MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE VN Karazin Kharkiv National University

Educational And Professional Program

"BUSINESS	ADMINISTRATION''
first (bachelor) le	evel of higher education
Field of knowledge 07 Management and (code, n	d administration name of the field)
Specialty 073 "Management"	
(code	
Specialization (if it's necessary)	(name of the specialization
	APPROVED Academic Council of V. N. Karazin Kharkiv National University 2024, minutes No Entered into force from 2024-2025 a.y. by order of 2024 No Vice-rector for Research and Education

LETTER OF APPROVAL

of the educational-professional program

The educational program was reviewed and approved by:
1. Scientific and Methodical Council of V. N. Karazin Kharkiv National University
minutes No, 2024
Chairman of the Scientific and Methodical Council, Vice-Presiden
for Research and Education (Oleksandr HOLOVKO)
2. Academic Council of Karazin Business School: minutes No, 2024
Chairman of the Academic Council (Volodymyr RODCHENKO)
3. Scientific and Methodical Commission of Karazin Business School:
minutes No, 2024
Chairman of the Scientific
and Methodical Commission (Yuliia PRUS)
4. Department of Management and Administration of Karazin Business School
minutes No, 2024
Head of the Department(Victoria TRETYAK)

Preface

developed by a working group consisting of:

	Name of positions (for part-	Scientific degree, academic								
Name, surname	time - the place of basic	title, which department								
	work, position)	(specialty) assigned the								
Head of the working group -										
guarantor of the educational										
program										
Parkhomenko Olena S.	Associate Professor of the	PhD in Economics, Associate								
	higher institution of	Professor of economy and								
	Management and	organization of entities' activity								
	Administration									
Members of the working group										
Rodchenko, Volodymyr B.	Professor of the higher	-								
	institution of the	of economics and management								
	Management and									
	Administration Department,									
	Head of the Management and									
	Administration Department									
TretyakVictoria P.	Professor of the higher									
	institution of the	Professor of Economics and								
	Management and	management								
	Administration Department									
Rekun Hanna P.	Associate Professor of the	PhD in Economics, Associate								
	higher institution of the	Professor of Economics and								
	Management and	Management								
	Administration Department									

The following are included in the design of the educational program:

Representatives of students of higher education:

Employer representatives:

The requirements are taken into account:

Standard of Higher Education of Ukraine in the field of knowledge 07 Management and administration, specialties: 073 Management of the first (bachelor's) level, level of education: Bachelor. Approved and put into effect by the order of the Ministry of Education and Science of Ukraine dated October 29, 2018 № 1165 (with amendments No. 593 dated 05/28/2021)

1. Profile of the educational program in the specialty 073 "Management," specialization "Business Administration."

	1 - General information
Full name of the higher	Kharkiv National University named after V.N. Karazina
educational institution	Educational and Scientific Institute "Karazin School of Business"
and structural	Educational and Scientific Institute Transaction School of Business
subdivision	
Degree of higher	Bachelor, Bachelor of Management, Business Administration
education and title of	Bachelof, Bachelof of Management, Business Administration
qualification in the	
original language	
The official name of the	Educational professional program "Dusiness Administration"
	Educational-professional program "Business Administration"
educational program	Deshalada dagua sinala
Type of diploma and	Bachelor's degree, single
scope of an educational	Based on complete general education: 240 ECTS credits;
program	Based on a junior specialist (junior bachelor) - 120-180 ECTS credits.
	At least 50% of the educational program aims to provide general and
	special (professional) competencies in the specialty "Management,"
	defined by the Standard of higher education.
Availability of	Ministry of Education and Science of Ukraine, certificate of
accreditation	accreditation
	УД № 21015497 from 18.10.2021, valid until 01.07.2025
Cycle/level	NLC Ukraine - 6 level, FQ-EHEA - the first cycle, EQF-LLL - 6
	level
Prerequisites	Having completed secondary education, diploma of junior specialist
	(young bachelor)
Language (s) teaching	Ukrainian, English
Validity education	4 years
program	
Internet address of	https://kbs.karazin.ua/programs/education/1
permanent placement of	
the description of the	
educational program	
	2 - Purpose of the educational program
Precise and short	provision of fundamental theoretical and practical training of highly
formulation (in one-two	qualified managerial staff, formation of applicants' thorough
sentence) of	knowledge to perform professional taSCs and responsibilities, ability
	those for independent activity in the field of business administration,
	preparation of applicants for further education at higher levels of
	education and scientific work
	Characteristics of the educational program
Subject area (field of	Field of knowledge - 07 «Management and administration »
knowledge, specialty,	Specialty - 073" Management "
specialization (if any)	
Orientation of the	The program is educational and professionally applied.
educational program	The program's structure involves mastering knowledge of modern
	methods in the field of business administration, planning the
	organization's activities, ways of ensuring the effective operation of
	organizations, and HR-management.
The main focus of the	Primary higher education in the specialty "Management," educational
educational program	program "Business Administration." The structure of the program
and specialization	involves mastering knowledge of modern methods in the field of

