1. Data related to the study program	
1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and Information Technology
1.5 Study cycle	Master
1.6 Study program/Qualification	Management in Information Technology / Master of Science in
	Engineering

1 Data valatad ta tha stud

2. Data related to the subject

2.1 Name of the su	bject	-	I.T	'. Pro	oject Management			
2.2 Holder of the subject Prof. dr			of. dr	. ing. Győrödi Robert Ş	tefan			
2.3 Holder of the academic seminar/laboratory/project			Pro	of. dr	. ing. Győrödi Robert Ş	tefan		
2.4 Year of study	Ι	2.5 Semest	er	1	2.6 Type of the evaluation	Ex	2.7 Subject regime	SYD

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

5

3.1 Number of hours per week		3	of which: 3.2	1	3.3 academic	0/0/2
			course		seminar/laboratory/project	
3.4 Total of hours from the curriculu	m	42	Of which: 3.5	14	3.6 academic	0/0/28
			course		seminar/laboratory/project	
Distribution of time						hours
Study using the manual, course suppo	ort, b	oibliog	graphy and hand	writter	notes	20
Supplementary documentation using the library, on field-related electronic platforms and in field-					30	
related places						
Preparing academic seminaries/laboratories/ themes/ reports/ portfolios and essays					23	
Tutorials						6
Examinations						4
Other activities.						
3.7 Total of hours for 8.	3					
individual study						
3.9 Total of hours per 1	25					
semester						

4. Pre-requisites (where applicable)

3.10 Number of credits

4.1 related to the	(Conditions)
curriculum	Computer programming and programming languages I
	Computer programming and programming languages II
4.2 related to skills	Structured programming in the C language or object programming in C ++ / C # /
	Java

5.1. for the development of	Classroom equipped with video projector and computer.
the course	The course can be held face to face or online

5.2.for the development of		Laboratory equipped with video projector and computers that are connected				
the academic		to the internet, and they have installed Oracle 12c software.				
semina	ary/laboratory/project	Laboratory equipped with:				
		- computers that are connected to the Internet and have installed the				
		following programs: Visual Studio, Eclipse for Java, SQL Business				
		Intelligence Development Studio, Microsoft Project				
		- access to the virtual environment in which the Microsoft Dynamics 365				
		BC / FO & SCM suite is installed (the latest versions) with all the necessary				
		service infrastructure and tools				
		The laboratory can take place face to face or online				
6. Spec	ific skills acquired					
-	C5. Projects preparation a	and management in the field of Computers and Information Technology and related				
	fields by applying					
	C6. Developing skills of f	inanciar marketing, quality management and customer relashionship management				
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Pr						
	CT1 Applying principles norms and values of professional ethics in the spirit of the law to ensure					
al	the reputation of the pro-	ofession				
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ISV S						
raı kill						
L						

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	•	Learning the main concepts of IT project management and how they are used by
general		organizations (both in the private and public sector) as well as the tools and techniques
objective of		needed to manage IT projects.
the subject		
7.2 Specific	-	This course introduces key principles of IT project management, including an
objectives		introduction to Agile and Scrum approaches. At the same time, tools and techniques
		will be presented to initiate, plan and successfully manage IT projects and programs.
		Through a combined learning approach to courses, labs, and case studies, students will
		be able to understand all the essentials of good project management.

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Introduction to project management	Powerpoint presentation	1 hour
2. Business strategy and project business cases	with the help of the video	1 hour
3. Introduction to Agile Predictive and	projector; free discussions;	1 hour
Development Life Cycle		
4. Breakdown structures (work, product, cost)		1 hour
5. Key planning tools - planning, estimating		1 hour
and managing resources		
6. Stakeholder identification, analysis and		1 hour
management		
7. Management skills in project management -		1 hour
influence, leadership, team building and		
conflict management		
8. Managing the risk and the problems of a		1 hour
project		
9. Project planning. Applications and tools		2 hours
used in industry		

10. Project monitoring and control techniques.		4 hours					
Bibliography							
 Ken Laudon, Jane Laudon, Management Information Systems: Managing the Digital Firm (13th Ed), Prentice Hall, 2013, ISBN 0133050696 							
1. Information Technology Project Managen 4. ISBN-13: 978-1-337-10135-6	. Information Technology Project Management, 9th Edition - Kathy Schwalbe, ISBN-10: 1-337-10135- 4, ISBN-13: 978-1-337-10135-6						
. The APM Project Management Body of Knowledge, 6th Edition, (2012), Association for Project							
Management	Management						
3. J Cadle and D Yeates; Project Managemen	t for Information Systems (20	008) Pearson Education Limited					
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bazele de date, Editura Universitații din C	Dradea, Oradea, România, 201	12, ISBN 978-606-10-0733-2.					
5. Brian Larson, Delivering Business Intelli 2012 ISBN 0071759387	gence with Microsoft SQL S	berver 2012 3/E, McGraw-Hill,					
6. James M. Wahlen, Financial Reporting, F	inancial Statement Analysis a	and Valuation. 8th Ed. Cengage					
Learning, 2014, ISBN 1285190904	j ~~~ ·						
7. Michael Alexander, Jared Decker, Bernar Analysts For Dummies 2014 JSBN 1118	rd Wehbe, Microsoft Busine	ss Intelligence Tools for Excel					
8. Adam Aspin, High Impact Data Visualiza	tion with Power View. Powe	er Map. and Power BI. Apress.					
2014, ISBN 1430266163							
 Brian Larson, Mark Davis, Dan English, V 2012. ISBN 0071780823 	Visualizing Data with Micros	oft Power View, McGraw-Hill,					
10. <u>https://e.uoradea.ro/course/view.php?id=6</u>	252 Materials (courses and page)	roject)					
8.2 Academic laboratory	Teaching methods	No. of hours/ Observations					
8.3. Project	Teaching methods	No. of hours/ Observations					
8.3. Project 1. General concepts used in project	Teaching methods Powerpoint presentation	No. of hours/ Observations 2 hours					
 8.3. Project 1. General concepts used in project management 	Teaching methods Powerpoint presentation with the help of the video presentation	No. of hours/ Observations 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 2. The life set of the life 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, aost) 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning estimating and 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 4 hours 4 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 2 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a project. Identification of risk elements in a 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a project. Identification of risk elements in a project 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 2 hours 2 hours 2 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a project. Identification of risk elements in a project 8. Project planning. Analysis, planning, and 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 4 hours 2 hours 4 hours 4 hours 4 hours 4 hours 4 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a project. Identification of risk elements in a project 8. Project planning. Analysis, planning, and elaboration of the structure of a project 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 4 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a project. Identification of risk elements in a project 8. Project planning. Analysis, planning, and elaboration of the structure of a project 9. Project monitoring and control techniques 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 4 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a project. Identification of risk elements in a project 8. Project planning. Analysis, planning, and elaboration of the structure of a project 9. Project monitoring and control techniques 10. Final evaluation 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 4 hours 2 hours 4 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a project. Identification of risk elements in a project 8. Project planning. Analysis, planning, and elaboration of the structure of a project 9. Project monitoring and control techniques 10. Final evaluation 	Teaching methods Powerpoint presentation with the help of the video projector; free discussions;	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 2 hours 4 hours 2 hours 4 hours 2 hours 4 hours 2 hours					
 8.3. Project 1. General concepts used in project management 2. Business strategy 3. The life cycle of a project. Agile strategy 4. Breakdown structures (work, product, cost) 5. Planning tools - planning, estimating and managing resources 6. Project team management - influence, leadership, team building, conflict management 7. Risk and problem management in a project. Identification of risk elements in a project 8. Project planning. Analysis, planning, and elaboration of the structure of a project 9. Project monitoring and control techniques 10. Final evaluation Bibliography 1. The APM Project Management Body Management E book available 	 Teaching methods Powerpoint presentation with the help of the video projector; free discussions; A A A B B C C C Knowledge, 6th Edition, 	No. of hours/ Observations 2 hours 2 hours 4 hours 2 hours					

- Limited. E book available.
 The Microsoft Dynamics AX Team, Inside Microsoft Dynamics AX 2012 R3, Microsoft Press,
- 3. The Microsoft Dynamics AX Team, Inside Microsoft Dynamics AX 2012 R3, Microsoft Press, 2014, ISBN 073568510X
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- Mohamed Aamer, Microsoft Dynamics AX 2012 Financial Management, Packt Publishing, 2013, ISBN 1782177205
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- Kamalakannan Elangovan, Microsoft Dynamics AX 2012 Reporting Cookbook, Packt Publishing, 2013, ISBN 1849687722
- 9. Microsoft CustomerSource Portal (<u>https://mbs.microsoft.com/customersource</u>) Materiale e-Learning
- 10. <u>https://e.uoradea.ro/course/view.php?id=6252</u> Materials (courses and project)

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the final mark
10.4 Course	Minimum required conditions for passing the exam (mark 5): in accordance with the minimum performance standard: 50% of the subjects from the final exam should be correctly solved For 10: 100% of the subjects from the final exam should be correctly solved	Semester exam – oral	60%
10.5 Academic seminar	-	-	-
10.6 Laboratory	-	-	-
10.7 Project	Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard: 50% of the practical application should be correctly solved - For 10: 100% of the practical application should be correctly solved	Practical applications - oral presentation	40%
10.8 Minimum performan Course: 50% of the maxin Academic seminar: Laboratory: Project: 50% of the maxin	nce standard: mum score of the final exam mum score of the project eve	aluation	

Course instructor

Head of department

Completion date: 17.05.2021 prof. dr. ing. Győrödi Robert E-mail: <u>rgyorodi@uoradea.ro</u> conf. dr. ing. Pater Mirela

Date of endorsement in the department:

Date of endorsement in the Faculty Board:

1. Data related to the study program	
1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and information technology
1.5 Study cycle	Master
1.6 Study program/Qualification	Management in Information Technology / Master of Science in
	Engineering

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2. Data related to the subject

2.1 Name of the su	bject	-	Re	latio	nal Databases			
2.2 Holder of the subject Prof			of. dr	. ing. Győrödi Cornelia	Auro	ra		
2.3 Holder of the academic seminar/laboratory/project			Pro	of. dr	. ing. Győrödi Cornelia	Auro	ra	
2.4 Year of study	Ι	2.5 Semeste	er	1	2.6 Type of the evaluation	Ex	2.7 Subject regime	THD

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

6

3.1 Number of hours per week		4	of which: 3.2	2	3.3 academic	0/1/1
			course		seminar/laboratory/project	
3.4 Total of hours from the curricul	lum	56	Of which: 3.5	28	3.6 academic	0/14/1
			course		seminar/laboratory/project	4
Distribution of time						hours
Study using the manual, course sup	port,	biblio	graphy and hand	writtei	notes	38
Supplementary documentation using the library, on field-related electronic platforms and in field-					22	
related places						
Preparing academic seminaries/laboratories/ themes/ reports/ portfolios and essays					28	
Tutorials						4
Examinations						2
Other activities.						
3.7 Total of hours for	94					
individual study						
3.9 Total of hours per	150					
semester						

4. Pre-requisites (where applicable)

3.10 Number of credits

a requisites (milere	upplicucie)
4.1 related to the	(Conditions)
curriculum	
4.2 related to skills	

5.1. for the development of	Classroom equipped with video projector and computer - The course can
the course	be held face to face or online
5.2.for the development of	Laboratory equipped with video projector and computers that are connected
the academic	to the internet, and they have installed Oracle 12c software. The laboratory
seminary/laboratory/project	can take place face to face or online

6. Spec	ific skills acquired
ofessional skills	 C1. Software components design and their management through databases. C2. Advanced hardware and software design for computing systems and networks. C5. Projects preparation and management in the field of Computers and Information Technology and related fields by applying The course contributes to the acquisition of skills in the field of design and programming of database applications
Transversal Pr skills	

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The general objective of the subject	 Acquiring skills in the field of designing and programming database applications by studying the principles and concepts of relational databases and non-relational as well as database architectures and systems.
7.2 Specific objectives	 Studying the principles and concepts of relational databases, SQL relational model characteristics, PL / SQL procedural language, database application programming libraries, database system architectures, parallel databases, distributed databases, database object-oriented data and No-SQL databases.

