



Number. \_\_\_\_\_ from \_\_\_\_\_

Form UASVM -CN- 0107020222

## 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 and plant protection
1.5. Cycle Education <sup>1)</sup>	Bachelor
1.6. Specialization / Study program	Environmental Engineering
1.7. Form of education	IF

## 2. Information on the discipline

2.1. Name of the discipline	COMPUTER PROGRAMMING							
2.2. Holder of course activities	Lecturer Cristian Mălinaș Ph.D							
2.3. Holder of seminar / laboratory activities / project	Lecturer Cristian Mălinaș Ph.D							
2.4. Year of study	I	2.5. Semester	I	2.6. Evaluation type	Sumative	2.7. Discipline status	Content <sup>2)</sup>	DD
							Compulsoriness <sup>3)</sup>	DO

## 3. Total estimated time (teaching hours per semester)

3.1. Number of hours per week - frequency form	3	Out of which: 3.2. lecture	2	3.3. seminar / laboratory / project	1
3.4. Total hours of the educational plan	42	Out of which: 3.5. lecture	28	3.6. seminar / laboratory	14
<b>Distribution of the time fund</b>					hours
3.4.1. Study after manual, lecture support, bibliography and notes					16
3.4.2. Additional documentation in the library, on specialized electronic platforms and in the field					10
3.4.3. Preparation of seminars / laboratories / projects, topics, reports, portfolios and essays					14
3.4.4. Tutorials					10
3.4.5. Examinations					8
3.4.6. Other activities					
3.7. Total hours of individual study	58				
3.8. Total hours per semester	100				
3.9. Number of credits <sup>4)</sup>	4				

## 4. Preconditions (where applicable)

4.1. of curriculum	-
4.2. of skills	The student must have knowledge of mathematics and computer operation. Team communication skills, organization, use of the internet as a resource.

## 5. Conditions (if applicable)

5.1. for the course	Room equipped with computer, video projector, blackboard, internet access. Academic discipline is required throughout the duration of the lecture. No other activities are tolerated during the lecture, mobile phones must be closed.
5.2. for the seminar / laboratory / project	Room equipped with computer, video projector, blackboard. Academic discipline is imposed throughout the duration of the work.

**6. Cumulated specific competences**

<b>Professional skills</b>	<p>1. Analysis of environmental protection measures and elaboration of technical solutions for the prevention, reduction and elimination of pollution phenomena and for the optimal use of natural resources.</p> <p>2. Knowledge, understanding, explanation and interpretation. Developing and analyzing algorithms for problem solving. Design of mathematical models to describe phenomena. Programming in high level languages. Design of mathematical models for describing characteristic environmental phenomena.</p> <p>3. Instrumental-applicative - explanation, debate, case study, problematization, simulation of situations, working methods in group and individual, methods of thinking development and study of bibliography.</p> <p>4. Attitudes - manifesting positive and responsible attitudes towards the field of computer programming that helps to investigate economic or engineering problems in the environment field.</p>
<b>Transversal Competences</b>	<p>Applying the rules of rigorous and efficient work, manifesting responsible attitudes towards the scientific and didactic field, for the optimal and creative exploitation of its potential in specific situations, respecting the principles and norms of professional ethics.</p> <p>The efficient and effective conduct of team activities.</p> <p>Efficient use of information sources and resources of communication and assisted professional training, both in Romanian and in a language of international circulation.</p>

**7. Discipline objectives (based on the grid of specific skills accumulated)**

7.1. General objective of the discipline	Preparing students in the field of database design techniques and their use in the field of immediate engineering. Understanding and deepening the <b>concepts of relational database and client-server.</b>
7.2. Specific objectives	<p>Application of basic / advanced techniques in working with databases adapted to the specialization</p> <p>The use of SQL for the purpose of obtaining specific information from a database.</p> <p>Creating and executing stored procedures in order to automate database searches.</p> <p>Combining the methods learned for the elaboration of technical solutions vis-à-vis the problematic imposed by specialization.</p>