business administration; planning of the organization's activities;
methods of ensuring the effective operation of organizations; human
resources management; solving problems in uncertain conditions;
planning and management of enterprise resources in accordance with
the goals of sustainable development.

Features of the program

The educational program in business administration is focused on combining theoretical and practical training of students and is the first stage of career development. Provides for modern educational technologies and participation in real projects of commercial and public organizations, authorities, grant programs. The educational program includes practical training and seminars with leading specialists and mentors in the business. During the training, applicants have the opportunity to create and run their startups.

Well-known practitioners are invited to teach professionally oriented disciplines, who actively combine scientific work with practical activities, which allows applicants to acquire scientific and practical knowledge and Skills.

The program provides an opportunity to undergo short-term internships abroad.

Some disciplines are taught in English.

There is a possibility of mobility under the Erasmus + program, and all students participate in special seminars together with students participating in the Erasmus + program.

The program envisages the possibility of training applicants according to individual curricula using elements of dual education.

4 - Suitability of graduates for employment and further training

Suitability for employment

According to the classifier of professions DK 003: 2010, bachelor in management, business administration can engage in the following types of professional activities:

- managers of production and other central departments ((1222-1229));
- heads of functional divisions (1231-1234, 1238-1239);
- managers of small enterprises without management staff (1311-1319);
- managers (managers) of enterprises, institutions, organizations, and their divisions (1411-1496).

Employment can be carried out at enterprises of any organizational and legal form (commercial, non-commercial, state, municipal). Graduates work as managers of the primary level of management or performers of various services of the administration, state and municipal authorities, etc.

According to the International Standard Classification Of Occupations (ISCO-08) bachelor in management, business administration can engage in the following types of professional activities:

- 12 Administrative and Commercial Managers
 - 121 Business Services and Administration Managers
 - 122 Sales, Marketing and Development Managers
- 13 Production and Specialized Services Managers
 - 131 Production Managers in Agriculture, Forestry and Fisheries
- 132 Manufacturing, Mining, Construction and Distribution Managers

	133 Information and Communications Technology Services
	Managers
	134 Professional Services Managers
	14 Hospitality, Retail and Other Services Managers
	141 Hotel and Restaurant Managers
	142 Retail and Wholesale Trade Managers
	143 Other Services Managers 24 Business and Administration Professionals
	24 Business and Administration Professionals 241 Finance Professionals
	241 Finance Professionals 242 Administration Professionals
Further education	243 Sales, Marketing and Public Relations Professionals Opportunity to study according to the program of the second
Further education	(master's) level of higher education. Acquisition of additional
	qualifications in the system of postgraduate education.
	5 - Teaching and assessment
Teaching and learning	Teaching and assessment Teaching and learning are carried out following the student-centered
Teaching and learning	approach and involves a combination of lectures, practical classes
	with solving situational problems and the use of case methods,
	business games, training that develop professional skills and
	teamwork; meetings with well-known representatives of business,
	state, and public activities to exchange positive business and
	professional experience; self-study, problem-oriented training,
	differentiated training, practical training.
Assessment	Written exams, practice, essays, presentations, project work,
1 - 200	bachelor's thesis.
	6 - Program competencies
Integral competence	The ability to solve complex, specialized problems and practical
•	problems characterized by complexity and uncertainty of conditions
	in management or the learning process involves applying theories and
	methods of social and behavioral sciences.
General Competences	1. The ability to exercise their rights and responsibilities as a member
(GC)	of society, to realize the values of civil (democratic) society and the
	need for its sustainable development, the rule of law, human and civil
	rights, and freedoms in Ukraine.
	2. Ability to preserve and multiply moral, cultural, scientific values
	and increase the achievements of society based on understanding the
	history and patterns of development of the subject area, its place in
	the general system of knowledge about nature and culture, and the
	development of society, technology and technology, use different
	types and forms physical activity for active recreation and a healthy
	lifestyle.
	3. Ability to abstract thinking, analysis, synthesis.
	4. Ability to apply knowledge in practical situations
	5. Knowledge and understanding of the subject area and
	understanding of the professional activity.
	6. Ability to communicate in the state language both orally and in
	writing.
	7. Ability to communicate in a foreign language.
	8. Skills in the use of information and communication technologies.
	9. The ability to learn and master modern knowledge.
	10. Ability to research the appropriate level.
	11. Ability to adapt and act in a new situation.
	12. Ability to generate new ideas (creativity).
	13. Appreciation and respect for diversity and multiculturalism.