8. Contents*

8.1 Course	Teaching methods	No. of hours/
		Observations
1. Modeling relational databases	Powerpoint presentation with the	2 hours
2. Caracteristicile modelului relațional	help of the video projector; free	2 hours
3. Relational languages	discussions;	4 hours
4. Libraries and Database Programming Languages		2 hours
5. Database system architectures		2 hours
6. Libraries and Languages for Programming		4 hours
7. Database system architectures		2 hours
8. Parallel database systems		4 hours
9. Distributed database systems		2 hours
10. NoSQL databases		4 hours

Bibliography

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- 3. Greg Riccardi "*Principles of Database Systems with Internet and Java Applications*", Addison Wesley (December 14, 2002), ISBN-13: 978-0321185563.
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- 13. Neo4J Documentation: <u>www.neo4j.com</u>
- 14. <u>https://www.javatpoint.com/rdbms-vs-cassandra</u>
- 15. http://docs.oracle.com/cd/NOSQL/html/index.html
- 16. <u>https://e.uoradea.ro/course/view.php?id=6249 Materials (courses and laboratories)</u>

8.2 Academic laboratory	Teaching methods	No. of hours/
0.2 Meddenne hubbratory	reaching methods	Observations
1. Data modeling using Oracle Database Designer	Oral presentation.	1 hour
2. SQL language. Data manipulation operations		1 hour
3. Querying a data table. Group functions	Students work with the following tools:	1 hour
4. Subqueries	- Oracle Server (Oracle Database	1 hour
5. User interface management (windows, menus). Developer / 2000.	12, Oracle Developer Suite 12g), MySQL, or SQL Server 2018.	1 hour
6. Stored procedures and functions, data collections.	The students are assessed by a	1 hour
7. Query optimization	practical test using computer from	1 hour
8. Parallel processing technologies	laboratory topics.	1 hour
9. Databases distributed in Oracle. Data replication		1 hour
using Oracle stream		
10. NoSQL document databases. Case study - Mongo		1 hour
DB.		
11. NoSQL key-value databases. Case Study - Oracle		1 hour
NoSQL Database		
12. Column-oriented NoSQL databases (Columnar).		2 hour
Case study - Apache Cassandra.		
13. Final test		1 hour

Bibliography

1. Ion Lungu, Anca Andreescu, Adela Bâra, Anda Belciu, Constanța Bodea, Iuliana Botha, Vlad Diaconița, Alexandra Florea, **Cornelia Győrödi**, "Tratat de baze de date. Sisteme de gestiune a bazelor de date ", Volumul 2, Editura ASE, 2015, ISBN 978-606-505-472-1, nr. pag 375.

- 2. Győrödi Cornelia, Lungu Ion "Sisteme de baze de date avansate", Editura Universității din Oradea, 2011, ISBN 978-606-10-0447-8, nr. pag 350.
- 3. Oracle Berkley DB <u>http://www.oracle.com/technetwork/database/database-</u>
 - technologies/berkeleydb/overview/index.html
- 4. Mongo DB Documentation: <u>www.mongodb.com</u>
- 5. Neo4J Documentation: <u>www.neo4j.com</u>
- 6. <u>https://www.javatpoint.com/rdbms-vs-cassandra</u>
- 7. http://docs.oracle.com/cd/NOSQL/html/index.html
- 8. Oracle Application Express (<u>https://iacademy.oracle.com/</u>)
- 9. https://e.uoradea.ro/course/view.php?id=6249 Materials (courses and laboratories)

8.3. Project	Teaching methods	No. of hours/
		Observations
Implementing a practical application from a list	Oral presentation	1 hours/
published on the online platform		week
https://e.uoradea.ro/course/view.php?id=6249		
The project will be implemented in one of the		14 hours
development environments: Oracle Server (Oracle		
Database 11g or Oracle12, Oracle Developer Suite 12),		
MySQL 8, or SQL Server 2018, or in one of the NoSQL		
databases (MongoDB, Cassandra, etc).		
For each project, both the practical application and a		
description in the form of a report will be presented.		
The report will contain: (a) Analysis and specification		
of the requirements and operation of the designed		
application. (b) Description and interpretation of results		
obtained.		

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

10. Evaluation

Type of activity	ity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the final mark
10.4 Course		Minimum required conditions for passing the exam (mark 5): in accordance with the minimum performance standard: 50% of the subjects from the final exam should be correctly solved For 10: 100% of the subjects from the final exam should be correctly solved	Semester exam – written	50%
10.5 Academ	ic seminar	Minimum required conditions for passing the examination (grade 5): in accordance with the minimum performance standard - For 10:	-	-
10.6 Laborato	ory	Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard: 50% of the problems from the final laboratory	Oral/written	15%

	test should be correctly solved - For 10: 100% of the problems from the final laboratory test should be correctly solved				
10.7 Project	A practical application	Project Evaluations - oral	35%		
	project covering the	presentations			
	topics mentioned in the				
	course and laboratory list				
10.8 Minimum performa	nce standard:				
Course: 50% of the maxim	mum score of the final exam	1			
Academic seminar:					
Laboratory: 50% of the maximum score of the laboratory evaluations					
Project: 50% of the maxim	many and an of the Dusie of Tra	alustions			
	mum score of the project Ev	aluations			

Course instructor

Head of department

Completion date: 14.05.2021 prof. dr. ing. Cornelia Győrödi E-mail: <u>cgyorodi@uoradea.ro</u> conf. dr. ing. Pater Mirela

Date of endorsement in the department:

Date of endorsement in the Faculty Board:

1. Data related to the study program	
1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and information technology
1.5 Study cycle	Master
1.6 Study program/Qualification	Management in Information Technology / Master of Science in
	Engineering

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2. Data related to the subject

2.1 Name of the sul	bject	-	Inf	orm	ation systems and deci	ision	support	
2.2 Holder of the su	ıbjec	t	Pro	of. dr	. ing. Győrödi Robert Ş	tefan		
2.3 Holder of the academic seminar/laboratory/project			Pro	of. dr	. ing. Győrödi Robert Ş	tefan		
2.4 Year of study	Ι	2.5 Semeste	er	1	2.6 Type of the evaluation	Ex	2.7 Subject regime	THD

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

5

3.1 Number of hours per week	3	of which: 3.2	2	3.3 academic	0/1/0
		course		seminar/laboratory/project	
3.4 Total of hours from the curriculum	42	Of which: 3.5	28	3.6 academic	0/14/0
		course		seminar/laboratory/project	
Distribution of time					hours
Study using the manual, course support,	biblio	graphy and hand	writtei	n notes	20
Supplementary documentation using the library, on field-related electronic platforms and in field-					30
related places		-		-	
Preparing academic seminaries/laborato	Preparing academic seminaries/laboratories/ themes/ reports/ portfolios and essays				
Tutorials					6
Examinations					4
Other activities.					
3.7 Total of hours for 83					
individual study					
3.9 Total of hours per 125					
semester					

4. Pre-requisites (where applicable)

3.10 Number of credits

er i e i equisices (mileie	apprivate)
4.1 related to the	(Conditions)
curriculum	Computer programming and programming languages I
	Computer programming and programming languages II
4.2 related to skills	Structured programming in the C language or object programming in C ++ / C # /
	Java

5.1. for the development of	Classroom equipped with video projector and computer.
the course	The course can be held face to face or online

5.2.for the development of		Laboratory equipped with video projector and computers that are connected				
the academic		to the internet, and they have installed Oracle 12c software.				
semina	ary/laboratory/project	Laboratory equipped with:				
		- computers that are connected to the Internet and have installed the				
		following programs: Visual Studio, Eclipse for Java, SQL Business				
		Intelligence Development Studio.				
		- access to the virtual environment in which the Microsoft Dynamics 365				
		BC / FO & SCM suite is installed (the latest versions) with all the necessary				
		service infrastructure and tools				
		The laboratory can take place face to face or online				
6. Spec	ific skills acquired					
	C5. Projects preparation a	and management in the field of Computers and Information Technology and related				
	fields by applying					
	C6. Developing skills of f	inanciar marketing, quality management and customer relashionship management				
lls						
ski						
al s						
ono						
ssi						
ofe						
Pro						
	CT1 Applying principles norms and values of professional ethics in the spirit of the law to ensure					
al	the reputation of the profession					
ers	the reputation of the pre	<i>AC551011.</i>				
IS V						
ran cill						
T s						

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	• Learning the concepts underlying the design and implementation of complex
general	information systems in enterprises, as well as the use of knowledge discovery tools
objective of	for decision support
the subject	
7.2 Specific	• The course presents the concepts used in complex computer systems used in various
objectives	industries, how to organize enterprises for a more efficient implementation of these
	systems and how to map the various industrial processes in computer systems.

