

## SYLLABUS

### 1. Information about the program

1.1 Institution of higher education	„Babeş-Bolyai” University, Cluj-Napoca
1.2 Faculty	Geography
1.3 Department	Regional Geography and Territorial Planning
1.4 Study area	Geography
1.5 Level of study	Master
1.6 Program of study	<b>Geomatics</b>

### 2. Information about the course

2.1 Title of the course	<b>WEBGIS</b>						
2.2 Course taught by:	Dr. Titus MAN, Associate Professor						
2.3 Seminar by:	Dr. Titus MAN, Associate Professor						
2.4 Year of study	<b>II</b>	2.5 Semester	<b>4</b>	2.6 Method of assessment	<b>E</b>	2.7 Type of course	<b>RQ</b>

### 3. Time allocation (hours per semester of pedagogical activities)

3.1 Hours per week	4	of which: 3.2 course	1	3.3 seminar	2
3.4 Total hours – semester	56	of which: 3.5 course	28	3.6 seminar	28
Time allocation					hours
Study for exams					40
Additional documentation in the library, on the internet and in the field and working on the semester project and presentation					30
Reading for the seminar and writing the projects					21
Tutoring					
Exam					3
Other activities					
3.7 Total hours for individual study	94				
<b>3.8 Total hours per semester</b>	<b>150</b>				
3.9 Number of credits	6				

### 4. Prerequisites (if any)

4.1 curriculum-related	-
4.2 competence-related	-

### 5. Other requirements (if any)

5.1 for the course	<ul style="list-style-type: none"> <li>Classroom with desktop/laptop, projector and power point software, access to internet.</li> </ul>
5.2 for the seminar	<ul style="list-style-type: none"> <li>Computer room, Internet connection</li> </ul>

## 6. Competencies

<b>Generic competencies</b>	<ul style="list-style-type: none"> <li>• C1 Ability to solve problems.</li> <li>• C2 Ability to organize and plan ahead.</li> <li>• C3 Ability to analyze, synthesize, interpret and communicate information.</li> <li>• C4 Ability to create new ideas</li> </ul>
<b>Specific competencies</b>	<ul style="list-style-type: none"> <li>• CT 1 The student will be able to work with information resources in geospatial analysis.</li> <li>• CT 2 The student will be able to use and describe the tools used to manage geodatabases.</li> <li>• CT 3 The student will be able to apply the gained knowledge in practice.</li> </ul>

## 7. Course objectives

7.1 General goals	<ul style="list-style-type: none"> <li>• To address the full spectrum of spatial analysis and associated modeling techniques that are provided within currently available and widely used geographic information systems (GIS) and associated software</li> </ul>
7.2 Specific objectives	<ul style="list-style-type: none"> <li>• Students will be able to address the central issues and problems associated with spatial data that need to be considered in any analytical exercise</li> <li>• Students will gain understanding of the methodological background of WebGIS analysis</li> <li>• Students will extend their understanding of more specialized tools, designed to address the needs of specific sectors or technical problems that are otherwise not well-supported within the core GIS packages at present</li> </ul>

## 8. Outline

<b>8.1 Course</b>	<b>Teaching method(s)</b>	<b>Observations</b>
GIS and WebGIS: concepts and applications	• lecturing	4 hours
WebGIS Services :Interoperability, WebGIS Standards	• lecturing	4 hours
Spatian data processing: Mobile GIS, Geoportals	• lecturing	4 hours
Creating webgis service - WMS (Web Map Service)	• lecturing	4 hours
Web Mapping and API (Application Program Interface)	• lecturing	4 hours
Open Data, VGI and crowdsourcing	• lecturing	4 hours
WebGIS in E-Bussiness and E-Government	• lecturing	4 hours
<b>8.2 Seminar</b>	<b>Teaching method(s)</b>	<b>Observations</b>
GIS and WebGIS: concepts and applications	• Instructor-led seminar	4 hours
WebGIS Services :Interoperability, WebGIS Standards	• Instructor-led seminar	4 hours
Spatian data processing: Mobile GIS, Geoportals	• Instructor-led seminar	4 hours
Creating webgis service - WMS (Web Map Service)	• Instructor-led seminar	4 hours
Web Mapping and API (Application Program Interface)	• Instructor-led seminar	4 hours
Open Data, VGI and crowdsourcing	• Instructor-led seminar	4 hours
WebGIS in E-Bussiness and E-Government	• Instructor-led seminar	4 hours

## 9. Bibliography

Imbroane A.M., Moore D. – Inițiere în GIS și Teledetecție, Presa Universitară Clujană, Cluj-Napoca, 1999.

Minami M., Using ArcMap, ESRI press, Redland, CA, USA, 2002

Mitchell, A. (2001), The ESRI Guide to GIS Analysis, Volume 1: Geographic Patterns and Relationships, ESRI Press

Mitchell, A. (2005), The ESRI Guide to GIS Analysis, Volume 2: Spatial Measurements and Statistics, ESRI Press

Mitchell, A. (2012), The Esri Guide to GIS Analysis, Volume 3: Modeling Suitability, Movement, and Interaction, ESRI Press

Pinde Fu, Getting to Know Web GIS (Getting to Know ArcGIS), ESRI Press, 2017

Pinde Fu, Sun Jiulin, WebGIS Principles and Applications, ESRI Press, 2011

Vieneau Aleta, Using ArcCatalog, ESRI press, Redland, CA, USA, 2002.

Wang, F. (2014), Quantitative Methods and Socio-Economic Applications in GIS [2 ed.], CRC Press, 333p

Zeiler M., Modeling our world, ESRI press, Redland, CA, USA, 2002.

## 11. Assessment and evaluation

Type of activity	10.1 Criteria for assessment	10.2 Method of assessment	10.3 Percent of final grade
11.1 Course	To be announced	Final exam	35%
		Final project and its presentation	35%
11.2 Seminar	To be announced	Individual projects (2)	20%
		Attendance and active participation	10%

Date  
20.04.2022

Signature course lecturer  
Associate Professor Titus Man, PhD

Signature seminar instructor  
Associate Professor Titus Man, PhD

Date departmental approval  
28.04.2022

Signature department chair  
Associate Professor Iuliu Vescan, PhD