

3. Study Programme Land Management and Cadastre
Director of the study programme: Bohdan R. Sossa
3.1. PROFILE OF THE STUDY PROGRAMME

1 - GENERAL INFORMATION	
Full name of IHE and structural unit	State University of Trade and Economics, Faculty of Technologies and Business, Department of Engineering and Land Management
Academic degree and qualification title in the original	Second (Master's degree) cycle of higher education Qualification – Master of Geodesy and Land Management
Field of knowledge	G Engineering, Manufacturing and Construction
Speciality	G18 Geodesy and Land Management
Study programme title	Land Management and Cadastre
Restrictions on modes of study	No restrictions are in place
Standards conformity	Conforms to the Higher Education Standard of the Ministry of Education and Science of Ukraine (Order No. 835 of 10.07.2023)
Qualification title (degree), programme credits and duration	Master's degree, single. Study programme credits – 90 ECTS credits. Standard training period – 1 year 4 months
Accreditation status	Certificate of Accreditation No.19320 of 05.12.2025 issued by the National Agency for Higher Education Quality Assurance, valid until 01.07.2031
Cycle/Level	NQF of Ukraine – level 7, FQ-EHEA – second cycle, EQF-LLL – level 7
Academic backgrounds	Bachelor's degree (NQF – level 6) or a higher level
Language(s) of instruction	Ukrainian
Study programme duration	Valid till the approval of a new study programme edition
Study programme link	https://knute.edu.ua/
2 - STUDY PROGRAMME AIM	
Training highly qualified specialists with extensive knowledge and professional competencies in the field of land management and cadastre, ensuring their mastery of a comprehensive approach to land resource management and developing practical skills and competences to solve complex applied and/or innovative problems in land management and cadastre, as well as the ability to conduct research in the field of geodesy and land management and related fields.	
3 - STUDY PROGRAMME DESCRIPTION	
<i>Subject area</i>	

Object of study and/or activities: theories, methods, and technologies for creating and developing geospatial data infrastructure; topographic, geodetic, cartographic, and cadastral activities; land management, monitoring, and assessment. Aims of training: acquiring the ability to solve complex applied problems, particularly those of a research and/or innovative nature in the field of geodesy and land management. Theoretical content of the field of study: principles, concepts and theories of building and developing geospatial data infrastructure; topographic, geodetic, cartographic, and cadastral activities; land management, monitoring, and assessment in interdisciplinary contexts. Methods, techniques and technologies: analytical and experimental methods and techniques for researching the subject area, digital and geoinformation technologies. Tools and equipment: devices, equipment, hardware, software, information support, tools.
<i>Study programme orientation</i>
It is a study, professional, applied and research programme which provides a comprehensive approach to developing professional competences through a combination of theoretical training and practical learning. Its structure is focused on acquiring advanced knowledge and skills in the field of territorial and spatial planning, maintaining the state land cadastre, and monitoring land through the use of modern GIS technologies, as well as on developing the ability to make optimal management decisions regarding the use and protection of land resources.
<i>Study programme main focus</i>
The program focuses on training highly qualified specialists who are able to combine theoretical knowledge and practical skills in the field of land management, apply modern software and geodetic instruments to solve professional tasks, effectively use organisational and management tools in the field of land management and cadastre, and integrate the latest technologies and methodological approaches into professional and research activities. Keywords: land management, cadastre, land resource management, geodesy, geoinformation technologies, intelligent data analytics, environmental legislation.
<i>Programme features</i>
The study programme is based on a student-centred approach and combines fundamental training in foreign languages, law, and research methodology with applied competencies in land management, cadastre, land resource management, land monitoring, and the use of modern GIS technologies, providing comprehensive practical training and a focus on scientific development.
4 - EMPLOYABILITY AND FURTHER LEARNING
<i>Employability</i>
Employment in positions according to the National Classifier of Ukraine: the DK 003:2010 Classification of occupations, which require higher education in the speciality 193 Geodesy and Land Management, in particular: 2131.2 (Geo) Database administrator; 2131.2 (Geo) System administrator; 2148.2 Land surveying engineer; 2148.2 Geodesist; 2148.2 Cartographer; 2148.2 Cadastral topographer;

2148.2 Environmental geosystem monitoring specialist;
 2148.2 Earth remote sensing and aerospace monitoring specialist;
 2149.2 Real estate inventory engineer;
 2213.2 Ecosystems restoration engineer;
 2213.2 Natural resources management engineer;
 Positions in state land management, geodetic, and construction institutions, local government bodies, private organisations in the field of geodesy, land management, construction, and architecture; educational institutions of the relevant field, scientific institutions, and research centres. Professional certification opportunities.

