

# Syllabus

## 1. Programme information

1.1. Institution	THE BUCHAREST UNIVERSITY OF ECONOMIC STUDIES
1.2. Faculty	Economic Cybernetics, Statistics and Informatics
1.3. Departments	Department of Economic Informatics and Cybernetics
1.4. Field of study	Economic Cybernetics, Statistics and Informatics
1.5. Cycle of studies	Licence
1.6. Education type	Full-time
1.7. Study programme	Economic Informatics
1.8. Language of study	Romanian
1.9. Academic year	2017-2018

## 2. Information on the discipline

2.1. Name	<b>Oracle DBMS</b>								
2.2. Code	<b>17.0205IF2.2-0006</b>								
2.3. Year of study	<b>2</b>	2.4. Semester	<b>2</b>	2.5. Type of assessment	<b>Exam</b>	2.6. Status of the discipline	<b>O</b>	2.7. Number of ECTS credits	<b>4</b>
2.8. Leaders	C(C)	<b>prof.univ.dr. BĂRĂ Adela</b>					bara.adela@ie.ase.ro		
	C(C)	<b>conf.univ.dr. DIACONIȚA Vlad</b>					diaconita.vlad@ie.ase.ro		
	C(C)	<b>conf.univ.dr. Simonca (Botha) Iuliana</b>					iuliana.botha@ie.ase.ro		
	S(S)	<b>conf.univ.dr. Simonca (Botha) Iuliana</b>					iuliana.botha@ie.ase.ro		
	S(S)	<b>conf.univ.dr. DIACONIȚA Vlad</b>					diaconita.vlad@ie.ase.ro		
	S(S)	<b>asist.univ.dr. OPREA SIMONA-VASILICA</b>					simona.oprea@csie.ase.ro		

## 3. Estimated Total Time

3.1. Number of weeks	14.00		
3.2. Number of hours per week	4.00	of which	
		C(C)	2.00
		S(S)	2.00
3.3. Total hours from curriculum	56.00	of which	
		C(C)	28.00
		S(S)	28.00
3.4. Total hours of study per semester (ECTS*25)	100.00		
3.5. Total hours of individual study	44.00		

<i>Distribution of time for individual study</i>	
Study by the textbook, lecture notes, bibliography and student's own notes	16.00
Additional documentation in the library, on specialized online platforms and in the field	4.00
Preparation of seminars, labs, assignments, portfolios and essays	20.00
Tutorials	2.00
Examinations	2.00
Other activities	

#### 4. Prerequisites

4.1. of curriculum	Databases, Computer Programming, Operating Systems
4.2. of competences	C2 Efficient use of computing resources, operating and the Internet C4 Development of software components using data structures, algorithms, techniques and programming languages evolved

#### 5. Conditions

for the C(C)	<ul style="list-style-type: none"> <li>•Lectures are held in rooms with internet access and multimedia teaching equipment.</li> <li>•The final average of the discipline is calculated only if the student has obtained grade 5 in the exam.</li> <li>•In the review session the exam will consist of a theoretical and retaking the seminar test or project if they were previously failed.</li> <li>•The mark for the exam and the seminar has to be minimum 5</li> </ul>
for the S(S)	<ul style="list-style-type: none"> <li>•Seminars are conducted in rooms equipped with computers and Internet access in order to connect to Oracle Database 11g/12c server.</li> <li>•Computers should have the following software products installed: Oracle SQL Developer, PL/SQL Developer.</li> <li>•Seminar activity requires the acquisition of four (4) mandatory notes: 2 practical tests, project evaluation, continuous assessment.</li> <li>•The final average of the discipline is calculated only if the student has obtained grade 5 in the seminar</li> </ul>

#### 6. Acquired specific competences

	C5	Development of software components using data structures, algorithms, techniques and modern programming languages.
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#### 7. Objectives of the discipline

7.1. General objective	Provide students with the fundamentals of databases management systems - DBMS
7.2. Specific objectives	<ol style="list-style-type: none"> <li>1. Know the features and facilities of DBMS, exemplified in Oracle.</li> <li>2. Studying the features and architecture of the relational SGBD in order to have criteria for choosing one or another.</li> <li>3. Identify the main functions implemented in the relational SGBD for efficient application in the economy.</li> <li>4. PL/SQL programming in Oracle to increase organizational performance.</li> <li>5. Acquiring working skills with the Oracle APEX development environment.</li> </ol>