	T									
	14. Ability to work in an international context.									
	15. Ability to act based on ethical considerations (motives).									
	Competencies defined by the university:									
	16. Ability to manage changes in conditions of uncertainty on a									
	personal and professional level.									
	17. Ability to recognize and solve problems in conditions of									
	uncertainty									
Special Competences	1. The ability to identify and describe the characteristics of an									
(SC)	organization.									
	2. The ability to analyze the organization's results and compare them									
	with the factors of the external and internal environment.									
	3. The ability to determine the prospects for the development of the									
	organization.									
	4. Ability to determine the functional areas of the organization and the relationships between them.									
	*									
	5. Ability to manage the organization and its departments through the implementation of management functions,									
	6. Ability to act socially responsible and consciously.									
	7. Ability to choose and use modern management tools.									
	8. Ability to plan the activities of the organization and manage time.									
	9. Ability to work in a team and establish interpersonal interaction in									
	solving professional problems.									
	10. Ability to evaluate the work performed, ensure their quality and									
	motivate the organization's staff.									
	11. Ability to create and organize effective communications in the									
	management process.									
	12. Ability to analyze and structure the problems of the organization									
	to form sound decisions.									
	13. Understand the principles and norms of law and use them in									
	professional activities.									
	14. Understand the principles of psychology and use them in									
	professional activities.									
	15. Ability to form and demonstrate leadership qualities and									
	behavioral Skills.									
	16. Ability to manage material, financial and human resources in the									
	enterprise.									
	17. Ability to analyze theories, concepts, programs, modern models,									
	facts, events that determine the interaction mechanisms between the									
	state, business, and society.									
	18. The ability to use critical thinking techniques in the process of									
	making and implementing management decisions in conditions of									
	uncertainty.									
	19. Ability to implement the organization's activities following									
	sustainable development goals at all stages of the value chain.									
DI O	7 - Program learning outcomes (PLO)									
PLO	1. To know their rights and responsibilities as members of society, to									
	realize the values of civil society, the rule of law, human and civil									
	rights, and freedoms in Ukraine.									
	2. Preserve moral, cultural, scientific values and increase society's									
	achievements, use different types and forms of physical activity to lead a healthy lifestyle.									
	· · · · · · · · · · · · · · · · · · ·									
	3. Demonstrate knowledge of theories, methods, and functions of									
	management, modern concepts of leadership.									