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Introduction to information systems	Powerpoint presentation with	2 hours
2. Enterprise, E-business and collaboration	the help of the video	2 hours
3. Information Systems, Organizations and Strategies	projector; free discussions;	2 hours
4. Ethical and social issues related to information		2 hours
systems		
5. IT Concepts, Infrastructure and Emerging		2 hours
Technologies		
6. Business Intelligence		2 hours
7. Telecommunications and networks		2 hours
8. Information systems, control and security		2 hours
9. Enterprise applications		2 hours
10. E-commerce		2 hours
11. Decision support systems		2 hours
12. Building information systems		2 hours
13. Project and risk management		2 hours
14. Global systems management		
Bibliography		

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	Education, 2020, ISBN 1292296569	a avançata da daçaonarira a auna	stintalar din bazala da				
	date. Editura Universitatii din Oradea, Oradea, Româr	ia. 2012. ISBN 978-606-10-073	3-2.				
	3. Jamie MacLennan, ZhaoHui Tang, Bogdan Crivat, D	ata Mining with Microsoft SQL	Server 2008, Wiley,				
	2008, ISBN 0470277742						
	4. Brian Larson, Delivering Business Intelligence with N ISBN 9781259641480	Aicrosoft SQL Server 2016 4/E,	, McGraw-Hill, 2016,				
	 Alberto Ferrari, Marco Russo, Microsoft Excel 2013 Bu 2013, ISBN 0735676348 	uilding Data Models with PowerF	Pivot, Microsoft Press,				
	Kasper de Jonge, Dashboarding and Reporting with Power Pivot and Excel: How to Design and Create a Financial Dashboard with PowerPivot – End to End, Holy Macro! Books, 2014, ISBN 1615470271						
	 Wayne Winston, Microsoft Excel 2019 Data Analysis ISBN 1509305882 	s and Business Modeling, 6/e, N	Aicrosoft Press, 2019,				
	8. James M. Wahlen, Financial Reporting, Financial S Learning 2018 ISBN 1337614688	tatement Analysis and Valuation	on, 9th Ed, Cengage				
	 Michael Alexander, Jared Decker, Bernard Wehbe, Mic For Dummies 2014 ISBN 1118821521 	crosoft Business Intelligence Too	ols for Excel Analysts,				
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	2018, ISBN 0133128903 13 Jan H. Witten, Fibe Frank, Mark A. Hall, Christopher J. Pal. Data Mining, Practical Machine Learning Tools						
	and Techniques, 4/e, Morgan Kaufmann, 2016, ISBN 0128042915						
	14. Jiawei Han, Micheline Kamber, Data Mining Concepts	and Techniques 3rd Ed, Morgan	Kaufmann Publishers,				
	San Francisco, USA, 2011, ISBN 0123814790	Advanced Topics Prontice Ha	11 Now Jorson 2003				
	ISBN 0130888923	Advanced Topics, Trenuce IIa	<i>u</i> , new jeiscy, 2005,				
	16. <u>https://e.uoradea.ro/course/view.php?id=6250</u>	Materials (courses and labor	atories)				
8.2	Academic laboratory	Teaching methods	No. of hours/				
			Observations				
1.	Introduction to the Microsoft Dynamics 365	Powerpoint presentation with	1 hour				
	Business Central / FO & SCM	the help of the video					
2.	Introduction to the SureStep implementation	projector, nee discussions,	1 hour				
	methodology						
3.	Simulation of the implementation of the Dynamics		1 hour				
	365 Business Central / FO & SCM in a virtual						
	enterprise - parameterization of Financial						
	Accounting modules						
4.	Simulation of the implementation of the Dynamics		1 hour				
	365 Business Central / FO & SCM in a virtual						
	enterprise - parameterization of Management						
	modules						
5.	Simulation of the implementation of the Dynamics		1 hour				

1 hour

1 hour

365 Business Central / FO & SCM in a virtual enterprise - parameterization of production modules

Dynamics 365 Business Central / FO & SCM

Dynamics 365 Business Central / FO & SCM -

6. Configuration and extending the Microsoft

7. Configuration and extending the Microsoft

adapting to specific business processes

8. Wa	ys to configure and extend the Microsoft		1 hour	
Dy	namics 365 Business Central / FO & SCM -			
ada	pt the standard interface			
9. Wa	ys to configure and extend the Microsoft		1 hour	
Dy	namics 365 Business Central / FO & SCM -			
ada	pt the web interface			
10. Wa	ys to configure and extend the Microsoft		1 hour	
Dy	namics 365 Business Central / FO & SCM - the			
pos	ssibility of implementing processes using mobile			
tec	hnologies (iOS, Android, Windows)			
11. Usi	ing and expanding Dynamics 365 Business		1 hour	
Cer	ntral / FO & SCM Business Intelligence facilities			
- ex	kisting data cubes, ways to customize			
12. Usi	ing Excel 2019 and Power BI to analyze data		1 hour	
fro	m the Dynamics 365 Business Central / FO &			
SC	M			
13. Me	thods of interactive presentation of some KPIs		1 hour	
fro	m Dynamics 365 Business Central / FO & SCM			
usi	ng Excel 2019 and Power BI			
14. Fin	14. Final evaluation 1 hour			
Bibliog	graphy			
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2.	Győrödi Robert, Győrödi Cornelia, Recunoasterez	9780001007332. 1 formelor si Descoperirea c	unostintelor. <i>Editura</i>	
	Mediamira, Cluj, România, 2005, ISBN 973713088X.	, 10111101 și 2000p011100 0	anoşuniştici, Zanana	
3.	The Microsoft Dynamics AX Team, Inside Microsoft 073568510X	Dynamics AX 2012 R3, Microso	oft Press, 2014, ISBN	
4.	Andreas Luszczak, Using Microsoft Dynamics AX 20 2013, ISBN 3658017082	12: Updated for Version R2, Spr	inger Vieweg; 3rd ed.	
5.	Keith Dunkinson, Andrew Birch, Implementing Micro Publishing, 2013, ISBN 1849687048	osoft Dynamics AX 2012 with S	Sure Step 2012, Packt	
6.	Mohamed Aamer, Microsoft Dynamics AX 2012 Fi 1782177205	nancial Management, Packt Pul	blishing, 2013, ISBN	
7.	Simon Buxton, Microsoft Dynamics AX 2012 R2 Adu 1849688060	ninistration Cookbook, Packt Pu	blishing, 2013, ISBN	
8.	Kamalakannan Elangovan, Microsoft Dynamics AX ISBN 1849687722	2012 Reporting Cookbook, Par	ckt Publishing, 2013,	
9.	Microsoft CustomerSource Portal (https://mbs.microsoft	oft.com/customersource) – Mater	riale e-Learning	
10.	https://e.uoradea.ro/course/view.php?id=6250	Materials (courses and labo	ratories)	
8.3. Pro	oject	Teaching methods	No. of hours/ Observations	

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

•

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the
			final mark
10.4 Course	Minimum required	Semester exam – oral	60%
	conditions for passing		
	the exam (mark 5): in		
	accordance with the		

	minimum performance standard: 50% of the subjects from the final exam should be correctly solved For 10: 100% of the subjects from the final exam should be correctly solved		
10.5 Academic seminar	Minimum required conditions for passing the examination (grade 5): in accordance with the minimum performance standard - For 10:	-	-
10.6 Laboratory	Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard: 50% of the practical applications should be correctly solved - For 10: 100% of the practical applications should be correctly solved	Practical applications - oral presentation	40%
10.7 Project	-	-	-
10.8 Minimum performan Course: 50% of the maxin Academic seminar: Laboratory: 50% of the n Project:	nce standard: mum score of the final exam naximum score of the labora	tory evaluations	

Course instructor

Head of department

<u>Completion date:</u> 17.05.2021 prof. dr. ing. Győrödi Robert E-mail: <u>rgyorodi@uoradea.ro</u>

conf. dr. ing. Pater Mirela

Date of endorsement in the department:

Date of endorsement in the Faculty Board:

1. Data related to the study program	1
1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and information technology
1.5 Study cycle	Master (2 nd cycle)
1.6 Study program/Qualification	Management in Information Technology / Master Engineer

1. Data related to the study program

2. Data related to the subject

2.1 Name of the sul	bject	•	Information management and multimedia					
2.2 Holder of the su	ubject	t	Assoc. Prof. Eng.PhD. Gabor Gianina					
2.3 Holder of the academic Assoc.Prof. Eng.PhD. Gabor Gianina seminar/laboratory/project								
2.4 Year of study	2 nd	2.5 Semes	nester 2 nd 2.6 Type of the Examination 2.7 Subject Sy regime D					Synthesis Discipline

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

6

3.1 Number of hours per week	4	of which: 3.2 course	2	3.3 laboratory	2
3.4 Total of hours from the curriculun	n 42	of which: 3.5 course	28	3.6 laboratory	28
Distribution of time					hours
Study using the manual, course suppo	rt, biblio	graphy and handwritten	notes		20
Supplementary documentation using t	he librar	y, on field-related electro	onic plat	forms and in field-	32
related places					
Preparing academic seminaries/laboratories/ themes/ reports/ portfolios and essays					32
Tutorials					4
Examinations					6
Other activities.					
3.7 Total of hours for 94					
individual study					
3.9 Total of hours per 15	0				

4. Pre-requisites (where applicable)

3.10 Number of credits

semester

Il I I e I equisites (il ilei	e applicacie)
4.1 related to the	(Conditions)
curriculum	
4.2 related to skills	

5.1. for the development of	face to face or online
the course	projector and access to Internet
5.2.for the development of	face to face or online
the academic	every student has access to a computer connected to Internet and with
seminary/laboratory/project	access to the applications/software used during the labs
6. Specific skills acquired	

Professional skills	CP1 . Software components design and their management through databases CP3. Design and management of secure computing systems.
Transversal skills	

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	 Know and understand the information management concept in multimedia systems,
general	how to use and develop multimedia applications and presentations, use the acquired
objective of	knowledge to develop a multimedia web presentations using XHTML+TIME, SMILE,
the subject	HTML5+CSS3 and Javascript
7.2 Specific	
objectives	
5	

8. Contents*

8.1 Course	Teaching methods	No. of hours/
		Observations
Characteristic elements of XHTML+Time, XHTML+Time document	lecture & debate	2
structure, timing attributes		
Association of XHTML + Time elements and methods used to insert	lecture & debate	2
multimedia objects		
HTML+Time support for synchronized execution and methods used	lecture &debate	2
to add animation effects		
Transition effects associated to XHTML+Time elements, multimedia	lecture & debate	2
elements display modes		
Document Object Model for XHTML+Time & define pattern	lecture & debate	2
presentation		
SMIL (Synchronized Multimedia Integration Language) - basic	lecture & debate	4
concepts, main modules, the structure of a SMIL document		
SMIL methods used to include multimedia objects, multimedia file	lecture & debate	2
types		
Animating SMIL elements and adaptive alternative presentation	lecture & debate	2
SMIL - hyperlinks and element synchronization	lecture & debate	2
SMIL - transition effects and document processing	lecture & debate	2
The structure of a multimedia web presentation, HTML5 multimedia	lecture & debate	2
elements used to develop and implement a web presentation		
CSS3 and Javascript elements used in an interactive multimedia	lecture & debate	2
presentation		
Information management of multimedia systems, the quality of	lecture & debate	2
multimedia systems, Information management in distributed		
multimedia systems		
Bibliography		

Julie C. Meloni, HTML, CSS, and JavaScript All in One, 3rd edition, Editura SAMS, 2019, ISBN 32372186 Jon Duckett, Web Design with HTML, CSS, JavaScript and jQuery Set, John Wiley and Sons Inc., 2014, ISBN10 1118907442, ISBN13 9781118907443

http://homepages.cwi.nl/~media/SMIL/Tutorial/SMILTut.html / accessed 1.09.2012 J.C. Teague, *DHTML și CSS*, Editura Teora, București, 2007

