UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
Facultatea de Agricultură
Calea Mănăştur 3-5, 400372, Cluj-Napoca, România
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No._____of _____

USAMV form 0107030105

SUBJECT OUTLINE

1. Information on the programme

1.1. Higher education institution	University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca
1.2. Faculty	Agriculture
1.3. Department	Environmental and Plant protection
1.4. Field of study	Environmental Engineering
1.5. Cycle of study[1]	Bachelor
1.6. Specialization/ Study programme	Environmental Engineering
1.7. Form of education	Full time

2. Information on the discipline

2.1. Discipline name	Waste management I							
2.2. Course coordinator	PhD Lecturer Braşovean Ioan							
2.3. Seminar/ laboratory/ project coordinator	PhD Assist. Moldovan Bianca							
2.4. Year of study	III	2.5. Semester	I	2.6. Evaluation type	summative	2.7. Discipline status	Content[2]	DS
							Compulsoriness[3]	DI

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	5	out of which: 3.2. lecture	2	3.3. seminar/ laboratory/ project	3
3.4.Total number of hours in the curriculum	70	out of which: 3.5. lecture	28	3.6.seminar/laboratory	42

Distribution of the time allotted	hours
3.4.1. Study based on books, textbooks, bibliography and notes	16
3.4.2. Additional documentation in the library, electronic platforms and field experiences	10
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays	10
3.4.4. Tutorials	4
3.4.5. Examinations	10
3.4.6. Other activities	

3.7. Total hours of individual study	50
3.8. Total hours per semester	120
3.9. Number of credits[4]	4

4. Prerequisites (if applicable)

4.1. curriculum-related	Monitoring risk events , General environmental issues	
4.2. skills-related	The student must have knowledge on ecology, technological disciplines, renewable energy, industry impact on environment	.

5. Conditions (if applicable)

5.1. for the course	The course is interactive, students can address questions regarding the exposed content. The university discipline impose respecting the beginning and finalizing hours of the course. Are not tolerated other activities during lecture, mobile phones are to be turned off.	

5.2. for the seminar/ laboratory/ project	The practical work is mandatory the course note and practical work, each student will develop an individual activity with laboratory materials made on. Academic conduit is required during the works.

6. Cumulated specific competences

Professional competences	Providing integrated environment services. Studies and specialized expertise and consultations to develop plans county / regional waste management. Management and rational use of renewable natural resources. Education and scientific research in the field.
Transversal competences	Knowledge of principles and strategic objectives regarding waste management; Learning the strategies and techniques used in developed economies to recover and reuse of material resources;

7. Discipline objectives (based on the cumulated specific competences)

7.1. General objective	Department of Waste Management aims theoretical and practical training of students in order to seek and retain principles and strategic objectives on waste management, rules and general legislative acts harmonized with the acquis communautaire through the implementation of Community policy in waste management field.
7.2. Specific objectives	It aims at training strategies and techniques used in developed economies to recover and reuse of material resources from the current management recycling reusable materials in Romania, everything in correlation with the principles that influence and ensure quality and protect the environment and human health.

8. Content

8.1. COURSE **Number of hours –**	Teaching methods	Observation
I. WASTE MANAGEMENT: 1.1 Waste introduction 1.2 Principles and Strategic Objectives	Lecture and exemplification	1 lecture
II. GENERATION OF WASTE: 2.1 Production of industrial waste 2.2 Production of packaging waste 2.3 Household waste 2.4 Other categories	Lecture and exemplification	1 lecture
II. URBAN WASTE MANAGEMENT: 3.1 Generation indicators 3.2 Qualitative and quantitative aspects	Lecture and exemplification	2 lectures
IV. URBAN WASTE MANAGEMENT: 4.1 Sludge from sewage 4.2 The formation and properties of the sludge 4.3 Processes and procedures for pollution 4.4 Recovery and final discharge	Lecture and exemplification	2 lectures
V. URBAN WASTE MANAGEMENT - Municipal Waste: 5.1 The collection and transportation of municipal waste 5.2 Recovery of municipal waste 5.3 Treatment of municipal waste 5.4 Municipal waste landfilled 5.5 Forecast of municipal waste management 5.6 Impact on the environment municipal waste management	Lecture and exemplification	2 lectures
VI. WASTE MANAGEMENT OF PRODUCTION: 6.1 Waste generation production 6.2 Transport and transfer of production waste 6.3 Incineration of waste production 6.4 Landfilling production 6.5 Non-hazardous waste production 6.6 Hazardous waste production	Lecture and exemplification	2 lectures