Further learning

Obtaining a third (PhD) level of higher education. Acquiring additional qualifications in the adult education system.

5 - TRAINING AND ASSESSMENT

Teaching and learning

Student-centred training, self-study, problem-oriented learning.
 Lectures, practical classes in specialised laboratories, independent work based on textbooks, teaching aids, and lecture notes, learning through practical training and professional internships, tutorials, and preparation for the defence of a qualification paper.

Assessment

The assessment of students' learning outcomes is carried out in accordance with 'The Regulations on Assessment of the SUTE Undergraduate and Postgraduate Students' Learning Outcomes' and provides for the following control measures: current and final assessment, and certification.

The current assessment takes place during practical/laboratory classes and is based on the results of independent work assignments. It suggests assessing students' theoretical knowledge during seminars and their practical skills acquired while completing laboratory/practical assignments.

The final assessment comprises control measures that involve establishing the conformity (measuring, assessing) of the learning outcomes achieved by a student with the requirements of the study programme in terms of the relevant educational component, which is carried out at the university in the form of a credit and an exam.

The learning outcomes of SUTE students are assessed on a 100-point scale, where: 60-100 points are the learning outcomes entitling a student to obtain ECTS credits; 0-59 points are unsatisfactory learning outcomes not entitling a student to obtain ECTS credits.

6 - PROGRAMME COMPETENCES

Integral competence

Ability to solve applied, research, and/or innovative problems in the field of geodesy and land management.

Transferable competences (TC)

TC1	Ability to identify, formulate, and solve problems.
TC2	Ability to communicate in a foreign language.
TC3	Ability to develop and manage projects.
TC4	Ability to generate new ideas (creativity).
TC5	Ability to adapt to and act in new situations.
TC6	Commitment to environmental protection.

<i>Special (professional) competences (SC)</i>	
SC1	Ability to plan and carry out theoretical and/or applied research, create new knowledge and technologies in the field of geodesy and land management.
SC2	Ability to critically analyse current issues and prospective areas of development in geodesy, land management, and related fields of knowledge.
SC3	Ability to effectively apply theories, principles, and technologies of mathematics, natural sciences, technical sciences, social sciences, and economic sciences in solving complex problems of geodesy and land management.
SC4	Ability to search for necessary information, select and apply modern methods of processing, analysing, evaluating, and publishing data, including geospatial data and metadata, while solving complex problems in geodesy and land management.
SC5	Ability to justify and evaluate methods of surveying, exploration, testing, diagnostics, and monitoring of geodesy and land management objects.
SC6	Ability to develop and implement projects in the field of geodesy and land management, as well as related interdisciplinary areas, considering technical, economic, social, legal, and environmental aspects.
SC7	Ability to organise activities and effectively manage complex and/or unpredictable work processes in the field of geodesy and land management.
SC8	Ability to protect intellectual property, commercialise the results of research, invention, and design activities.
SC9	Ability to develop and apply new strategic approaches to solving problems in the field of geodesy and land management.
SC10	<i>Ability to analyse regulatory acts of nature conservation legislation and environmental law in the field of geodesy and land management.</i>
7 - PROGRAMME LEARNING OUTCOMES	
LO1	Possess specialised conceptual knowledge, including the latest scientific achievements in the field of geodesy and land management, sufficient to conduct research and implement innovations.
LO2	Communicate confidently, both orally and in writing, in the national and foreign languages on issues related to professional activities, research, and innovation in the field of geodesy and land management.
LO3	Make effective decisions regarding the resolution of applied, research, and/or innovative tasks in the field of geodesy and land management, analyse alternatives, make forecasts, and assess risks, particularly in conditions of insufficient and/or contradictory information and ambiguous requirements.
LO4	Build and explore conceptual, mathematical, and computer models of objects and processes, and apply them in order to create innovations in the field of geodesy and land management.
LO5	Create and develop geospatial data infrastructures, process and publish geospatial data and metadata related to geodesy and land management.
PO6	Cooperate with customers and contractors, prepare tender proposals in the field of geodesy and land management, and conclude relevant contracts.