Sabin Buraga, <i>Tehnologii XML</i> , Editura Polirom, Iaşi, 2006 M.Brut, S.Buraga, <i>Prezentări multimedia pe Web</i> , Editura Polirom, 2004 Ștefan Trausan-Matu, <i>Prelucrarea documentelor XML</i> , Editura Teora, București, 2003							
Bogdan Ghilic, Marian Stoica, eActivitatile în societatea informationala, Editura Economica, Bucuresti, 2002							
8.3 Laboratory	Teaching methods	No. of hours/					
		Observations					
HTML, XHTML, CSS	discuss examples and	2					
	assign problems to solve						
XHTML + Time document structure, XHTML+ Time timing	discuss examples and	2					
attributes, methods used to asociate actions to elements	assign problems to solve						
XHTML + Time - methods used to insert multimedia objects	discuss examples and assign problems to solve	2					
XHTML + Time - methods used for temporal containers and	discuss examples and	2					
special animation elements	assign problems to solve						
XHTML + Time – methods used to assign transition attributes.	discuss examples and	2					
multimedia display and properties	assign problems to solve						
XHTML + Time - events special objects and case studies	discuss examples and	2					
	assign problems to solve						
SMIL – specific modules, document structure	discuss examples and	2					
1	assign problems to solve						
SMIL – presentation patterns, methods used to insert	discuss examples and	2					
multimedia objects	assign problems to solve						
SMIL – asociere animație elemente & sincronizare elemente	discuss examples and assign problems to solve	2					
SMIL – establish links and synchronize elements	discuss examples and assign problems to solve	2					
HTML5 - define the structure of a web multimedia	discuss examples and	2					
presentation develop and implement a web presentation using	assign problems to solve	_					
HTML5 multimedia elements							
CSS3 - include CSS3 elements in the developed and	discuss examples and	2					
implemented web presentation	assign problems to solve	-					
Include Javascript multimedia elements in the implemented	discuss examples and	2					
web presentation	assign problems to solve	2					
Show the web multimedia presentation developed and	discuss examples and	2					
implemented with HTML 5 CSS3 and Javascrint	assign problems to solve	_					
Bibliography							
Julie C. Meloni, HTML, CSS, and JavaScript All in One. 3rd edition	Editura SAMS 2019 ISBN	32372186					
Jon Duckett, Web Design with HTML, CSS, JavaScript and iOuery Se	t. John Wiley and Sons Inc.	2014. ISBN10					
1118907442, ISBN13 9781118907443	.,	,					
http://homepages.cwi.nl/~media/SMIL/Tutorial/SMILTut.html / accessed 1.09.2012							
T.Gugoiu, HTML, XHTML, CSS si XML prin exemple, Editura Teora, Bucuresti, 2005							
Adrian Vasilescu, Tehnologiile XML, Editura Economica, BucureSti. 2005							

M.Brut, S.Buraga, Prezentări multimedia pe Web, Editura Polirom, Iași, 2004

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

 through the information contained in the lecture and labs the students gain consistent knowledge matching with the required skills

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the
			final mark

10.4 Course	Minimum required conditions for passing the exam (mark 5): in accordance with the minimum performance standard For 10: in accordance with the maximum performance standard	face to face or online oral based on assignments and the implementation of a web presentation	50%
10.6. Laboratory	Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard For 10: in accordance with the maximum performance standard	face to face or online oral based on assignments and laboratory work	50%
10.8 Minimum performat Course: 5 Laboratory: 5	nce standard:	-	

Completion date: 22.09.2020

Date of endorsement in the department: 25.09.2020

Date of endorsement in the Faculty Board:

1. Data related to the study program

1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and information technology
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management in Information Technology / Master of Science in
	Engineering

2. Data related to the subject

2.1 Name of the subject		Inter	Internet Programming				
2.2 Holder of the subject		Prof.univ.dr.ing. Zmaranda Doina					
2.3 Holder of the acader	nic	Prof.univ.dr.ing. Zmaranda Doina					
seminar/laboratory/proj	ect						
2.4 Year of study I	2.5	2	2.6 Type of	Ех	2.7 Subject	THD -	
	Semester		the evaluation	Examination	regime	Thoroughgoing	
					-	Discipline	

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

5

3.1 Number of hours per week	4	of which: 3.2 course	2	3.3 academic seminar/laboratory/project	2
3.4 Total of hours from the curriculum	56	Of which: 3.5 course	28	3.6 academic seminar/laboratory/project	28
Distribution of time					hours
Study using the manual, course support, b	ibliogr	aphy and handw	ritten	notes	21
Supplementary documentation using the library, on field-related electronic platforms and in field-					20
related places	-			-	
Preparing academic seminaries/laboratorie	es/ the	mes/ reports/ por	tfolios	and essays	20
Tutorials					2
Examinations					6
Other activities.					
3.7 Total of hours for individual 69					
study					
3.9 Total of hours per semester 125					

4. Pre-requisites (where applicable)

3.10 Number of credits

4.1 related to the curriculum	(Conditions)
4.2 related to skills	Object-oriented programming skills and user interface design skills for web
	applications

• • • • • • • • • • • • • • • • • • •	
5.1. for the development of	- the course can be held face to face (classroom equipped with computer
the course	and video projector) or online; slide-based presentation
	- attendance at least 50% of the course
5.2.for the development of	- the laboratory can be held face to face (laboratory room equipped with
the academic	computers and NET Framework 4.7 + / Visual Studio 2019) or online
seminary/laboratory/project	- mandatory presence at all laboratories
	- a maximum of 4 laboratory works can be recovered during the semester
	(30%)
	- the frequency of laboratory hours below 70% leads to the re-done the
	discipline

6. Specific skills acquired								
Professional skills	C1. Design of software components and their management through databasesC4. Advanced design of Internet and multimedia applications							
Transversal skills								

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The general objective of the subject	The objective of the course is to provide knowledge on technologies for designing and implementing Internet applications: web application architecture, server-side technologies, client-side technologies, frameworks and tools used for web application development
7.2 Specific objectives	 The course aims to present the basic architecture of web applications as well as some of the specific technologies used for the development of Internet applications based on MVC architecture together with existing frameworks for development and other related technologies. Even if the presented implementations are focused on MicroSoft technologies (ASP.NET MVC), this does not restrict the generality of the presented concepts. The project familiarizes students with practical aspects regarding the design and implementation of an MVC web application

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
Introduction to web programming. Web		2
application architecture. Particularities. Specific		
components		
Technologies for web applications. Client / server		2
Client side technologies: hrowers, HTML		2
LavaScript /JavaScript librarias front and		2
development frameworks, client-side extensions		
Server-side technologies. Server-level scripting:		4
PHP and PHP development frameworks; J2EE /		
JAVA and adjacent development frameworks:		
Spring Boot (Java); ASP.NET Core and ASP.NET		
MVC, Ruby on Rails (Ruby), Django (Python),		
Express (Node.js / JavaScript). Hybrid	Presentation of the course	
technologies: GWT (Google Web Toolkit)	concepts and examples on	
JavaScript language - advanced concepts.	slides, face to face or online	2
Progressive development of the client side (front-		
end) of a web application. JavaScript and the		
DOM. JavaScript objects. JavaScript and data		
Validata customar laval data using JavaScript		2
InvaScript functions, Events in InvaScript, Using		2
JavaScript and Aiax libraries Development		
patterns in JavaScript.		
ASP.NET MVC. MVC architecture in web		2
applications. MVC and the structure of ASP.NET		
MVC applications. Development based on the		
principles of SOLID, DRY		
Fundamentals of ASP.NET MVC: Routing in		4
MVC. Levels in MVC: Controller, View, Model		

Controller level. Model validation. Action filters.						
Authorization and authentication. View level.						
Syntax Razor. Lambda expressions. Model level.						
Object relational mapper (ORM) template. Entity		4				
Framework EF. Repository pattern.						
Development of MVC Database First Model		2				
First Code First applications		2				
A SD NET web A DL DESTful applications		2				
ASP.NET web API. RESTILL applications.		2				
Customer level optimization.						
Bibliography						
1. D. Zmaranda – Programare Internet – Edit	ura Universității din Oradea, 200	pg., ISBN 978-606-10-1422-4 -				
electronic format CD, 2014						
2. G.Mclean Hall – Adaptive Code via C# -	Agile coding with dessign patter	ns and SOLID principles. ISBN				
978-0-7356-8320-4. MicroSoft Press, 2014		1 1 /				
3 Porter Scobey Pawan Lingras – Web Prog	ramming and Internet Technologi	ies – An E-Commerce Approach				
Iones & Bartlett Learning LLC ISBN 17	2 078 0 7637 7387 8 2013					
- Jones a Dartieu Leanning LLC, ISBN - 1.	3 378-0-7037-7387-8, 2013	tili- în din lette mare NIET Editema				
4. Dorin Zanarie, Rodica Doina Zmaranda, D	ezvoltarea aplicațiilor soltware u	unzand platforma .ine I, Editura				
ASE, ISBN 978-606-505-547-6, 2012						
5. D.Zmaranda et. Al, New Trends in Mobile	and Web Development $2012 - A$	A publication of Lahti University				
of Applied Sciences Series C – ISSN 1457	-8328 ISBN 978-951-827-141-6,	2012				
6. Tim Wright - A Hands-on Guide to the Fu	indamentals of Modern JavaScrip	ot, ISBN-13:978-0-321-83274-0,				
Addison Wesley, 2012						
7. Jess Chadwick, Todd Snyder, Hrusikesh Pa	nda, Programming ASP.NET MV	C 4, O'Reilly Media, ISBN 978-				
1-449-320031-7, 2012	, , ,	, , ,				
8 https://www.simform.com/best-frontend-fr	ameworks/					
0 http://iavascript_reference_info						
10 https://backrio/blog/wab_dovalonment_free	noworka					
11. https://macki.io/biog/web-development-mai	lieworks					
11. http://www.umi.org/						
12. http://www.webratio.com/						
13. http://www.w3.org/TR/wsdl						
14. http://en.wikipedia.org/wiki/Universal_Des	14. http://en.wikipedia.org/wiki/Universal_Description_Discovery_and_Integration					
15. http://jquery.com/	15. http://jquery.com/					
16. http://tomcat.apache.org						
17. http://struts.apache.org						
18 https://spring.jo/projects/spring-boot						
19 http://www.oracle.com/technetwork/iava/index.html						
20 http://nhp.net/						
21. http://www.ocp.not/						
21. http://www.asp.net/ 22. http://www.tutoriolongint.com/iguory/iguo	my along htm					
22. https://www.tutornaispoint.com/jquery/jque	ary-ajax.ittii					
23. https://developers.google.com/web-toolkit/						
24. https://dotnet.microsoft.com/apps/aspnet/m	vc					
25. https://docs.microsoft.com/en-us/aspnet/my	c/overview/getting-started/introc	luction/getting-started				
26. http://www.asp.net/mvc/tutorials/mvc-5/da	tabase-first-development/creating	g-the-web-application				
27. https://developer.mozilla.org/en-US/docs/L	earn/Server-side/First_steps/Web	_frameworks				
28. <u>https://uoradea-</u>						
my.sharepoint.com/personal/rodica_zmara	nda_didactic_uoradea_ro/_layout	s/15/onedrive.aspx?id=%2Fpers				
onal%2Frodica zmaranda didactic uorade	a ro%2FDocuments%2FPI-Mas	ter				
8.2 Academic project	Teaching methods	No. of hours/ Observations				
Initial elements for the project Constal analysis of	Teaching methods					
the availant		4				
the project.						
Familiarization with the development environment	Students choose a project	4				
/ framework / language	theme - an MVC application					
Project application design: structure, functionality,	and carry out the	4				
choice of implementation mode: database first,	choice of implementation mode: database first, development stages of the					
model first, code first	project under the guidance of					
Project and/ the galatile of the teacher face to face &						
controller level view level or online						
Project application testing and deployment						
Project application final account at						
Project evaluation, final assessment 4						
D Shall a na sa basa						