- 4. Demonstrate Skills to identify problems and justify management decisions.
- 5. Describe the content of the functional areas of the organization.
- 6. Identify search skills, collection and analysis of information, calculation of indicators to justify management decisions.
- 7. Demonstrate organizational design Skills.
- 8. Apply management methods to ensure the effectiveness of the organization.
- 9. Demonstrate skills of interaction, leadership, teamwork.
- 10. Have the skills to justify practical tools to motivate the organization's staff.
- 11. Demonstrate the skills of situation analysis and communication in various areas of the organization.
- 12. Assess the legal, social, and economic consequences of the organization.
- 13. Communicate orally and in writing in the state and foreign languages.
- 14. Identify the causes of stress, adapt yourself and team members to a stressful situation, find ways to neutralize it.
- 15. Demonstrate the ability to act socially responsibly and consciously based on ethical considerations (motives), respect for diversity, and interculturalism.
- 16. Demonstrate independent work skills, flexible thinking, openness to new knowledge, and being critical and self-critical.
- 17. Perform research individually and/or in a group under the guidance of a leader.
- 18. Demonstrate the ability to effectively manage material, financial and human resources in the company.
- 19. Analyze theories, concepts, programs, modern models, facts, events that determine the mechanisms of interaction between state, business and society and take into account their impact on the organization.
- 20. Demonstrate the ability to organize the organization following sustainable development goals at all stages of the value chain.

8 - Resource support for the implementation of the program

Specific characteristics of personnel support

The implementation of educational activities within the framework of the OP is carried out by specialists, 96% of whom have a scientific degree, including 86% - candidates of sciences, associate professors; 10% — doctors of economic sciences, professors; 32% have experience in practical activities according to the program profile. Business representatives, local self-government bodies, and other stakeholders are actively involved in the training process.

Specific characteristics of material and technical support

Material and technical support for the implementation of the Programm is carried out on the basis of:

- a media room equipped with a PC, a projector, wireless and wired microphones, a projector screen, wall speakers, a sound amplifier and a wired camera;
- classrooms equipped with PCs, projectors, wireless microphones,
 projector screens, wall speakers, sound amplifiers and wired cameras;
 computer classes equipped with PCs, laptops with available Internet access channels;
- in all premises where the educational process is carried out, there is access to Wi-Fi Internet.

Specific characteristics of information and educational and methodological support

For the Programm information support:

- access to the electronic library of the Central Bank of Ukraine is provided, which includes an electronic catalog with electronic ordering (over 1,200,000 copies); full-text databases of magazines of foreign and domestic publishing houses; publication on electronic media in the funds of the Central Bank;
- there are reading rooms for visitors of specialty 073 "Management" within the Central National Bank, designed for 155 seats;
- the library is stocked with domestic and foreign specialist periodicals of the relevant or related profile, including in electronic form;
- free access to full-text databases of journals of foreign and domestic publishers is provided: SCOPUS, Web of Science, EBSCO, Royal Society of Chemistry, Oxford University Press, Cambridge University Press, SpringerNature (journals*) CUL Online, Springer Link;

more than 20 names of professional publications are at the disposal of applicants;

- there is an official website of the educational institution, which contains basic information about its activities, and access to the Moodle remote platform is provided;
- there is a website of the Karazin School of Business, which provides detailed information about the educational program (curriculums, work programs of academic disciplines), the department responsible for its implementation, and also provides information about the results of the public discussion;
- in the case of the occurrence / prolongation of force majeure (including martial law, the introduction of strict quarantine restrictions in the conditions of a pandemic, with a ban on visiting higher education institutions), applicants are given access to a personal office, from which they can access the schedule of classes, the results of the current and semester control; classes are held using Google Meet, Zoom, Cisco Webex, etc. platforms.

For educational and methodological support of the Program:

- the educational and professional program, curricula, according to which higher education applicants are trained, were approved in the established order;
- working programs for all educational disciplines of the curriculum have been developed, which include: the educational discipline program, planned learning outcomes, the procedure for evaluating learning outcomes, recommended literature (main, secondary), information resources on the Internet;
- developed programs for all types of practical training for each educational program;
- access to methodical materials for the final certification of higher education applicants was provided.