PO7	Justify the choice of equipment, technologies, and processes for production management and research in the field of geodesy, land management, and adjacent fields.
PO8	Develop and manage projects considering technological conditions and production management requirements in the field of geodesy and land management and related interdisciplinary areas, with due regard to economic, social, environmental, and legal aspects; prepare technical specifications, project funding applications, carry out work planning, plan and manage resources.
PO9	Develop and implement measures for operational and long-term management, forecasting, and planning of geodetic, cartographic, and land management activities, given the available resources and time constraints.
PO10	Protect intellectual property, commercialise the results of scientific research, invention, and design activities.
PO11	Perform a comprehensive analysis and assessment of the state of geodesy and land management objects and evaluate the consequences of the implementation of practical measures.
PO12	Convey clearly and unambiguously their knowledge, conclusions, and arguments in the field of geodesy and land management to specialists and non-specialists, including students.
PO13	Conduct surveys, tests, diagnostics, and monitoring of geodesy and land management objects, develop land protection measures, and assess their consequences.
PO14	Analyse critically current issues and prospective areas of development in geodesy and land management, as well as related interdisciplinary issues.
PO15	<i>Apply nature conservation and environmental legislation to solve problems in the field of geodesy and land management</i>

8 - RESOURCE SUPPORT FOR PROGRAMME IMPLEMENTATION

Academic staff

The academic staff are fully compliant with Licensing requirements for carrying out educational activities. To conduct lectures and teach practical classes in academic disciplines, scientific and pedagogical staff – PhDs and doctors of science – with recognised expertise and experience in research, management, and innovation are involved. All the academic staff members undergo advanced training and professional development courses every five years.

Facilities

The facilities are fully compliant with Licensing requirements for carrying out educational activities. The material and technical support is based on the following specialized laboratories: Geodesy and Land Management Laboratory, GIS Technology Laboratory fitted with modern instruments and equipment (Sokkia iX-705 Robotic Total Station; Sokkia iM-55 and SOUTH N6+ 2" Reflectorless Total Stations; Nivel System DT-5 Optical and Digital Theodolites; 3T5KP Optical levels SOKKIA B40, B40A; The Hubsan Zino Mini SE Refined Portable Combo quadcopter – a 4K-camera drone; the Holybro H-RTK F9P Rover Lite GPS receiver; Trimble R1 GNSS-Receiver with Controller etc.). Specialised licensed software is available, including ESRI ArcGis, Surfer

8.0, MapInfo, TopoCad 2024, Microsoft Office 365, AutoCAD 2026, CloudCompare, QGIS, SNAP, etc., which ensure high-quality training of master's students in the study programme 'Land Management and Cadastre' throughout the entire training cycle.
<i>Information, teaching and learning materials</i>
An ECTS Information Package is developed for each study programme at the university. Using their personal 'MIA: Osvita' account, each student can review and create their own individual plan, view the curriculum, the points obtained for each course, and their class schedule. They can also communicate with other participants of the educational process. Course summaries, outlines, and syllabi, along with assessment criteria for educational components, are available on the corporate distance learning platform. The university's electronic repository provides full-text access to SUTE scientific and educational literature, qualification paper manuscripts and doctoral and postdoctoral theses. For the students' convenience, the university has developed a Catalogue of Academic Courses, according to which students are entitled to choose elective educational components.
9 - ACADEMIC MOBILITY
<i>National credit mobility</i>
National credit mobility is implemented within the framework of memoranda of cooperation between SUTE and other higher education institutions (research institutions) of Ukraine in accordance with the law.
<i>International credit mobility</i>
The university has signed cooperation agreements between SUTE and foreign higher education institutions, which provide for partnership exchanges and student training under international programmes and projects within the Erasmus+ programme.
<i>Training of foreign students</i>
Terms and conditions of the study programme in the context of training foreign citizens are as follows: knowledge of the Ukrainian language at a relevant level, which is not lower than B1.