 D. Zmaranda – Programare Internet – Editura Universității din Oradea, 200 pg., ISBN 978-606-10-1422-4 – format electronic CD, 2014

- 2. Dorin Zaharie, Rodica Doina Zmaranda, Dezvoltarea aplicațiilor software utilizând platforma .NET, Editura ASE, ISBN 978-606-505-547-6, 2012
- 3. <u>https://uoradea-</u> <u>my.sharepoint.com/personal/rodica_zmaranda_didactic_uoradea_ro/_layouts/15/onedrive.aspx?id=%2Fpers_onal%2Frodica%5Fzmaranda%5Fdidactic%5Fuoradea%5Fro%2FDocuments%2FPI%2DMaster______</u>

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

 The content of the discipline is an important requirement of most employers in the field of software development. The discipline provides the necessary theoretical and practical concepts in this regard.

10. Evaluation

Type of	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent
activity			from the
			final mark
10.4 Course	Minimum required conditions for passing the	Written exam - the	40 %
	exam (mark 5): in accordance with the	assessment can be done face	
	minimum performance standard: it is	to face or online	
	necessary to deal broadly with the approached	Students elaborate and present	
	subject, without, however, detailing the	a paper on a given research	
	presented concepts, existence of a minimal	topic within the field of the	
	bibliography, a brief presentation	course through which they	
	For 10: it is necessary the complete, detailed	deepen, analyze and present	
	approach of the proposed subject (possibly,	state of the art regarding the	
	comparative analyzes/discussions), extended	certain topic	
	bibliography, elaborated presentation		
10.6	Minimum required conditions for promotion	Practical application – oral	60 %
Laboratory	(grade 5): in accordance with the minimum	evaluation - the assessment	
2	performance standard: broadly knowing the	can be done face to face or	
	options for approaching the project, going	online. After the presentation	
	through the design stages, without completing	of the project completed	
	the implementation; functional	during the semester, each	
	implementation in proportion of 50% of the	student receives a grade for	
	project	the project. The project is also	
	For 10, going through all the design stages,	presented in electronic format	
	with the completion of the project	in the form of: PowerPoint	
	implementation, 100% functional	presentation, textual	
	implementation is required	description of the project and	
		source code	

10.8 Minimum performance standard:

Course:

- knowledge and understanding the concepts underlying the design and implementation of web applications
- familiarization with the most popular design patterns used in web applications
- familiarization with the technologies used in the development of Internet applications: client-side technologies, server-side technologies

Laboratory:

- acquiring practical skills and knowledge of using the most current frameworks used for web application development
- use of the concepts presented in the development and implementation of a practical project

Completion date: 22.09.2020

Date of endorsement in the

department: 25.09.2020

Date of endorsement in the Faculty Board: 28.09.2020

1. Data relateu to the study program	L Contraction of the second seco
1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and Information Technology
1.5 Study cycle	Master (2 nd cycle)
1.6 Study program/Qualification	Management in Information Technology / Master of Science in
	Engineering

1. Data related to the study program

2. Data related to the subject

2.1 Name of the subject		Data acquisition, Processing and Management						
2.2 Holder of the subject		As	Assistant Professor dr. Otto Poszet					
2.3 Holder of the academic seminar/laboratory/project		As	sista	nt Professor dr. Otto	Posze	t		
2.4 Year of study	II	2.5 Semest	er	3	2.6 Type of the evaluation	Ex.	2.7 Subject regime	THD

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

6

3.1 Number of hours per week		4	of which: 3.2	2	3.3 academic	0/2/0
			course		seminar/laboratory/project	
3.4 Total of hours from the curriculu	um	5	Of which: 3.5	28	3.6 academic	0/28/
		6	course		seminar/laboratory/project	0
Distribution of time	Distribution of time			hours		
Study using the manual, course supp	Study using the manual, course support, bibliography and handwritten notes			notes	30	
Supplementary documentation using the library, on field-related electronic platforms and in field-		26				
related places						
Preparing academic seminaries/laboratories/ themes/ reports/ portfolios and essays			32			
Tutorials			0			
Examinations	Examinations			6		
Other activities.						
3.7 Total of hours for	94					
individual study						
3.9 Total of hours per	150					

4. Pre-requisites (where applicable)

3.10 Number of credits

semester

in a requisites (in the	
4.1 related to the	(Conditions)
curriculum	
4.2 related to skills	

5.1. for the development of	The course can be held face to face or online.
the course	
5.2. for the development of	
the academic	The laboratory can be carried out face to face or online
seminary/laboratory/project	

6. Spec	ific skills acquired
Professio- nal skills	 CP2 Advanced hardware and software design of computer systems and networks. CP3 Design and management of secure computer systems
Transver- sal skills	□ CT3 Identifying opportunities for continuous training and efficient use of learning resources and techniques for their own development.

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	The course aims to present advanced knowledge used in data acquisition techniques,
general	process control, digital signal processing, with a special focus on hardware and
objective of	highlighting the principles found in most industrial acquisition systems.
the subject	
7.2 Specific	In each chapter, after the presentation of the theoretical principles, concrete examples of
objectives	realization are studied (National Instruments acquisition systems, microcontrollers,
	digital signal processing systems).
	The laboratory aims to familiarize students with the technique of data acquisition and
	control (hardware and software) and to develop their own data acquisition programs,
	using the notions learned in the course.

8. Contents*

8.1 Course	Teaching	No. of hours/
	methods	Observations
1. Definition of a data acquisition and control system. Introductory notions,	lecture / debate	2
definition of an DAQS, block diagram, data acquisition terminology		
2. Signal conditioning circuits 1. Passive conditioning circuits, dividers,	lecture / debate	2
bridges, filters		
3. Signal conditioning circuits 2. Active conditioning circuits, instrumental	lecture / debate	2
operational amplifiers. Digital signal processing.		
4. Digital encodings used in data acquisition systems. Introduction to code	lecture / debate	2
theory. Error correcting codes used in data acquisition.		
5. Digital-to-analog converters 1. Characteristics. Construction and	lecture / debate	2
architecture of DAC. DAC for unipolar codes		
6. Digital-to-analog converters 2. DAC for bipolar codes. Voltage-	lecture / debate	2
frequency converters. Frequency-voltage converters.		
7. Analog-to-digital converters 1. Characteristics, ADC with parallel type	lecture / debate	2
comparison. ADC with serial-parallel comparison, ADC with serial comparison,		
ADC with integration.		
8. Sampling and hold circuits 1. SH characteristics, Architecture of SH.	lecture / debate	2
Control of a SH-DAC assembly		
9. Mono and multi-channel data acquisition systems. Construction and	lecture / debate	2
control of DAQS single channel, multi-channel. Different types.		
10. Mono and multi-channel data distribution systems. Architecture and	lecture / debate	2
control of single-channel, multi-channel DDS. Different types.		
11. Use of microcontrollers in data acquisition and processing.	lecture / debate	2
12. Acquisition, processing, analysis and generation of audio signals.	lecture / debate	2
13. Acquisition, processing, analysis and generation of video signals.	lecture / debate	2
14. Fault tolerant data acquisition systems. Use of error correcting codes in	lecture / debate	2
SADC. Security of a SADC.		
Bibliography	•	
1 http://www.didatec.ro/sites/uo/		

/sistemedeachizi%C5%A3ie%C5%9Fideprelucrareadatelor635082205368373861/default.aspx

2. Biswajit Ray, "An Instrumentation and Data Acquisition Course for Electronics Engineering Technology Students", Dept. of Physics & Engineering Technology, Bloomsburg University of Pennsylvania, Bloomsburg, PA 17815, http://www.ni.com/pdf/academic/us/journals/An_Instrumentation.pdf

3. http://physweb.bgu.ac.il/COURSES/SignalNoise/data_aquisition_fundamental.pdf

4. Vetterli, "Foundations of Signal Processing", 31/07/2014, ISBN 13 – 9781107038608

5. Theodoridis, "Image and Video Compression and Multimedia", Academic Press Library in Signal Processing, Volume 5, 29/05/2014, ISBN-13: 9780124201491

6. Giannakopoulos and Pikrakis, "Introduction to Audio Analysis, A MATLAB® Approach", 26/02/2014, ISBN-13: 9780080993881,

7. M. Muţ, O. Poszet, "Sisteme de achiziţie şi control", Îndrumător de laborator, Universitatea din Oradea, 1995
8. Marinela Muţ, "Sisteme de achiziţie şi control", Universitatea din Oradea, 2000

9. M.Muţ, O. Poszet, "Sisteme de achiziţie și control", Îndrumător de proiectare, Universitatea din Oradea, 1995 10. Veljko Potkonjak, Michael Gardner, Victor Callaghan, Pasi Mattila, Christian Guetl, Vladimir M. Petrovic, Kosta Jovanovic, "Virtual laboratories for education in science, technology, and engineering: A review", Computers & Education, Vol. 95, Issue C, pp. 309-327, April 2016.

11. Peter Tiernan, "Enhancing the learning experience of undergraduate technology students with LabVIEW software", Computers & Education, Vol. 55, Issue 4, pp. 1579-1588, December 2010.

12. Xie Bing, Chen Chang-xin, Zheng Bin, "Design of Data Acquisition and Signal Processing System Based on LabVIEW", Modern Electronics Technique, Issue 14, pp. 173-175, 2011.