	9 - Academic mobility											
National credit mobility	According to the programs of academic mobility within the programs											
-	and / or agreements between VN. Karazin Kharkiv National											
	University and higher education institutions of Ukraine.											
International credit	Erasmus + 107 international cooperation agreements have been											
mobility	concluded with European higher education institutions, namely:											
	 Université de Nice -Sophia Antipolis; 											
	 Universidad de Murcia; 											
	– Università di Foggia;											
	Cordoba University;											
	 Universidad Católica de Murcia; 											
	 Instituto Politecnico de Braganca; 											
	University of Vaasa, Finland;Coruna University;											
· ·												
- Tuscia University;												
	Masaryk University;İzmir Kâtip Çelebi Üniversitesi;											
	1											
	 University of Economy in Bydgoszcz etc. 											
	as well as bilateral agreements with:											
	- SILC Business School, Shanghai University;											
	 Kirklareli University, Turkey; 											
	 Istanbul University, Turkey; 											
	 Virginia International University, USA; 											
	 University of Vaasa, Finland; 											
	 Universidad de Sevilla; 											
	Cordoba University;											
	 Business School - Ilia State University; 											
	 Univerzita Palackého v Olomouci; 											
	Masaryk University;											
	 SolBridge International School of Business; 											
	 Netherlands Business Academy; 											
	 Izmir University etc. 											
Training of foreign	Training courses with English and Ukrainian languages are provided											
applicants for higher	for foreign students.											
education												

$2. \ \ \, \textbf{List of components of educational-professional / scientific program and their logical sequence}$

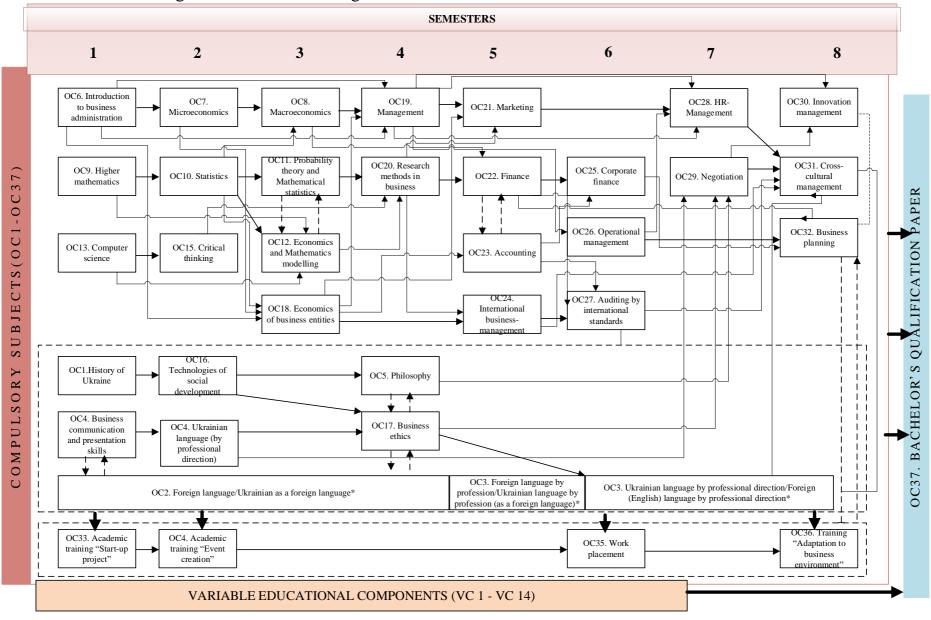
2.1. List of the Program components

Code	Code Components of the educational program (academic disciplines, course projects (works), practices, qualification work)							
1	2	3	4					
	Compulsory disciplines (obligatory components	– OC)						
	General training cycle							
OC1.	History of Ukraine	3	Exam					
OC 2.	Foreign language/Ukrainian as a foreign		Credit, exam					
	language*	9						

