretical knowledge in discussions, case studies, problem-based learning, project-based training, teamwork, individual research and computational assignments. Furthermore game-based learning is integrated into the study programmes as an example of innovative active learning resulting in a high degree of student involvement.

According to the self-report regulations to recognise competencies gained in non-formal education are being developed at KhPI. During the pandemic and since the Russian invasion in February 2022 students were given free access of the educational platform Coursera.org enabling them to choose courses that correspond to their educational interests.

As mentioned above (see 1.2. Internationalisation) professors from foreign universities and practicing managers are invited to give lectures.

Students in the study programmes are being exposed to research activities from the first year of their studies. Apart from the mandatory curriculum activities associated with research (e.g. the modules "Organisation Theory" or "Introduction to Speciality") students participate in scientific conferences (as e.g. the conferences "Digital transformation and technologies for sustainable development all branches of modern education, science and practice" 2023, "Information Technologies: Science, Engineering, Technology, Education, Health" 2022 and 2023). They are involved in their teachers' scientific research and are encouraged to publish and to take part in scientific conferences.

In the study programmes MOA and BE the students 'assessment is based on the results of presentations and reports, participation in discussions, performance of individual tasks and tests. The final assessments of the modules are carried out in the form of an examination or a differentiated grading depending on the educational scope of the module.

2.4.3   Experts' Appraisal

The experts have gained the overall impression that the students' assessment is fair, tailored to the students' needs and addresses different competencies. This applies especially to the project work. The online talks have proved the success of the teaching and assessment methods: students and graduates displayed a high level of commitment to their university and obviously possess excellent communication skills. It also became clear that due to their special skill set, the graduates enjoy a high degree of employability.

The high percentage of elective courses (and the option not only to decide on a pre-selected profile but to choose additional courses from the universities catalogue) provides students with a wide range of choices and facilitates student-centered learning.

Teaching and learning methods are up-to-date and motivating, which was emphasized both by students and lecturers.

The expert panel commends KhPI on the swift and adequate shift to online teaching and assessment and on the excellent student support in challenging times.

The final theses that were made available to the expert panel were of very good quality, which is another proof of the high educational standards achieved by the responsible departments at KhPI

III. Appendix

1. Statement of the University in Response to the Expert Report

УКРАЇНА	**UKRAINE**
МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ	**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE**
НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ "ХАРКІВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ"	**NATIONAL TECHNICAL UNIVERSITY "KHARKIV POLYTECHNIC INSTITUTE"**
Україна, 61002, м. Харків, вул. Кирпичова, 2, тел.: +38(057) 707–66–00, факс: +38(057) 707–66–01 E–mail: omsroot@kpi.kharkov.ua	Kyrpychova St., 2, Kharkiv, 61002, Ukraine Tel. +380(57) 706–32–16, Tel/fax +380(57) 707–66–01 E–mail: omsroot@kpi.kharkov.ua

02 November, 2023

Dr. Barbara Haferkorn
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LAND

Dear Dr. Barbara Haferkorn,

We are we are very pleased to work with you all this time as well as with the ZEvA experts in our on-site and online meetings. We greatly appreciate with your helpful recommendations.

We would like to thank ZEvA Experts for their attention and for their valuable comments, shared experience and suggestions on our programmes. Our lecturers, students and graduates are grateful for the friendly and professional communication with the Expert Panel. We are pleased with the positive and inspiring comments. It is a pleasure for us to receive the expert's conclusion that our programmes fully comply with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).

The highly appreciated internationalization of our students inspires us to continue our work in improving and expanding international relations with universities from Europe and other parts of the world, to offer our students more international opportunities (exchange programmes, joint degree programmes, guest lectures, etc.).

We are delighted to receive such positive feedback on the learning environment and student support system. In fact, we and our students would like to return to face-to-face learning. In the meantime, we are doing our best to provide our students with high quality education, support, and quality assurance on our study programs using the online tools available.

We are grateful to the experts for such a valuable suggestion about simplifying the website to make it easier to access the information pages on the courses (Section 1.6.1, page II-15). It is indeed an important point to note as currently most of our communication with prospective students is online. Therefore, we have already started a pilot project to update the website of the Institute of Computer Science and Information Systems to make it more user-friendly and easier to browse.

We also considering the possibility of introducing the following conditions for admission to the program in English (Section 1.6.1, page II-15). The applicant should take an interview in English with the Garantor of the study programme.

We are pleased to receive expert confirmation that the learning outcomes of our programmes are in line with the taxonomies of the Qualifications Framework for the European Higher Education Area. We are also pleased to see that the learning outcomes have been assessed as being in line with both theoretical education and labour-market requirements.

We were pleased with the experts' comments on the well-developed and convincing nature of our programmes. Regarding the structure of the SE and CSIS study programmes, we are also grateful for the experts' suggestion to improve its structure (Section 2.3.4, page II-23) by reviewing the size of course modules in accordance with the recommendations of the Bologna system (e.g., 5 ECTS). However, we would like to point out that each course is worth 3-6 ECTS credits, but some courses in our curricula last more than 1 semester. Therefore, it could be seen that some of our courses exceed the average volume. However, we review and update our programmes on an annual basis and will treat this point as a revision of our curriculum.

Finally, in terms of the experts' assessment of teaching methods and student assessment, we are pleased to see the high regard in which our teaching and assessment skills are held. Indeed, we do our best to provide our students with a decent and modern education, to meet all their requirements (especially including elective courses) and to ensure their employability in the industry. We are constantly working to improve our study programmes, learning infrastructure and collaboration with business.

We believe that the recommendations received from the ZEvA Accreditation Commission will help us to improve the education of our students, expand their skills in international activities, develop the qualification level o and provide a solid basis for quality improvement. It will define the strategic directions of NTU "KhPI" further development and help it in the way of integration into the European educational space.

With best regards,

Prof. Dr. Yevgen Sokol,
Rector of the NTU "KhPI"