13. Wei Zhan, Jay R. Porter, Joseph A. Morgan, "Experiential Learning of Digital Communication Using LabVIEW", IEEE Transactions on Education, Vol. 57, No. 1, pp. 34-41, February 2014

 Gilbert-Rainer Gillich, Doina Frunzaverde, Nicoleta Gillich, Daniel Amariei, "The use of virtual instruments in engineering education", WCES-2010, Procedia Social and Behavioral Sciences, Vol. 2, Issue 2, pp. 3806-3810, 2010.
 Linggang Liu, Junhui Li, Luhua Deng, "Design of Data Acquisition System Based on LabVIEW", Advanced Materials Research, Vol. 569, pp. 808-813, 2012.

16. Hong min Wang , Dan dan Li, Ping Xue, Jie Zhu, Hai bo Li, "LabVIEW-based data acquisition system design",

IEEE 2012 International Conference on Measurement, Information and Control (MI	C), pp. 689-692, N	fay 18-20, 2012.
8.2 Academic seminar/laboratory/project	Teaching	No. of hours/
	methods	Observations
1. Overview of LabPC + and myDAQ acquisition board. Familiarization of students with the acquisition systems of the laboratory. Testing the acquisition system and performing some measurements with the oscilloscope. NI Elvis, NI	Experimental study, practical activity	4
MAX.		
2. LabView programming environment. Introduction. Block diagram and Front Panel user interface. Configuration-based virtual tools. Creating applications in LabView.	Experimental study, practical activity	4
3. Data structures in LabView. Boolean, numerical indicators and controls, strings, matrices. Basic operations with these structures. View results, virtual tool library to create a user interface as intuitive as possible. Complex mathematical operations in LabView. Library of mathematical functions. String operations. Operations with composite structures (matrices, records). LabView applications, exercises.	Experimental study, practical activity	4
4. Programming and control structures in LabView. Decision structures, ramifications, repetitive structures, loops. Programming exercises in LabView.	Experimental study, practical activity	4
5. Acquisition and generation of signals in LabView. Simulation of waveforms, setting parameters by configuring VIs and then from the application program in real time. Capture and display waveforms using configuration-based VIs. Exercises and measurements.	Experimental study, practical activity	4
6. Analysis and generation of audio signals in LabView using the computer's sound card. Generation of frequencies corresponding to musical notes and spectral analysis of different waveforms. LabView Signal Analysis and Processing Library. Exercises in LabView.	Experimental study, practical activity	4
7. Image processing in LabView. 2D and 3D graphics in LabView. Exercises. Checking and concluding the situation at the laboratory.	Experimental study, practical activity	4
Bibliography		

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sistemedeachizi%C5%A3ie%C5%9Fideprelucrareadatelor635082205368373861/default.aspx

2. Biswajit Ray, "An Instrumentation and Data Acquisition Course for Electronics Engineering Technology Students", Dept. of Physics & Engineering Technology, Bloomsburg University of Pennsylvania, Bloomsburg, PA 17815, http://www.ni.com/pdf/academic/us/journals/An_Instrumentation.pdf

3. http://physweb.bgu.ac.il/COURSES/SignalNoise/data aquisition fundamental.pdf

4. Vetterli, "Foundations of Signal Processing", 31/07/2014, ISBN 13 - 9781107038608

5. Theodoridis, "Image and Video Compression and Multimedia", Academic Press Library in Signal Processing, Volume 5, 29/05/2014, ISBN-13: 9780124201491

6. Giannakopoulos and Pikrakis, "Introduction to Audio Analysis, A MATLAB® Approach", 26/02/2014, ISBN-13: 9780080993881.

7. M. Mut, O. Poszet, "Sisteme de achizitie și control", Îndrumător de laborator, Universitatea din Oradea, 1995 8. Marinela Mut, "Sisteme de achizitie si control", Universitatea din Oradea, 2000

9. M.Mut, O. Poszet, "Sisteme de achiziție și control", Îndrumător de proiectare, Universitatea din Oradea, 1995 10. Veljko Potkonjak, Michael Gardner, Victor Callaghan, Pasi Mattila, Christian Guetl, Vladimir M. Petrovic, Kosta

Jovanovic, "Virtual laboratories for education in science, technology, and engineering: A review", Computers & Education, Vol. 95, Issue C, pp. 309-327, April 2016.

11. Peter Tiernan, "Enhancing the learning experience of undergraduate technology students with LabVIEW software", Computers & Education, Vol. 55, Issue 4, pp. 1579-1588, December 2010.

12. Xie Bing, Chen Chang-xin, Zheng Bin, "Design of Data Acquisition and Signal Processing System Based on LabVIEW", Modern Electronics Technique, Issue 14, pp. 173-175, 2011.

13. Wei Zhan, Jay R. Porter, Joseph A. Morgan, "Experiential Learning of Digital Communication Using LabVIEW", IEEE Transactions on Education, Vol. 57, No. 1, pp. 34-41, February 2014

14. Gilbert-Rainer Gillich, Doina Frunzaverde, Nicoleta Gillich, Daniel Amariei, "The use of virtual instruments in engineering education", WCES-2010, Procedia Social and Behavioral Sciences, Vol. 2, Issue 2, pp. 3806-3810, 2010. 15. Linggang Liu, Junhui Li, Luhua Deng, "Design of Data Acquisition System Based on LabVIEW", Advanced Materials Research, Vol. 569, pp. 808-813, 2012.

16. Hong min Wang, Dan dan Li, Ping Xue, Jie Zhu, Hai bo Li, "LabVIEW-based data acquisition system design", IEEE 2012 International Conference on Measurement, Information and Control (MIC), pp. 689-692, May 18-20, 2012.

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program •

		final mark
Minimum required conditions for passing the exam (mark 5): in accordance with the minimum performance standard - For 10:	Exam. The evaluation can be done face to face or online.	50%
Minimum required conditions for passing the examination (grade 5): in accordance with the minimum performance standard - For 10:		
Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard - For 10:	Reports. The evaluation can be done face to face or online.	50%
ce standard: 50%		
	Minimum required conditions for passing the exam (mark 5): in accordance with the minimum performance standard - For 10: Minimum required conditions for passing the examination (grade 5): in accordance with the minimum performance standard - For 10: Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard - For 10: minimum performance standard - For 10: minimum performance standard - For 10:	Minimum required conditions for passing the exam (mark 5): in accordance with the minimum performance standard - For 10:Exam. The evaluation can be done face to face or online.Minimum performance standard - For 10:For 10:Exam. The evaluation can be done face to face or online.Minimum required conditions for passing the examination (grade 5): in accordance with the minimum performance standard - For 10:Reports. The evaluation can be done face to face or online.Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard - For 10:Reports. The evaluation can be done face to face or online.Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard - For 10:Reports. The evaluation can be done face to face or online.e standard: 50%- For 10:

10. Evaluation

Completion date: 22.09.2020

Date of endorsement in the department: 25.09.2020

Date of endorsement in the Faculty Board: 27.09.2020

1. Data related to the study program	
1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and Information Technology
1.5 Study cycle	Master (2 nd cycle)
1.6 Study program/Qualification	Management in Information Technology / Master of Science in
	Engineering

1. Data related to the study program

2. Data related to the subject

		0	-					
2.1 Name of the subject			Cr	itica	l systems managemen	t		
2.2 Holder of the subject			pro	of. dr	. ing. Vari-Kakas Ştefa	n		
2.3 Holder of the academic seminar/laboratory/project			pro	of. dr	. ing. Vari-Kakas Ştefa	in		
2.4 Year of study	2	2.5 Semest	er	1	2.6 Type of the evaluation	Ex.	2.7 Subject regime	THD

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

3.1 Number of hours per week			of which: 3.2	2	3.3 academic	0/1/0
			course		seminar/laboratory/project	
3.4 Total of hours from the curriculu	ım	42	Of which: 3.5	24	3.6 academic	0/14/0
			course		seminar/laboratory/project	
Distribution of time						hours
Study using the manual, course supp	ort, b	oibliog	graphy, and handv	vritte	n notes	42
Supplementary documentation using	g the l	library	y, on field-related	elect	ronic platforms and in field-	7
related places		-			-	
Preparing academic seminaries/laboratories/ themes/ reports/ portfolios and essays				28		
Tutorials						3
Examinations						3
Other activities.						
3.7 Total of hours for	83					
individual study						
3.9 Total of hours per 1	125					
semester						

4. Pre-requisites (where applicable)

3.10 Number of credits

	appileacie)
4.1 related to the	
curriculum	
4.2 related to skills	

5

5.1. for the development of	The course can be conducted face to face with a projector or online.
the course	
5.2.for the development of	The laboratory can be carried out face to face or online, using personal
the academic	computers.
seminary/laboratory/project	

6. Specific skills acquired

Professional skills		Learning advanced methods for error control and fault tolerance in critical fault computing systems Comparative analysis of constructive solutions for safety critical systems Use of methods and tools for assessing the reliability and risk of critical systems Modeling safety critical systems Application of fault tolerance techniques to the design of failure critical systems
Transversal skills	•	Honorable, responsible, ethical conduct in the spirit of the law to ensure the reputation of the profession Clear and concise written description of the results in the field of activity, including by consulting documentation in a language of international circulation

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	 Knowledge of the main concepts and techniques of fault tolerance and analysis
general	in critical systems
objective of	
the subject	
7.2 Specific	 Deepening the theoretical notions of designing critical calculation systems for
objectives	defects through examples and concrete exercises
	 Knowledge of methods for assessing the dependability

8. Contents*

8.1 Course	Teaching	No. of hours/
	methods	Observations
Embedded systems. Examples of critical systems.	Lecture	2
Functional safety.	Lecture	2
Dependability.	Lecture	2
Risk analysis.	Lecture	2
Design of critical systems.	Lecture	2
Critical systems architecture.	Lecture	2
Design of fail-safe systems.	Lecture	2
Design of fail-operate systems (I).	Lecture	2
Design of fail-operate systems (II).	Lecture	2
The influence of the human factor.	Lecture	2
Integrated testing.	Lecture	2
Anomaly detection.	Lecture	2
Coverage indicators.	Lecture	2
Verification by simulation.	Lecture	2

Bibliography

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6. Birmann, Kenneth P.: Reliable Distributed Systems. Technologies, Web Services and Applications, Springer Science and Business Media, Inc., 2005.