6.7 Properties of hazardous waste 6.8 Specific principles underlying the activity of hazardous waste management	Lecture and exemplification	1 lecture
VII. DYNAMIC OF COLLECTION AND/OR RECOVER OF WASTE: 7.1 Collection Systems 7.2 Sustainable development - Waste Management feature tracks 7.3 Waste EEE (electrical and electronic equipments)	Lecture and exemplification	2 lectures
VIII. WAYS TO ACCOMPLISH ON WASTE MANAGEMENT POLICY OBJECTIVES 8.1 Preventing and minimizing waste 8.2 Recycling and waste recovery 8.3 Treatment of waste 8.4 Packaging Waste 8.5 The incineration and co-incineration of waste 8.6 Final disposal	Lecture and exemplification	1 lecture
IX RECYCLING - RESOURCE MATERIALS AND ECONOMIC – ENVIRONMENTAL PROTECTION MEANS 9.1 The recovery and reuse of material resources – imperative of modern societies 9.2 Community policy on waste management	Lecture and exemplification	

8.2. PRACTICAL WORKS Number of hours –	Teaching methods	Observation
I. RULES IN WASTE MANAGEMENT: WASTE TREATMENT (GEO 78/2000, 2426/2001)	Exemplification	1 seminar
II. RULES IN WASTE MANAGEMENT: INDUSTRIAL DOLID WASTE MANAGEMENT (OUG 16/2001 61/2003 AND OU)	Exemplification	1 seminar
III. RULES IN WASTE MANAGEMENT: WASTE MANAGEMENT RECORDS (H. G. 856/2002)	Exemplification	1 seminar
IV. RULES IN WASTE MANAGEMENT MANAGEMENT OF PACKAGING AND PACKAGING WASTE (H. G. 349/2002 AND 166/2004)	Exemplification	1 seminar
V. OBLIGATIONS OF MANUFACTURERS, CARRIERS AND WASTE OPERATORS	Exemplification	1 seminar
VI. PHYSICAL PERSONS OBLIGATIONS AND ECONOMICAL AGENTS WHO UNDERTAKINGS, COLLECTS AND LEVERAGES SOLID WASTE	Exemplification	1 seminar
VII. PACKAGING RECYCLING WASTE	Exemplification	1 seminar
VIII. PLASTIC RECYCLING WASTE	Exemplification	1 seminar
IX. PET RECYCLING	Exemplification	1 seminar
X. RECYCLING FERROUS SCRAP METAL	Exemplification	1 seminar
XI. RECYCLING OF NON-FERROUS SCRAP METAL	Exemplification	1 seminar
XII. RECYCLING USED BATTERIES AND ACCUMULATORS	Exemplification	1 seminar
XIII. RECYCLING OF USED TIRES	Exemplification	1 seminar
XIV. CASE STUDY	Exemplification	1 seminar
Compulsory bibliography:		
Optional bibliography:		

9. Corroborating the discipline content with the expectations of the epistemic community representatives, of the professional associations and of the relevant employers in the corresponding field

In order to identify ways of modernization and continuous improvement of teaching and course content with the current issues and practical problems, teachers participate in establishing and sustaining relations of cooperation, with a view to exchanging experience, conducting demonstrations and internships for students with economic society state and / or private, where NGOs will be discussed current and future issues in terms of human health and the environment

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	-knowledge principles and strategic objectives regarding waste management;	summative(E)	50%

	-knowledge the strategies and techniques used in developed economies to recover and reuse of material resources; -the change of mentality and attitude shaping of future specialists in engineering and environmental protection on the "ecological crisis" and the current so-called "diseases of civilization"		
10.5. Seminar/Laboratory	- Case studies "in situ" - Creating plans for waste management	-Case studies; - Developing individual plans for waste management at the county level - project	30% 20%
10.6. Minimum performance standards			
Mastering the scientific information transmitted through lectures and practical work at an acceptable level. Obtaining the pass mark on continuous assessment is the condition of graduation.			

1 Cycle of studies - choose one of the three options: Bachelor/Master/Ph.D.

2 according to the educational plan

3 Discipline status (compulsoriness) - choose one of the options – **DI** (compulsory discipline) **DO** (optional discipline) **DFac** (facultative discipline).

4 One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Filled in on 04.09.2019

Course coordinator
PhD Lecturer Brasovean Ioan

Laboratory work/seminar coordinator
PhD Assist. Moldovan Bianca

Approved by the department on 05.092019

Head of the Department
Prof. PhD. Ioan Oroian