**8. Contents**

8.1. Course Number of hours - 28	Teaching methods	Remarks
1. Databases and database management systems. The relational model. Database design through normalization.	Lecture	1 lecture
2 Introduction to SQL. Database management. Client type software. Presentation of the concept of client-server database. Workbench application.	Lecture	1 lecture
3. Creating a database. Inserting and populating database tables. Modifying the tables. Deleting tables. MYSQL data types	Lecture	2 lectures
4. SQL syntax. SQL Commands: Select, Insert, Update, Delete. Where clause.	Lecture	2 lectures
5. Predefined operations and functions in MySQL. Queries performed on databases. Grouping and ordering the results queries. Group By and Order By instructions.	Lecture	2 lectures
6. Views and transactions.	Lecture	2 lectures
7. Procedures and functions. Defining a procedure. The parameters and body of a procedure	Lecture	2 lectures
8 Sliders and triggers.	Lecture	2 lectures
9. The normal curvature of a curve located on a surface. Main curves. Total curvature and average curvature. Curve lines and geodesic lines	Lecture	2 lectures



8.2. Practical work Number of hours – 14	Teaching Methods	Remarks
1. Presentation of concepts: relational database and client-server database methodology. Organization on working groups. Connect to a database using the Workbench client application. Deepening the structure of a database.	Application of theoretical notions on databases delivered	1 practical work
2. Popularity of tables in a database. Types of data related to the fields of a database. Example of Insert, Update and Delete commands.		1 practical work
3. Application of the Group By command. Aggregate type functions: Count, Sum, Avg, Min, Max. The Order By statement. Examples. Example of the Where command. Comparison operators		1 practical work
4. Types of relationships between tables in a database. Connection tables. Display information from a database within a view. Conducting queries based on views. Creation and execution of a stored procedure with the respective input and output parameters. Declaration of local variables in a procedure. If function.		3 practical work
5. MySQL Triggers. Creation and execution of triggers such as Insert, Update and Delete.		1 practical work
<b>Bibliography Required:</b>		
1. Sobolu Rodica. <i>Programare calculatoarelor</i> . Note de curs. 2018.		
2. Tehnologii Web-MySQL, Universitatea « Constantin Brancusi » Tg. Jiu, Facultatea de Inginerie, Departamentul de Automatica, Energie si Mediu.		
3. Learning MySQL. O'Reilly. 2007 ( <a href="http://dl.finebook.ir/book/55/10625.pdf">http://dl.finebook.ir/book/55/10625.pdf</a> )		
4. <a href="http://dev.mysql.com/tech-resources/articles/">http://dev.mysql.com/tech-resources/articles/</a>		
<b>Optional bibliography:</b> <a href="http://www.w3schools.com/sql/">http://www.w3schools.com/sql/</a>		

**9. Corroborating the contents of the discipline with the expectations of representatives of epistemic communities, professional associations and representative employers in the field related to the program**

The content of the discipline is in accordance with what is studied in other university centers in the country and abroad. The content and structure of the course are aspects adapted to the needs of the students and the requirements of the years of higher studies.

**10. Evaluation**

Activity type	10.1. Evaluation criterias	10.2. Methods of evaluation	10.3. Weight in the final grade
<b>10.4. Course</b>	Attendance and activity on classes  The logical, correct and coherent application of the notions learned	Verification during oral course (Assessment of answers to questions and problems proposed in the course and laboratory)	30%
<b>10.5. Seminar / Laboratory</b>	Attendance and activity on classes. Time to solve problems. Acquiring professional skills. The ability to analyze and interpret the results	Oral final exam (Evaluation test for professional competences accumulated)	70%
<b>10.6. Minimum standard of performance</b>			
Mastery of scientific information transmitted through lectures and seminars at an acceptable level.			

- <sup>1</sup> The study cycle - one of the variants is chosen - Bachelor / Master / Doctorate
- <sup>2</sup> The regime of the discipline (content) - for the license level one of the variants is chosen - DF (fundamental discipline), DD (discipline in the field), DS (specialized discipline), DC (complementary discipline).
- <sup>3</sup> The regime of the discipline (compulsory) - one of the variants is chosen - DI (compulsory discipline) DO (optional discipline) DFac (optional discipline).
- <sup>4</sup> A credit is equivalent to 25-30 hours of study (teaching activities and individual study)

Date completed  
05.09.2019

Course holder  
Lect. Mălina Cristian PhD.

Holder of laboratory works /  
seminars  
Lect. Mălina Cristian PhD.

Date of approval department  
in the department  
05.09.2019

Department Director  
Professor. Ioan Oroian PhD