Springer Serence und Dubiness Freduct, men, 20001		
8.2 Laboratory	Teaching	No. of hours/
	methods	Observations
Defining the requirements of critical systems. Standards.	Exemplification,	2
	debate	

Case study (I).	Exemplification,	2
	debate	
FMEA method.	Exemplification,	2
	debate	
Fault tree.	Exemplification,	2
	debate	
Case study (II).	Exemplification,	2
	debate	
The risk matrix.	Exemplification,	2
	debate	
Conclusions and closure of the situation.	Reports defense,	2
	questions	
Bibliography		
1. Software tools for safety design: http://www.safeware-eng.com	; https://www.weib	ull.com/

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

 The discipline provides theoretical and practical knowledge directly applicable in the computer industry and in the field of information technology services.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the
			final mark
10.4 Course	Minimum required	Exam. Written paper.	70%
	conditions for passing	The evaluation can be	
	the exam (mark 5): in	done face to face or	
	accordance with the	online.	
	minimum performance		
	standard		
10.5 Academic seminar	Minimum required		
	conditions for passing		
	the examination (grade		
	5): in accordance with		
	the minimum		
	performance standard		
10.6 Laboratory	Minimum required	Report. Defence. The	Condition + 30%
	conditions for promotion	evaluation can be done	
	(grade 5): in accordance	face to face or online.	
	with the minimum		
	performance standard		
10.7 Project			
10.8 Minimum performan	nce standard:		
Course: Pass mark from 5	50% of the requirements me	t.	
Academic seminar:			
Laboratory: Pass.			
Project:			

Completion date:

01.09.2020

Date of endorsement in the department:

25.09.2020

Date of endorsement in the Faculty Board: 28.09.2020

1. Data related to the study program

1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and Information Technology
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management in Information Technology /Master of Science in
	Engineering

2. Data related to the subject

2.1 Name of the subject			Qu	ality managemen	t in IT		
2.2 Holder of the subject			As	As. Prof. PhD eng. Novac Ovidiu-Constantin			
2.3 Holder of the academic			As	. Prof. PhD eng. N	lovac Ovidiu-C	onstantin	
seminar/laboratory/project							
2.4 Year of study	Ι	2.5	2	2.6 Type of the	Ex	2.7	SYD - Synthesis
		Semester		evaluation	Examination	Subject	Disciplines
						regime	

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

3.1 Number of hours per week		of which: 3.2 course	1	3.3 academic seminar/laboratory	0/2
3.4 Total of hours from the curriculum	42	Of which: 3.5	14	3.6 academic	0/28/0
		course		seminar/laboratory	
Distribution of time					83 hours
Study using the manual, course support, bibliography and handwritten notes			32		
Supplementary documentation using the library, on field-related electronic platforms and in				11	
field-related places					
Preparing academic seminaries/laboratories/ themes/ reports/ portfolios and essays			32		
Tutorials					
Examinations			8		
Other activities.			-		
3.7 Total of hours for83					

5.7 10 (a) 01 11001 \$ 101	03
individual study	
3.9 Total of hours per	125
semester	
3.10 Number of credits	5

4. Pre-requisites (where applicable)

4.1 related to the curriculum	-
4.2 related to skills	-

5.1. for the development of	The course can be held face-to-face or online. The course takes place with
the course	the modern techniques available: laptop, video projector, whiteboard or on
	specialized platforms for online courses (Moodle: e.uoradea.ro, Microsoft
	Teams).
5.2. for the development of	The laboratory can be held face-to-face or online.
the academic	The laboratory works are performed using the modern means of work
seminary/laboratory/project	existing in the laboratory: Personal computers, software programs, web
	browsers. Students presence to all laboratory hours is compulsory.
	Only one laboratory work can be recovered during the semester.

6. Specific skills acquired

of Spec	And Shind ucyun cu
al	C6. Developing skills of financiar marketing, quality management and customer
ion	relashionship management
ess	
cill	
P. P.	
al	
ers	
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7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	The main goal is to familiarize students with the basic concepts related to quality
general	management, to understand the current approaches regarding the models of quality
objective of	management systems, to develop the capacity to use the basic techniques of quality
the subject	management. The aim of the discipline is to provide students with a set of knowledge on
	the basic principles and techniques used in quality management in IT.
7.2 Specific	After completing the "Quality management in IT" discipline, students acquire the
objectives	following skills:
	- Knowledge of the areas of applicability of quality management
	- Understanding and knowing the models of quality management systems.
	Acquiring the ability to use what they have learned in this discipline in the case of
	a rigorous and abstract approach to practical problems that may arise in further
	research (master's, doctorate).

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Approaches to the quality of products and services in	Interactive lecture +	2
the context of economic globalization.	video projector / Online	
2. Theoretical foundations of quality management.	Interactive lecture +	2
	video projector / Online	
3. Defining the quality policy and its relationship with	Interactive lecture +	2
the general policy of the organization.	video projector / Online	
4. Typology of quality strategies: Methods and	Interactive lecture +	2
techniques specific to the continuous improvement	video projector / Online	
strategy.		
5. Quality planning. The quality planning process.	Interactive lecture +	2
	video projector / Online	
6. Organizing activities related to quality	Interactive lecture +	2
	video projector / Online	
7. Elements of definition and characteristics of ISO 9000	Interactive lecture +	2
quality management system models.	video projector / Online	
8. Current state of implementation of ISO 9000 quality	Interactive lecture +	2
management systems.	video projector / Online	
9. Design and implementation of a quality	Interactive lecture +	2
management system.	video projector / Online	
10 Stages of implementing the quality	Interactive lecture +	2
management system	video projector / Online	_
11 Quality audit. The concent of quality audit	Interactive lecture \perp	2
11. Quanty audit. The concept of quanty audit.	video projector / Online	2
12 Evaluation and certification of conformity of	Interactive lecture +	2
quality management systems	video projector / Online	2
quanty management systems.	, laco projector / Omme	

13. Quality management related to quality.	Interactive lecture + video projector / Online	2
14. Total quality management. Current approaches	Interactive lecture +	2
to the concept of total quality.	video projector / Online	
Bibliography		I
1.M. Olaru, Managementul calității, ed. a II-a revizuită	si adăugită, Ed. Economică B	ucuresti, Bucuresti,
1999, România	, , ,	, , , , , , , , , , , , , , , , , , ,
2.Teodor Leuca, Managementul pr	oiectelor de cerc	cetare, 2011,
http://www.posdru56287.org/elms/course/view.php?id=1	12	
3. L. Ilies, Managementul calității totale, Cluj-Napoca: E	ditura Dacia, 2003;	
4. E.W. Anderson, C. Fornell, Foundations of the Amer	rican Customer Satisfaction In	dex', Total Quality
Management, 2000, Vol.11, No.7, pp. 869 - 882;		· · ·
5. E.W Anderson, M. Sullivan, 'The Antecedents and Co	onsequences of Customer Satis	factionsfor Firms',,
1993, Marketing Science, Spring, pp.125-143	-	
6. S. Ciurea, N. Drăgulănescu, Managementul calității to	tale, București: Editura Econor	nică, 1995;
7. Şraum, Ghe., Merceologie și asigurarea calității, Cluj-	Napoca:Editura George Barițiu	ı, 2000;
8. I. Stanciu, Calitologia - știința calității mărfurilor, Bud	curești: Editura Oscar Print, 20	02;72.
9. I. Stanciu, MANAGEMENTUL CALITĂŢII TOTAL	E, București: Cartea Universita	ıră, 2003;
10. Ovidiu Novac, Managementul calității în IT, Curs ht	tps://e.uoradea.ro/course/view.	<u>php?id=2062</u>
8.2 Laboratory	Teaching methods	No. of hours/
		Observations
1. Analysis of the clauses of a contract regarding the	Introductory lecture; free	2
quality assurance of the delivered products / services.	and individual discussions;	
2. Analysis of the quality policy of some organizations.	Introductory lecture; free	2
	and individual discussions;	
3. Analysis of the quality objectives of some	Introductory lecture; free	2
organizations.	and individual discussions;	
4. Identifying the processes within an organization -	Introductory lecture; free	2
Analysis of the SMC process map.	and individual discussions;	
5. Stages of implementing a Quality Management	Introductory lecture; free	2
System (QMS).	and individual discussions;.	
6. Analysis of the SMC documentation. Sketching the	Introductory lecture; free	2
content of a quality manual.	and individual discussions;	
7. Analysis of SMC documents: Elaboration of an	Introductory lecture; free	2
operational procedure.	and individual discussions;	
8. Quality audit. Development of an audit program and	Introductory lecture; free	2
plan. Develop a checklist.	and individual discussions;	
9. Quality audit. Writing a report of non-conformities	Introductory lecture; free	2
and corrective/preventive actions. Writing an audit	and individual discussions;	
report.		
10. Steps of SMC certification.	Introductory lecture; free	2
	and individual discussions;	
11. Quality cost analysis.	Introductory lecture; free	2
	and individual discussions;	
12. Determining costs related to quality.	Introductory lecture; free	2
	and individual discussions;	
13. Application of the Ishikawa diagram to identify the	Introductory lecture; free	2
causes of non-conformities.	and individual discussions;	
14. Applying the PEVA cycle to improve a process.	Introductory lecture; free	2
	and individual discussions;	

Bibliography

1.M. Olaru, Managementul calității, ed. a II-a revizuită și adăugită, Ed. Economică București, București, 1999, România

2.Teodor Leuca, 2011, Managementul proiectelor de cercetare, http://www.posdru56287.org/elms/course/view.php?id=12

3. J. Dahlgaard, K. Kai, K.K. Gopal, Fundamentals of	Total Quality Management, N	lew York:Taylor &			
Francis, 2002;					
4. J. Dahlgaard, K., Kai, K.K Goplal, Fundamentals of	Total Quality Management – P	Process analysis and			
improvement, London: Taylor & Francis, 2002;					
5.Derek, R., Allen, Customer Satisfaction Research M	5.Derek, R., Allen, Customer Satisfaction Research Management, Milwaukee (Wisconsin): ASQPress,				
2004;					
6. Ovidiu Novac, Managementul calității în IT, https://e.uoradea.ro/course/view.php?id=2062					
8.3 Seminar	Teaching methods	No. of hours/			
	-	Observations			

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

The content of the subject is in accordance with the one in other national or international universities. In order to provide a better accomodation to the labour market requirements, there have been organized meetings both with representatives of the socio-economic environment and with academic staff with similar professional interest fields.

10. Evaluation

Optimized Mathematical and the state of the system of	Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the
10.4 Course Written or online exam. Written examination - The assessment can be done face to face or online. The elaboration and presentation of a report on a specific research topic in the field through which the state of the art is deepened, analyzed and presented on certain specific topics. 70 % 10.5 Seminar 0 0 30% 10.6 Laboratory Laboratory report 0ral evaluation The assessment can be done face to face or online. After the presentation of the report, each student receives a grade for the report. The project is also presented in electronic format	JI = 1 = 1			final mark
10.5 Seminar Image: Specific topics. 10.6 Laboratory Laboratory report Oral evaluation 30% The assessment can be done face to face or online. After the presentation of the report, each student receives a grade for the report. 30%	10.4 Course	Written or online exam.	Written examination - The assessment can be done face to face or online. The elaboration and presentation of a report on a specific research topic in the field through which the state of the art is deepened, analyzed and presented on certain specific topics	70 %
10.6 Laboratory Laboratory report Oral evaluation 30% 10.6 Laboratory Laboratory report Oral evaluation 30% The assessment can be done face to face or online. After the presentation of the report, each student receives a grade for the report. 30%	10.5 Seminar		specific topics.	
10.7 Project	10.6 Laboratory	Laboratory report	Oral evaluation The assessment can be done face to face or online. After the presentation of the report, each student receives a grade for the report. The project is also presented in electronic format	30%

10.8 Minimum performance standard:

Minimum conditions necessary to pass the exam in accordance with the minimum performance standard: **Note 5** - it is necessary to deal extensively with the subject, without detailing the concepts presented, the existence of a minimum bibliography, a short presentation. **Note 10:** it is necessary the complete, detailed approach of the proposed topic (comparative analyzes / discussions), extended bibliography, extended presentation.