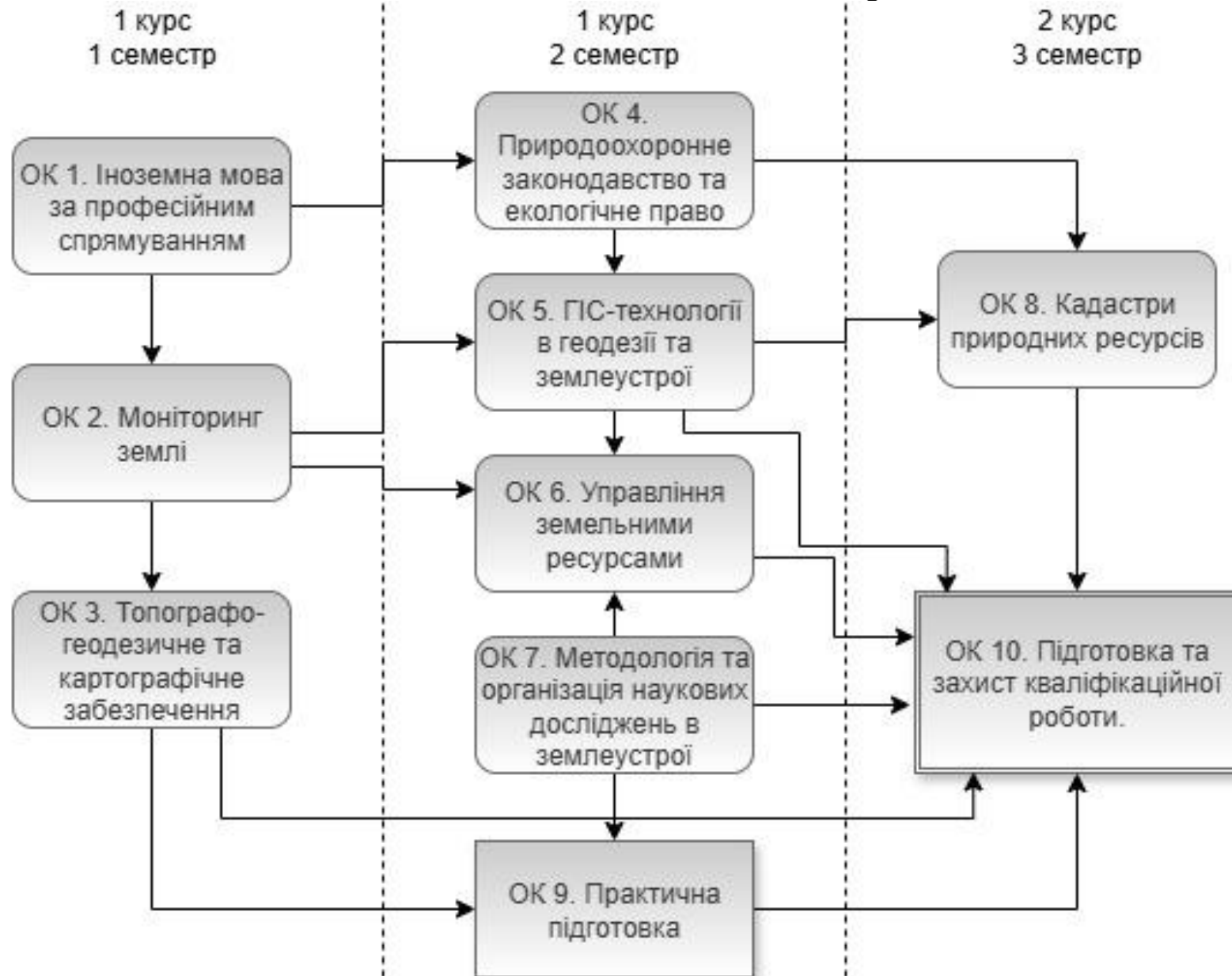
3.2. LIST OF THE STUDY PROGRAMME COMPONENTS AND THEIR LOGICAL ORDER

3.2.1. List of the SP components

Code	Programme educational components	ECTS credits	Form of control
<i>Compulsory components</i>			
CC 1.	Foreign language for professional purposes	6	Exam
CC 2.	Land monitoring	6	Exam
CC 3.	Topographic, geodetic, and cartographic support	6	Exam
CC 4.	Nature conservation legislation and environmental law	6	Exam
CC 5.	GIS technologies in geodesy and land management	6	Exam
CC 6.	Land resources management	6	Exam
CC 7.	Scientific research methodology and organisation in land management	3	Exam
CC 8.	Natural resources cadastres	6	Exam
CC 9.	Practical training	9	Credit
CC 10.	Final qualification paper preparation and defence	12	Defence
Total credits for compulsory components		66	
<i>Elective components</i>			
EC 1.	Educational component 1	6	Exam
EC 2.	Educational component 2	6	Exam
EC 3.	Educational component 3	6	Exam
EC 4.	Educational component 4	6	Exam
Total credits for elective components		24	
TOTAL CREDITS FOR THE STUDY PROGRAMME		90,0	

Students choose elective courses through their personal accounts on the ‘MIA: Osvita’ portal. The description and prerequisites of the academic courses are provided in the SUTE Catalogue of Academic Courses.

3.2 2. The SP Structural and Logic Network



3.3.Certification of graduates

Certification is carried out in the form of a public defence of a final qualification paper.

A qualification paper involves suggesting an independent solution to a complex problem in the field of geodesy and land management, which requires conducting research and/or implementing innovations.