Code	Components of the educational program	Number	Form of the
	(academic disciplines, course projects	of	final control
	(works), practices, qualification work)	credits	
OC 3.	Foreign language by profession/Ukrainian		Credit
	language by profession (as a foreign language)*	10	
OC 4.	Business communication and presentation skills	4	Credit
OC 5.	Philosophy	3	Exam
OC 6.	Introduction to business administration	4	Exam
OC 7.	Microeconomics	5	Exam
OC 8.	Macroeconomics	5	Exam
OC 9.	Higher mathematics	5	Exam
OC 10.	Statistics	5	Exam
OC 11.	Probability theory and Mathematical statistics	3	Exam
OC 12.	Economics and Mathematics modelling	4	Exam
OC13.	Computer science	5	Exam
OC 14.	Ukrainian language by professional		Credit
	direction/Foreign (English) language by		
	professional direction*	5	
OC 15	Technologies of social development	5	Credit
	Professional training cycle		
OC 16.	Critical thinking	5	Credit
OC 17.	Business ethics	5	Exam
OC 18.	Economics of business entities	5	Exam
OC 19.	Management	5	Exam
OC 20.	Research methods in business	5	Credit
OC 21.	Marketing	5	Exam
OC 22.	Finance	5	Exam
OC 23.	Accounting	5	Credit
OC 24.	International business-management	5	Exam
OC 25.	Corporate finance	4	Exam
OC 26.	Operational management	4	Exam
OC 27.	Auditing by international standards	4	Exam
OC 28.	HR-Management	4	Exam
OC 29.	Negotiation Negotiation	4	Exam
OC 30.	Innovation management	4	Exam
OC 30.	Cross-cultural management	3	Exam
OC 31.	Business planning	4	Exam
OC 32.	Academic training "Start-up project"	5	Exam
OC 34.	* ***	5	Credit
OC 34.	Academic training "Event creation" Training "Adaptation to business environment"	6	Credit
OC 36.	Internship	5	Credit
			Credit
OC 37. Total obligator	Bachelor's qualification paper	8	180
Total obligator	y components: Elective disciplines (variable component – '	VC)	100
	General training cycle	, <i>O</i> ,	
VC1	Elective inter-faculty discipline	3	Credit
VC2	Elective inter-faculty discipline Elective inter-faculty discipline	3	Credit
VC3	Elective inter-faculty discipline Elective inter-faculty discipline	3	Credit
VC4	Elective inter-faculty discipline Elective inter-faculty discipline	3	Credit
VC5	Variable component 5	5	Credit
VC5 VC6	Variable component 6	5	Credit
VC6 VC7	Variable component 7	5	Credit
VC/	variable component /	J	Cicuit

Code	Components of the educational program (academic disciplines, course projects (works), practices, qualification work)	Number of credits	Form of the final control			
VC8	Variable component 8	4	Credit			
700	Professional training cycle		Credit			
VC9	Variable component 9	4	Credit			
VC10	Variable component 10	5	Credit			
VC11	Variable component 11	5	Credit			
VC12	Variable component 12	5	Credit			
VC13	Variable component 13	5	Credit			
VC14	Variable component 14	5	Credit			
Total elective co	Total elective components:					
TOTAL VOLU	ME OF THE EDUCATIONAL PROGRAM		240			

2.2. Structural and logical scheme of the Program



3. Form of attestation of applicants for higher education

Attestation of graduates of the educational program of specialty 073 "Management" is carried out in the form of protection of the bachelor's degree. It ends with issuing a standard document on awarding him a bachelor's degree with the qualification "Bachelor of Management, Business Administration".

Qualification work should involve solving a complex, specialized task or practical problem in management, characterized by complexity and uncertainty of conditions, using theories and methods of economics.

In qualification work there should be no academic plagiarism, fabricated references, careless citations, etc. Qualification work is checked for borrowings from texts present in University databases, databases of other higher education institutions, education and the Internet using the anti-plagiarism system.

Defense of the qualification work is carried out openly and publicly.

The abstract of the qualification work should be published on the official website of the Karazin Business School, on the basis of which this educational program is implemented.

4. Matrix of correspondence of program competencies to components of the educational program

	0C1	0C2	OC3	0C4	OC5	920	OC7	820	620	OC10	OC11	OC12	OC13	OC14	OC15	OC16	OC17	0C18	0C19	OC20	0C21	OC22	OC23	OC24	OC25	OC26	OC27	OC28	OC29	OC30	OC31	OC32	0C33	OC34	OC35	OC36	OC37
GC 1	+				+													+																			
GC 2 GC	+				+	+	+	+										+		+									+		+					+	
GC 3		+	+		+		+	+	+	+	+	+	+		+	+	+		+			+				+	+			+							
GC 4				+		+	+		+	+		+	+	+			+		+	+		+	+	+	+	+	+	+	+			+	+	+	+	+	+
GC 5				+		+											+			+						+	+		+	+	+	+	+	+	+	+	+
GC 6				+		+								+				+		+								+	+		+			+	+	+	+
GC 7		+	+	+																											+					+	
GC 8				+								+	+		+				+		+	+	+	+				+						+	+	+	
GC 9			+													+			+														+	+	+	+	+
GC											+	+	+						+				+	+	+							+					
10 GC												+				+												+		+		+	+	+	+	+	
11 GC 12																+					+		+							+							
12 GC 13																								+							+						
13 GC 14		+	+	+														+						+	+						+						
14 GC 15				+	+													+		+									+		+						
15 GC 16																			+		+																
GC 17						+										+																	+				

