



Syllabus of the educational discipline
 «Geoinformation systems and big data in economic research»

Speciality	All specialities
Educational program	All programs
Level of education	First (bachelor degree)
Discipline status	Selective
Teaching language	English
Year / semester	2 nd year, 3 rd or 4 th semester
Number of ECTS credits	5
Distribution by types of trainings and hours of study	Lectures – 30 hours
	Laboratory classes – 30 hours
	Independent work – 90 hours
Form of final assessment	Final test
Department	Tourism, Nauky Avenue 9-A, c. Kharkiv , 1st building, room 316. Tel. +38(057)758-77-26 (additional 451) http://tourism.hneu.edu.ua
Teacher (-s)	Nadiya DEKHTYAR, PhD in Economics, associate professor
Teacher's contacts	nadiya.dekhtyar@hneu.net
Days of the classes	According to the teaching schedule
Consultations	According to the schedule
<p>The purpose of the discipline is formation of a system of theoretical knowledge and applied skills to substantiate the necessary conditions and objectives of economic research at the macro and micro levels, taking into account trends and threats to the world market and strategic priorities of the state in economic security, increasing the efficiency of local development projects using big data.</p>	
<p>Prerequisites for learning <i>IT science (informatics) and statistics</i></p>	
<p>Content of the educational discipline</p>	
<p>Content module 1. Basics of geoinformation technologies</p> <p>Theme 1. Digital cartography</p> <p>Theme 2. Principles of navigation systems. Global positioning systems</p> <p>Theme 3. Processing of analytical data</p> <p>Theme 4. GIS hardware and software requirements. Stages of spatial design</p> <p>Theme 5. Online services based on geoinformation technologies</p> <p>Content module 2. Use of geoinformation technologies in economic research</p> <p>Theme 6. Requirements for the organization and processing of geospatial information in different industries</p> <p>Theme 7. Modelling of geospatial tasks. Methods of data visualization</p> <p>Theme 8. Types of spatial data and methods of computer presentation of geographical information</p> <p>Theme 9. Cadastral zoning and territorial development planning</p> <p>Theme 10. Integration of GIS with other tourist services</p> <p>Content module 3. Basics of working with big data</p> <p>Theme 11. Theoretical aspects of big data research</p> <p>Theme 12. Legal regulation of the open data usage</p> <p>Theme 13. The use of a system of satellite accounts in economic research of production and consumption of certain types of goods and services</p> <p>Theme 14. The use of big data arrays in social programs</p> <p>Theme 15. Development of a data collection project to monitor the behaviour of market participants</p>	
<p>Material and technical support (software) of the discipline</p>	
<p>The use of QGIS v. 3.x and R Studio is necessary to master the discipline</p>	



Course page on the Moodle platform (personal training system) *Syllabus, technological card, lectures, tasks for laboratory and independent classes, information materials, tasks for testing knowledge*

Recommended literature

Basic: 1. Principles of geographic information systems : an introductory textbook / Editors: O. Huisman, R.A. de By. - Enschede (the Netherlands) : The International Institute for GeoInformation Science and Earth Observation (ITC), 2009. - 540 p. 2. Геоінформаційні системи : учеб. посіб. / А. С. Кулик [и др.] ; Нац. аэрокосм. ун-т им. Н. Е. Жуковского "Харьк. авиац. ин-т". - Харьков : ХАИ, 2014. - 77 с. 3. Геоінформатика : навч. посіб. / В. І. Зацерковний, Л. В. Тустановська ; Київ. нац. ун-т ім. Т. Шевченка. - Київ : КНУ ім. Т. Шевченка, 2018. - 467 с. 4. Геоінформаційні системи. Вступний курс : навч. посіб. / А. Д. Тевяшев, В. П. Ткаченко, М. І. Губа ; Харків. нац. ун-т радіоелектрон. - Харків : ХНУРЕ, 2017. - 393 с. 5. Павленко Л.А. Геоінформаційні системи : навч. посіб. / Павленко Л. А. ; Харк. нац. екон. ун-т. - Харків : ХНЕУ, 2013. - 258 с. 6. Шипулін В.Д. Основи ГІС-аналізу: навч. посіб. для студентів спец. "Геоінформ. системи і технології". - Харків : ХНУМГ, 2014. - 330 с.

Supplementary: 7. QGIS Documentation. URL: <https://documentation.qgis.org>. 8. The official site of the Database of Global Administrative Areas (GADM). URL: <https://gadm.org>. 9. Google Earth Tutorials. URL: <https://earth.google.com/studio/docs/tutorials/> 10. Космічні та геоінформаційні системи: навч. посіб. / О. О. Железняк [та ін.] ; Нац. авиац. ун-т. - Ніжин : НДУ, 2016. - 374 с. 11. Пащенко Р. Е. Проектування баз геоданих : конспект лекцій. - Харків : ХАИ, 2018. - 155 с.

Assessment system of learning outcomes

The assessment system includes the current control, which is carried out through lectures and laboratory classes in this discipline and is assessed by the sum of points; final module control, which is carried out in the form of a written test, in accordance with the schedule of the educational process (maximum - 100 points, minimum - 60 points). More detailed information on assessment is given in the technological card of the discipline.

Accumulation of rating points in the discipline

Types of training	Max points
Laboratory classes (active work)	30
Tasks to the themes	10
Competence-oriented tasks	30
Written tests	30
Max points	100

Transference of Simon Kuznets KhNUE Characteristics of Students' Progress into the System of the ECTS Scale

Total score on a 100-point scale	ECTS assessment scale	The assessment according to the national scale	
		for an exam, differentiated test, term project (work), practice, training	for a final test
90 – 100	A	excellent	passed
82 – 89	B	good	
74 – 81	C	satisfactory	
64 – 73	D		failed
60 – 63	E		
35 – 59	FX	unsatisfactory	
1 – 34	F		

Discipline policies

It is mandatory to adhere to the policy of academic integrity, the absenteeism policy and the policy of completing tasks on time.

More detailed information about competencies, learning outcomes, teaching methods, assessment forms, independent training is given in the Working plan of the educational discipline