#### 8. Contents

8.1. C(C)		Teaching/Work methods	Recommendations for students
1	DBMS, fundamental concepts. The role, evolution and objectives	Multimedia + oral presentation	
2	Functions, architecture and classifying DBMS	Multimedia + oral presentation	
3	Relational DBMS, characteristics, mechanisms, characterizing PL/SQL	Multimedia + oral presentation	The exemplification is done using PL/SQL
4	Composite data types, the implicit and explicit cursor	Multimedia + oral presentation	
5	Exceptions	Multimedia + oral presentation	
6	Stored subprograms, functions and procedures	Multimedia + oral presentation	
7	PL/SQL packages, part 1	Multimedia + oral presentation	
8	PL/SQL packages, part 2	Multimedia + oral presentation	
9	Triggers, part 1	Multimedia + oral presentation	
10	Triggers, part 2	Multimedia + oral presentation	
11	Advanced PL/SQL programming. Dynamic SQL	Multimedia + oral presentation	
12	Implementing database optimization and protection using PL/SQL	Multimedia + oral presentation	
13	Case studies and applications in APEX	Multimedia + oral presentation	
14	Final review	Multimedia + oral presentation	

***Bibliography***

- M.Velicanu, Sisteme de gestiune a bazelor de date prin exemple, ASE, București, 2013, România
- Ion Lungu (coord.), Adela Bâra, Anca Andreescu, Anda Belciu, Constanța Bodea, Iuliana Botha, Vlad Diaconița, Alexandra Florea, Tratat de baze de date. Vol II. Sisteme de gestiune a bazelor de date, ASE, Bucuresti, 2015, România
- A.Bara, I.Botha, V.Diaconita, I.Lungu, A.Velicanu, Baze de date. Limbajul PL/SQL, ASE, Bucuresti, 2009, România

8.2. S(S)		Teaching/Work methods	Recommendations for students
1	PL/SQL, general characterization, variable types	Practical demonstration	The exemplification is done using PL/SQL
2	PL/SQL block, SQL statements in PL/SQL	Practical demonstration	
3	The fundamental control structures	Practical demonstration	
4	The cursor	Practical demonstration	
5	PL/SQL exception	Practical demonstration	
6	Practical test 1	Computer test	
7	PL/SQL subprograms: functions	Practical demonstration	
8	PL/SQL subprograms: procedures	Practical demonstration	
9	Packages	Practical demonstration	
10	Triggers	Practical demonstration	
11	Practical test 2	Computer test	
12	Developing database applications using Apex – part 1	Practical demonstration	The exemplification is done using PL/SQL and integrated into Apex
13	Developing database applications using Apex – part 2	Practical demonstration	
14	Developing database applications using Apex – part 3 Project evaluations	Practical demonstration Project evaluations	

**Bibliography**

- M.Velicanu, Sisteme de gestiune a bazelor de date prin exemple, ASE, București, 2013, România
- A.Bara, I.Botha, V.Diaconita, I.Lungu, A.Velicanu, Baze de date. Limbajul PL/SQL, ASE, București, 2009, România
- \*\*\*, Oracle Database Online Documentation 11g Release 1 (11.1) / Database Administration, [https://docs.oracle.com/cd/B28359\\_01/appdev.111/b28370/toc.htm](https://docs.oracle.com/cd/B28359_01/appdev.111/b28370/toc.htm)

### 9. Corroboration of the contents of the discipline with the expectations of the representatives of the epistemic community, of the professional associations and representative employers in the field associated with the programme

1. Graduates must be aware of the fundamental aspects of software support (DBMS) for developing database applications.
2. IT employers need to develop effective database applications, especially those relational.

### 10. Assessment

Type of activity	Assessment criteria	Assessment methods	Percentage in the final grade
10.1. C(C)	- Logical thinking; -Work in progress: the course content, answer questions, ideas, suggestions etc.; - - Assimilation of specialized terminology	Written evaluation (exam). It is necessary to receive at least the grade 5 (five) in the written exam in order to pass the subject.	50.00

10.2. S(S)	<ul style="list-style-type: none"> <li>- Applying the acquired knowledge</li> <li>- Interest in individual study</li> <li>- Activity during the seminars</li> <li>- PL/SQL programming abilities</li> <li>- Apex developing abilities</li> </ul>	Practical test 1 (35% of the seminar grade) Practical test 2 (35% of the seminar grade) Project evaluation: developing a database application using Oracle solutions (20% of the seminar grade) Active participation during seminars (10% of the seminar grade) To be able to graduate the subject, the seminar average must be at least 5 (five).	50.00
10.3. Final assessment	<ul style="list-style-type: none"> <li>• Applying the acquired knowledge</li> </ul>	The final evaluation is done by calculating the average between the exam grade and the seminar grade. To graduate, both exam and seminar grade must be at least 5(five).	
10.4. Modality of grading	Whole notes 1-10		
10.5. Minimum standard of performance	At a minimum, the student must: <ul style="list-style-type: none"> <li>- Know the fundamental aspects of the DBMS, the PL/SQL language and the way applications are developed in APEX;</li> <li>- Participate in practical tests and develop a project;</li> <li>- Receive at least the grade 5 (five) in both exam and seminar in order to pass the subject.</li> </ul>		

Date of listing,  
01/18/2019

Signature of the discipline leaders,

Date of approval in the  
department

Signature of the Department Director,