Spatial Analysis

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Document Title

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DEVELOPMENT OF A MASTER PROGRAMME IN THE MANAGEMENT OF INDUSTRIAL ENTREPRENEURSHIP FOR TRANSITION COUNTRIES

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Partners :

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Spatial Analysis

Study program	Year	Semester

Course type:	

University code	

Lectures	Seminar	Tutorial	Laboratory work	Other work	Individ. work	ECTS
20	0	0	30		50	6

Lecturer	

Languages	English

PREREQUISITS	ОБЯЗАТЕЛЬНЫЕ УСЛОВИЯ

CONTENTS	СОДЕРЖАНИЕ

1. GIS to support the decision process
2. Geographic coordinate systems
3. The hardware and software components
4. Spatial and alphanumeric data
5. Open source and open access data
6. GIS software (Qgis 3) download and introduction
7. Collect, organise and sharing data
8. Classifying and viewing data

9. Making maps
10. Spatial analysis tools in Qgis 3
11. Statistical analysis tools in Qgis 3
12. Exercitation on Asian case study (Kazakhstan)

READINGS

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OBJECTIVES AND COMPETENCES

The module offers a complete course to transfer the participants the adequate knowledge of Geographical Information System (GIS) from the theoretical notions to the practical use. An application to an Asian case study is included.

Competences

This subject proposes 20% of lectures, 30% laboratory work and 50% individual work to understand the advantage of application GIS tools in the urban and territorial analysis.

Basic competences

Attendees will learn the base functionality of open access GIS software (Qgis) to collect and geoprocessing alphanumeric and spatial data.

Transversal competences

The knowledge acquired in this subject will be useful in different disciplines and applications.

Specific competences

Attendees will acquire specific competences in the use of geoprocessing tools to support the decision-makers process.

ЦЕЛИ И КОМПЕТЕНЦИИ

INTENDED LEARNING OUTCOMES

Students who attend this course will interpret and represent the spatial phenomena related to the different components (geomorphological, social, economic, ...) that influence urban and territorial development. The acquired competencies in using GIS software and tools will be helpful to support the stakeholders' decision process in the territorial phenomena.

ОЖИДАЕМЫЕ РЕЗУЛЬТАТЫ ОБУЧЕНИЯ

LEARNING AND TEACHING METHODS	МЕТОДЫ ОБУЧЕНИЯ И ПРЕПОДАВАНИЯ

The module is articulated in three main parts: the theoretical content related to the geographical information systems; the software, tools and data; and an exercise on an Asian case study. The first part includes a presentation on the importance of using geographical information instruments to support the decision process in the different sectors and a theoretical background related to introducing geographic coordinate systems, the GIS hardware and software components, and different categories of data. The second part proposes the primary practical information on using Qgis3 software and spatial analysis tools to collect, organise, elaborate the data. Furthermore, it includes the presentation of main Qgis3 instruments to classifying and viewing data and making maps. The last part involves the students applying theoretical and practical competence on the GIS to develop an exercitation on an Asian case study (Kazakhstan) to Symbolize data and create an eye-catching final product.

ASSESSMENT	ОЦЕНКА

The course's final assessment includes the verification of the knowledge of the theoretical and operational issues dealt with during the lessons. The final assessment can include a verification that evidences student competencies in using GIS software and tools and presenting exercise activities outcomes. Therefore, a positive assessment at the end of the course requires that students will be able to:

- collecting and organising spatial data;
- geoprocessing spatial data;
- mapping the outcomes of spatial analysis;
- interpreting spatial analysis outputs.

LECTURER'S REFERENCES

Qgis 3 user guide (EN) https://docs.qgis.org/3.10/en/docs/user_manual/

Territorial characteristics to support the facilities location decisions

Study program	Year	Semester

Course type:	

University code	

Lectures	Seminar	Tutorial	Laboratory work	Other work	Individ. work	ECTS
50	0	0	0		50	6

Lecturer	

Languages	English

PREREQUISITS	ОБЯЗАТЕЛЬНЫЕ УСЛОВИЯ

CONTENTS	СОДЕРЖАНИЕ

1. The principal components of territorial system for the study of competitiveness;
2. Urban elements of the competitiveness;
3. Territorial elements of the competitiveness;
4. Index e parameter to measure competitiveness;
5. The international rankings of competitiveness;

6. Identify and measure the characteristics of territorial system that influence the competitiveness of the system itself and, above all, of its companies ;
7. Territorial and urban components of competitiveness for the CA countries.

READINGS

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OBJECTIVES AND COMPETENCES

The subject provides a quantitative analysis to evaluate the territorial attractiveness for new activities' localisation. This output is reached by starting an extensive state of the art on urban and territorial competitiveness and some examples of international studies and rankings in this issue.

Competences

This subject proposes 50% lessons and 50% individual work to understand the theme of urban and territorial competitiveness for the facility location.

Basic competences

Attendees will understand the importance to consider the urban and territorial competitiveness to support the facilities location decisions.

Transversal competences

The knowledge will acquire in this subject could be useful in different disciplines and applications.

Specific competences

Attendees will acquire urban and territorial competences to support companies in the location of new plants.

ЦЕЛИ И КОМПЕТЕНЦИИ

INTENDED LEARNING OUTCOMES

Students attended this course will be able to define and measure the physical, functional, and environmental characteristics of a territorial system that favours the competitiveness of the system itself and, above all, of its companies. This means that the acquired competences will be useful to support companies in the choice of the most attractive and

ОЖИДАЕМЫЕ РЕЗУЛЬТАТЫ ОБУЧЕНИЯ

suitable locations, contributing also to the development of their growth strategy.

LEARNING AND TEACHING METHODS	МЕТОДЫ ОБУЧЕНИЯ И ПРЕПОДАВАНИЯ

The module includes lectures and practical work, with the assessment and discussion of the work made by the students. In fact, the course is divided into two parts: a part with greater theoretical content, aimed at illustrating (i) the main elements that make a city and a territory competitive and attractive for the location of businesses, referring to the physical, functional and environmental characteristics; (ii) the most popular rankings to measure urban and territorial competitiveness and the related indicators/parameters used to quantify the level of competitiveness of an area.

In particular, the reading and comparison of the different types of competitiveness measurement constitute the hinge between the first part of the course and the second one, characterised by an operational nature, aimed at applying the acquired contents to the Asian context. In this second part of the course, students will identify and measure the physical, functional and environmental characteristics defined as significant to promote the competitiveness of the study area assigned to them.

The structured course allows students to address the issue of urban and territorial competitiveness by referring to quantitative and qualitative aspects capable of directly and indirectly affecting not only the location choices of economic activities but also those of all users connected to them, concerning the choice of the urban context in which to reside and/or invest to satisfy their needs and aspirations.

ASSESSMENT	ОЦЕНКА

The final assessment of the course includes the verification of the knowledge of the theoretical and operational issues dealt with during the lessons. The assessment can be articulated into three main parts: the first related to the physical, functional and environmental characteristics of an urban area and territory that are significant to increase their competitiveness; the second concerning the most consolidated index/parameters used by international rankings to measure the

competitiveness level of a territory; the third the application of these index/parameters to the case study. This last part allows to evaluate if the student is able to support companies in the localization choice of a new plant, according to the urban and territorial characteristics that make that area attractive both for the company and for their users. The case study of CA countries allows to assess the acquired competences by practical questions about a real situation.

Therefore, a positive assessment at the end of the course requires that students are able to:

- learn the main international rankings measuring territorial and urban competitiveness;
- identify the suitable location for economic and effective operations of companies, according to urban characteristics.

LECTURER'S REFERENCES

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