SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	Babeş-Bolyai University of Cluj-Napoca
1.2 Faculty	Faculty of Environmental Science and Engineering
1.3 Department	Department of Environmental Analysis and Engineering
1.4 Field of study	Environmental Engineering
1.5 Study cycle	Research master university studies
1.6 Study programme / Qualification	Sustainable Development and Environmental Management; Recycling Engineering

2. Information regarding the discipline

2.1 Name of the discipline			Evaluation and risk management of dangerous chemical substances NME8311				
2.2 Course coordinator			Assoc. Prof. PhD Habil. Delia Maria Gligor				
2.3 Seminar coordinator			Assoc. Prof. PhD Habil. Delia Maria Gligor				
2.4. Year of study	I	2.5 Semester	1	2.6. Type of evaluation	E	2.7 Type of discipline	Compulsory

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

3.1 Hours per week	2	Of which: 3.2 course	2	3.3 seminar	1
3.4 Total hours in the curriculum	42	Of which: 3.5 course	28	3.6 seminar	14
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					40
Additional documentation (in libraries, on electronic platforms, field documentation)					21
Preparation for seminars/labs, homework, papers, portfolios and essays					40
Tutorship					4
Evaluations					3
Other activities:					-

3.7 Total individual study hours	108
3.8 Total hours per semester	150
3.9 Number of ECTS credits	6

4. Prerequisites (if necessary)

4.1. curriculum	
4.2. competencies	

5. Conditions (if necessary)

5.1. for the course	Students will be present to course with closed mobile phones. Delay is not allowed.
5.2. for the seminar	Students will present to course with closed mobile phones Project will be delivering not later than the last week from semester.

6. Specific competencies acquired

Professional competencies	• Participants to the course will achieve the level of knowledge necessary in order be able to understand and interpret a technical security report for dangerous chemical substances. • Students will be acquainted with the most recent regulations, recommendations and trends for evaluation risk of dangerous chemical substances. • Understanding the principles and implementation of REACH regulations.
Transversal competencies	• The ability to apply knowledge in solving real situations of dangerous chemical substances. • Application of efficient and rigorous working rules. • Manifest responsible attitudes toward the scientific and didactic fields. • Respecting the professional and ethical principles.

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

7.1 General objective of the discipline	• Knowledge achievement for evaluation and risk control of dangerous chemical substances, REACH agreement regarding the using of substances and preparations
7.2 Specific objective of the discipline	• Knowledge achievement for classification, labeling and packing of substances and mixtures • Knowledge achievement for evaluation and risk control of existent substances

8. Content

8.1 Course	Teaching methods	Remarks
8.1.1. Regulations of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). General issues.	• Interactive exposure • Explanation • Conversation • Didactical demonstration	4 hours
8.1.2. Registration of substances. Data sharing and avoidance of unnecessary testing	• Interactive exposure • Explanation • Conversation • Didactical demonstration	4 hours
8.1.3. Information in the supply chain. Downstream users	• Interactive exposure • Explanation • Conversation • Didactical demonstration	4 hours
8.1.4. Evaluation and authorization	• Interactive exposure • Explanation • Conversation • Didactical demonstration	4 hours
8.1.5. Restrictions of the manufacturing, placing on the market and use of certain dangerous substances and preparations	• Interactive exposure • Explanation • Conversation • Didactical	4 hours

	demonstration	
8.1.6. Fees and charges. Classification and labeling inventory	• Interactive exposure • Explanation • Conversation • Didactical demonstration	4 hours
8.1.7. Risk evaluation on human health and environment due to using of dangerous chemical substances	• Interactive exposure • Explanation • Conversation • Didactical demonstration	4 hours

Bibliography

1. Legislation: REACH rule, laws and government decisions regarding dangerous chemical substances.
- Full title: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 Dec. 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency.
- EU's REACH chemicals law begins life in Helsinki
- Reach chemicals legislation.
2. P. Carson, C. Mumford, *Hazardous Chemicals Handbook, Second edition*, Butterworth-Heinemann, 2002.
3. Nicholas P. Cheremisinoff, *Handbook of Hazardous Chemical Properties*, Butterworth-Heinemann, 2000.
4. B. Martel, *Chemical Risk Analysis,. A Practical Handbook*, Butterworth-Heinemann, 2004.
5. P. Warren, *Hazardous Gases and Fumes*, Butterworth-Heinemann, 1997.

8.2 Seminar	Teaching methods	Remarks
8.2.1. Determination of toxicity risk for some dangerous chemical substances	• Interactive exposure • Explanation • Conversation	2 hours
8.2.2. Technical security report according to REACH agreement	• Interactive exposure • Explanation • Conversation	2 hours
8.2.3. Preliminary REACH registration	• Interactive exposure • Explanation • Conversation	2 hours
8.2.4. REACH consulting	• Interactive exposure • Explanation • Conversation	2 hours
8.2.5. Elaboration and advancement of registration file	• Interactive exposure • Explanation • Conversation	2 hours
8.2.6. SIEF Management	• Interactive exposure • Explanation • Conversation	2 hours
8.2.7. Organization of necessary rules and analyses for REACH registration	• Interactive exposure • Explanation • Conversation	2 hours

Bibliography

1. Legislation: REACH rule, laws and government decisions regarding dangerous chemical substances.
2. B. Martel, *Chemical Risk Analysis. A Practical Handbook*, Butterworth-Heinemann, 2004.

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

The content of the discipline is consistent with the similar disciplines from other Romanian universities and universities from abroad, as well as with the requirements that potential employers would have in the environmental science and engineering field.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	• The correctness and completeness of the accumulated knowledge.	Written exam (in the regular session)	80 %
10.5 Seminar	• A technical security report for a dangerous chemical substance	Evaluation of the project (documentation and demonstration)	20 %
10.6 Minimum performance standards			
• Each student has to prove that (s)he acquired an acceptable level of knowledge and understanding, that (s)he is capable of stating these knowledge in a coherent form. • Successful passing of the exam is conditioned by the final grade that has to be at least 5.			

Date Signature of course coordinator Signature of seminar coordinator

27.04.2017

Date of approval Signature of the head of department