

## SYLLABUS

### 1. Information regarding the programme

1.1 Higher education institution	<b>Babeş-Bolyai University of Cluj-Napoca</b>
1.2 Faculty	<b>Faculty of Environmental Science and Engineering</b>
1.3 Department	<b>Department of Environmental Science</b>
1.4 Field of study	<b>Environmental Science</b>
1.5 Study cycle	<b>Master</b>
1.6 Study programme / Qualification	<b>Sustainable Development and Environmental Management</b>

### 2. Information regarding the discipline

2.1 Name of the discipline	<b>ASSESSMENT AND ANALYSIS PROCEDURES IN ECOLOGICAL MANAGEMENT</b>						
2.2 Course coordinator	<b>Alexandru – Sabin Bădărău, Assistant Professor, PhD</b>						
2.3 Seminar coordinator	<b>Alexandru – Sabin Bădărău, Assistant Professor, PhD</b>						
2.4. Year of study	<b>1</b>	2.5 Semester	<b>1</b>	2.6. Type of evaluation	<b>E</b>	2.7 Type of discipline	<b>Compulsory</b>

### 3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	3	Of which: 3.2 course	2	3.3 seminar/laboratory	1
3.4 Total hours in the curriculum	42	Of which: 3.5 course	28	3.6 seminar/laboratory	14
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					28
Additional documentation (in libraries, on electronic platforms, field documentation)					14
Preparation for seminars/labs, homework, papers, portfolios and essays					7
Tutorship					0
Evaluations					4
Other activities: .....					-
3.7 Total individual study hours			53		
3.8 Total hours per semester			95		
3.9 Number of ECTS credits			5		

### 4. Prerequisites (if necessary)

4.1. curriculum	Basics of Ecology
4.2. competencies	-

**5. Conditions** (if necessary)

5.1. for the course	Necessity of digital projector and computer (laptop)
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## 6. Specific competencies acquired

<i>competencies</i>	<ul style="list-style-type: none"> <li>• Understanding the concepts of ecological management and ecosystem assessment.</li> <li>• Databases structures for ecological assessment and analytical procedures.</li> </ul>
<i>competencies</i>	<ul style="list-style-type: none"> <li>• Field work for gathering data for ecological assessment and analyses.</li> <li>• Geomatic approach of ecosystem analyses and management</li> </ul>
<i>competencies</i>	<ul style="list-style-type: none"> <li>• Learning the concepts of ecologic management</li> <li>• Using the main software packages used in the field.</li> <li>• Ability to conduct literature research in all the existing formats.</li> </ul>
<i>competencies</i>	<ul style="list-style-type: none"> <li>• acquiring knowledge of developing a research project;</li> <li>• teamwork.</li> </ul>

## 7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	<ul style="list-style-type: none"> <li>• presentation of the principal analytical methods for the implementation of the correct ecological management measures</li> </ul>
7.2 Specific objective of the discipline	<ul style="list-style-type: none"> <li>• coverage of the ecological management terminology</li> <li>• knowledge of methods and techniques used in ecological management</li> <li>• presentation of the stages in the ecological management and the specific actions</li> </ul>

## 8. Content

8.1 Course	Teaching methods	Remarks
1. Introduction: Ecological management	Presentation Interactive discussions	Introductory course
Evaluation of Ecosystem 2. Health (EHE)  Criteria for identification and classification of the EHA indicators	Presentation Interactive discussions	

3. EHA – indicators based on indicator species, species abundance and biomass.	Presentation Interactive discussions	
4. EHA – indicators based on Ecological Strategies. EHA producers.	Presentation	
5. Ecosystem Health Assessment and Bioeconomic Analysis	Presentation	
6. Application of Ecological and Thermodynamic Indicators for the Assessment of the Ecosystem Health	Presentation	
7. Application of Thermodynamic Indices to Agro-Ecosystems	Presentation	
8. Ecosystem Indicators for the Integrated Management of Landscape Health and Integrity	Presentation	
9. Energy, Transformity, and Ecosystem Health		
10. Geomatics in Ecosystem Assessment and Management	Presentation	
11-14. Ecological Management Plans and Scientific Research	Presentation	

## **Bibliography**

1. Jorgensen, S.E., Constanza, R., Xu. F.L. (eds.,2005) - Handbook for Ecological Indicators for Assessment of Ecosystem Health, CRC Press, Taylor and Francis Group.
2. Jopp, F., Reuter, H., Breckling. B. (2011) – Modelling Complex Ecologic Dynamics. Springer Eds. Berlin – Heidelberg.
3. Fryxell, J.M., Sinclair, A.R.E., Caughley, G. (2014) – Wildlife Ecology, Conservation and Management, 3<sup>rd</sup> ed., Wiley – Blackwell ed.

<b>8.2 Seminar / laboratory</b>	Teaching methods	Remarks
1 -5. Ecosystem Health indicators (EHA)		
6-10. Ecological research and Ecological Management	Presentation Teamwork Brainstorming	
11-14. Ecological Management Plans based on scientific research	Presentation Teamwork Brainstorming	

**9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program**

<ul style="list-style-type: none"> <li>The knowledge acquired during the course can be used in the following domains: environment protection, ecological management;</li> <li>The graduates of this course can contribute in the development management plans of protected areas and to the elaboration of the scientific research programs for biodiversity conservation.</li> </ul>
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**10. Evaluation**

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	<ul style="list-style-type: none"> <li>Problem solving</li> <li>Correctness of the results and answers</li> </ul>	Written exam (2 hours)	80 %
10.5 Seminar/lab activities	The activity of the student	Score	5 %
	The correctness of the project, accuracy of the presentation, correctness of the responses.	Project presentation (10 minutes/student)	15 %

**10.6 Minimum performance standards**

<ul style="list-style-type: none"> <li>Each student has to prove that (s)he acquired an acceptable level of knowledge and understanding of the studied domain, that (s)he is capable of stating these knowledge in a coherent form, that (s)he has the ability to establish certain connections and to use the knowledge in solving different problems.</li> <li>Successful passing of the exam is conditioned by the final grade that has to be at least 5. • Minimum 80% presence at seminar/lab activities.</li> </ul>
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Date	Signature of course coordinator	Signature of seminar coordinator
20.09.2017	Alexandru – Sabin Bădărașu	Alexandru – Sabin Bădărașu