Continuation of the Table

	0C1	OC2	OC3	OC4	OC5	920	0C7	80C8	0C9	OC10	0C11	OC12	OC13	OC14	OC15	OC16	OC17	OC18	OC19	OC20	OC21	OC22	OC23	OC24	OC25	OC26	OC27	OC28	OC29	OC30	0C31	OC32	OC33	OC34	OC35	OC36	OC37
SC1						+											+			+						+	+								+		+
SC2							+			+	+	+			+		+					+	+		+	+	+		+			+			+		+
SC3						+																	+				+			+		+			+		+
SC4																	+			+		+					+										
SC5																				+			+			+	+		+	+							+
SC6															+			+											+								
SC7						+			+	+			+						+	+			+	+		+	+		+			+			+	+	+
SC8																				+							+		+			+					+
SC9				+										+				+		+								+	+		+			+	+	+	
SC10																													+								
SC11				+										+				+					+				+	+		+						+	
SC12												+				+				+							+										
SC13																						+			+												
SC14				+												+		+										+			+						
SC15				+									•				-	+	•	+								+	•								
SC16							+					+	•				+		_	+	+	+	+				+		+			+			+		+
SC17						+		+							+		+							+	+	+										+	
SC18					+				+	+	+					+			+								+					+			+	+	+
SC19															+		+	+		+										+		+	+		+	+	+

5. Matrix of providing program learning outcomes (PLO) with the relevant components of the educational program

2.1							<u> </u>	· • • •								~ (-	`	<i>- ,</i> .			<u> </u>														<u> </u>	uiii	
	OC1	OC2	OC3	0C4	OC5	920	OC7	820	620	OC10	OC11	OC12	OC13	OC14	OC15	OC16	OC17	OC18	OC19	OC20	OC21	OC22	OC23	OC24	OC25	OC26	OC27	OC28	OC29	OC30	OC31	OC32	OC33	OC34	OC35	OC36	OC37
PLO1	+				+										+			+																			
PLO2					+	+	+	+							+			+		+									+		+					+	
PLO3			+	+		+	+				+	+	+			+	+		+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PLO4				+		+	+					+	+			+	+		+	+		+	+	+	+	+	+	+	+	+		+	+	+	+	+	+
PLO5				+		+																															
PLO6				+			+			+	+	+	+		+	+	+		+	+		+	+	+	+	+	+	+	+			+		+	+	+	+
PLO7						+	+			+	+	+	+		+	+	+			+		+	+	+	+	+	+					+			+		+
PLO8				+		+	+			+	+	+			+		+	+	+	+		+	+		+	+	+	+	+	+	+	+			+	+	+
PLO9				+														+		+		+	+		+	+	+	+	+	+							+
PLO1 0						+						+				+	+		+	+		+	+	+		+	+	+	+	+		+	+	+	+	+	+
PLO1		+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+		+	+	+		+				+	+	+	
PLO1			+	+		+		+							+	+		+	+	+			+	+		+	+	+	+		+	+			+	+	+
PLO1		+	+	+		+								+				+		+			+	+	+		+	+	+		+			+	+	+	+
PLO1				+	+										+			+		+		+			+		+	+	+		+						
PLO1 5				+												+		+		+				+				+	+		+						
PLO1			+									+				+			+									+				+	+	+	+	+	+
PLO1		+	+	+	+		+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+			+	+	+	+
PLO1 8						+		+							+		+			+			+	+	+	+	+		+	+						+	+
PLO1	+				+	+		+							+		+	+						+	+	+			+							+	
PLO2	+				+	+	+	+							+		+	+		+									+	+	+	+	+		+	+	+