The qualification paper must not contain academic plagiarism, fabricated or false information.

The final qualification paper should be published on the official website of the higher education institution or in its repository.

3.4. The programme competences and the SP compulsory components matrix

Components/ Competences	CC 1	CC 2	CC 3	CC 4	CC 5	CC 6	CC 7	CC 8	CC 9	CC 10
TC 01	+	+	+	+	+	+	+	+	+	+
TC 02	+									+
TC 03		+	+		+	+	+	+	+	+
TC 04	+	+		+	+	+	+	+	+	+
TC 05	+	+	+		+	+	+	+	+	+
TC 06		+		+		+		+	+	+
SC 01					+	+	+		+	+
SC 02		+	+	+		+	+	+	+	+
SC 03		+	+		+	+	+	+	+	+
SC 04		+			+		+	+	+	+
SC 05		+	+				+	+	+	+
SC 06		+	+	+		+		+	+	+
SC 07			+		+			+	+	+
SC 08		+			+		+		+	+
SC 09						+	+	+	+	+
SC 10		+		+					+	+

3.5. The programme learning outcomes and the SP compulsory components matrix

Components / Programme learning outcomes	CC 1	CC 2	CC 3	CC 4	CC 5	CC 6	CC 7	CC 8	CC 9	CC 10
LO1						+	+		+	+
LO2	+	+	+		+				+	+
LO3		+	+			+	+	+	+	+
LO4					+			+	+	+
LO5					+			+	+	+
LO6		+	+						+	+
LO7					+		+	+	+	+
LO8		+	+	+	+	+		+	+	+
LO9					+	+		+	+	+
LO10		+	+		+		+	+	+	+
LO11		+	+	+		+		+	+	+
LO12	+					+	+	+	+	+
LO13		+	+			+		+	+	+
LO14				+		+	+		+	+
LO15		+	+	+					+	+

LIST OF RECOMMENDED ELECTIVE COMPONENTS

Code	Educational components	ECTS credits
EC 1.	Remote geospatial data collection methods	6
EC 2.	Landscape management	6
EC 3.	International agricultural law	6
EC 4.	International environmental management	6
EC 5.	Land management and cadastre standardisation	6
EC 6.	Local development project management	6