Completion date:

14.09.2020

Date of endorsement in the department: 25.09.2020

Date of endorsement in the Faculty Board: 28.09.2020

1.1 Higher education institution **UNIVERSITY OF ORADEA** Faculty of Electrical Engineering and Information Technology 1.2 Faculty 1.3 Department ¹⁾ Department of Computers and Information Technology 1.4 Field of study ²⁾ Computers and information technology ³⁾ Master 1.5 Study cycle ⁴⁾ / ⁵⁾ Management in Information Technology / Master of 1.6 Study program/Qualification **Science in Engineering**

1. Data related to the study program

2. Data related to the subject

2.1 Name of the subject ⁶ MODERN METHODS OF I					FLOO	GICAL DESIGN		
2.2 Holder of the subject			Pro	of. Ei	rica Mang			
2.3 Holder of the academic seminar/laboratory/project			Pro	of. Ei	rica Mang			
2.4 Year of study	I	2.5 Semeste	er	Ι	2.6 Type of the evaluation	7) Ex	2.7 Subject regime	⁸⁾ THD

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

5

3.1 Number of hours per week		4	of which: 3.2	2	3.3 academic	0/1/0
			course		seminar/laboratory/project	
3.4 Total of hours from the curriculu	m	42	Of which: 3.5	28	3.6 academic	0/14/
			course		seminar/laboratory/project	0
Distribution of time						hours
Study using the manual, course supp	ort, l	oibliog	graphy and handw	ritten	notes	40
Supplementary documentation using	the l	library	, on field-related	electro	onic platforms and in field-	20
related places						
Preparing academic seminaries/labor	ratori	es/the	emes/ reports/ por	tfolios	and essays	38
Tutorials					4	
Examinations						10
Other activities.						
3.7 Total of hours for 1	54					
individual study						
3.9 Total of hours per 1	12					
semester						

4. **Pre-requisites** (where applicable)

3.10 Number of credits

4.1 related to the curriculum	(Conditions) LD1, LD2, CID, ASC, Microprocessors
4.2 related to skills	 Building hardware, software and communications components using design methods, languages, algorithms, data structures, protocols and technologies Implementation of hardware, software and communication system components Carrying out projects on areas of knowledge

5.1. for the development of	Classroom equipped with video projector - Attendance at least 50% of the
the course	courses

5.2.for the aca	the development of demic	Room equipped with computers and specific programs - Mandatory attendance at all laboratories; - A maximum of 3 works can be recovered			
semina	ary/laboratory/project	during the semester (20%);			
6. Spec	ific skills acquired				
	595 / 5000				
	Translation results				
	C3. Problem solving usi	ng computer science and engineering tools.			
	Identifying class	ses of problems and methods of solving characteristic of information			
	systems.				
ls	Using interdisci	plinary knowledge, solutions and tools, performing experiments and			
skil	interpreting thei	r results			
al s	Hardware design	n			
ion	Comparative ev	aluation, including experimental, of solving alternatives, to optimize			
ess	performance				
rof	 Development ar 	nd implementation of IT solutions for concrete problems			
P.	Effective realization	ation of an application			
	CT1. Honorable, respon	sible, ethical conduct in the spirit of the law to ensure the reputation of the			
sal	profession				
vei					
ans Ils					
Tr: ski					

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The general	 acquiring the necessary knowledge for modeling and simulation of numerical systems using high level hardware description languages;
objective of the subject	 learning some techniques for structured design of computer systems using VHDL language:
	 learning the basic elements of the VHDL language, as a representative language of hardware description;
	 implementation of complex applications using programmable logic circuits (FPGA)
7.2 Specific objectives	 using the computer in order to design the circuits, to verify from a functional point of view the designed scheme. Understanding the integrated circuit design methodology

8. Contents*

8.1 Course	Teaching	No. of hours/		
	methods	Observations		
CHAPTER 1. INTRODUCTION.	 Powerpoint 	4		
Hardware description languages; VHDL language development;	presentation;			
Features of the VHDL language;	• free			
	discussions;			
CHAPTER 2. BASIC CONCEPTS IN VHDL Entity; Architecture;	 Powerpoint 	6		
Packages; VHDL versus other HDL languages	presentation;			
	• free			
	discussions;			
CHAPTER 3. BASIC ELEMENTS OF VHDL LANGUAGE.	 Powerpoint 			
VHDL language constructions; Objects; Data types; Predefined	presentation;			
types; Types not supported by Foundation Express;	• free	6		
VHDL operators; VHDL versus other HDL languages	discussions;			
CHAPTER 4. VHDL LANGUAGE INSTRUCTIONS.	 Powerpoint 	6		
Sequential instructions; Concurrent instructions	presentation;			
VHDL versus other HDL languages	• free			
	discussions			
Adrian G. Moise, Tehnologia proiectarii in VHDL, Editura Matrix, ISBN:978-973-755-213-6, 2011				

Mang Gerda Erica, VHDL, Editura Universității din Oradea, ISBN 973-613-485-7, 2003 John M. Yarbrough – Digital Logic – Applications and Design, West Publishing Company , 1997 G. Toacse, D. Nicula - Electronică Digitală. Dispozitive, Circuite, Proiectare (I), Verilog HDL (II). Editura

TEHNICĂ, Bucuresti, 2005.

8.2 Academic seminar/laboratory/project	Teaching	No. of hours/			
	methods	Observations			
Seminar					
Laboratory					
Tutorial xilinx. Making a device for choosing the optimal path.	Discussions.	2			
Introduction to the use of VHDL language compilation and	Individually	2			
simulation of a design.	work and also				
Orderly structural modeling. The structural model of an 8-bit adder.	in small groups	2			
Behavioral modeling in VHDL. Behavioral model of a	of students.	2			
configurable travel register.					
Mixed modeling in VHDL. Implementation of a multiplication		2			
algorithm.					
Simulation and verification of VHDL models in a testbench.		2			
Design, simulation, and implementation of a traffic light using		2			
VHDL.					
Bibliography					
Alexandru Georgescu, Adrian G. Moise, Practica proiectarii in VHDL, Editura Matrixrom, ISBN:978-					
973-755-397-3, 2011					
Mang Gerda Erica, Proiectarea circuitelor logice in VHDL. Exemple	e. 230 pg, ISBN: 97	78-606-10-1377-7,			
2014,					
Mang Gerda Erica, VHDL, Ed. Universității din Oradea, 973-613-48.	5-7, 260 pg, 2004,	actualizat in			
format electronic – 2013					
Dave Van den Bout, Practical Xilinx Designer Lab Book, Prentice Ha	all, 1997				
Xilinx, Lab Projects Documentation, Foundation Series Express, Doc	cumentatie Xilinx,	1998			
Xilinx, The Programmable Logic Data Book, Documentatie Xilinx, 2	Xilinx, The Programmable Logic Data Book, Documentatie Xilinx, 2012				
Xilinx, Foundation Series Quick Start Guide, Documentatie Xilinx, 2	012				

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

• The content of the discipline is adapted to the requirements of specialized companies

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the final mark
10.4 Course	Minimum required conditions for passing the Vp (mark 5): in accordance with the minimum performance standard For 10: the correct solving of all the subjects at the Vp, the presence and activity at courses	Final course evaluation and problem solving	60%
10.5 Academic seminar			
10.6 Laboratory	Minimum required conditions for promotion (grade 5): in accordance	Weekly evaluation of the laboratory preparation	40%

	with the minimum performance standard For 10: the presence and activity at seminars,	Tracking the activity along the way, practical applications.			
10.7 Project					
10.8 Minimum performance standard:					
Course: Know the design methods that are used					
Academic seminar:					
Laboratory: Carrying out projects respecting ethical and responsible behavior					
Project:					

Completion date:

Date of endorsement in the department:

Date of endorsement in the Faculty Board:

HELPFUL HINTS (to be erased after completion):

- ¹⁾ Choose one of the followings:
- Department of Control Systems Engineering and Management
- Department of Computers and Information Technology
- Department of Electrical Engineering
- Department of Electronics and Telecommunications

²⁾ Choose one of the followings:

- Control systems engineering
- Computers and information technology
- Electrical engineering
- Electronical engineering, telecommunications and information technologies
- Engineering and management
- ³⁾ Choose one of the followings:
- Bachelor (1st cycle)
- Master (2nd cycle)

⁴⁾ Choose one of the followings:

- A. Bachelor study programs:
- Applied Electronics
- Automatics and Applied Informatics
- Computers
- Economic Engineering in Electric, Electronic and Energetic Field
- Electrical Engineering and Computers
- Electrical Systems
- Electromechanics
- Electromechanics (at Beius)
- Information Technology
- Networks and Softwares for Telecommunications
- B. Master study programs:
- Audio-Video Technologies and Telecommunications

- Advanced Systems in Electrical Engineering
- Management in Information Technology
- Advanced Control Systems
- Management and Communication in Engineering
- ⁵⁾ Choose one of the followings:
- Bachelor of Engineering
- Master of Science in Engineering
- ⁶⁾ According to the curriculum
- ⁷⁾ Choose one of the followings, according to the curriculum:
- Ex. Examination
- Cv. Colloquium
- Vp Continuous Assessment
- Pr Project
- A/R- Passed/Failed

⁸⁾ Choose one of the followings, according to the curriculum:

- A. For Bachelor study programs:
- GD General Discipline
- FD Fundamental Discipline
- SD Specialized Discipline
- CD Complementary Discipline
- FD Field Discipline
- DP Practical Activities
- UO University Choice
- B. For Master study programs:
- THD Thoroughgoing Disciplines
- SYD Synthesis Disciplines
- AKD Advanced Knowledge Disciplines
- UO University Choice

1.1 Higher education institution **UNIVERSITY OF ORADEA** Faculty of Electrical Engineering and Information Technology 1.2 Faculty 1.3 Department ¹⁾ Department of Computers and Information Technology 1.4 Field of study ²⁾ Computers and information technology ³⁾ Master 1.5 Study cycle ⁴⁾ / ⁵⁾ Management in Information Technology / Master of 1.6 Study program/Qualification **Science in Engineering**

1. Data related to the study program

2. Data related to the subject

		0	6			- ~ ~		
2.1 Name of the su	bject		°'S	⁹ SECURITY IN E-BUSINESS				
2.2 Holder of the subject Prof. Ioan Mang								
2.3 Holder of the academic		Prof. Ioan Mang						
seminar/laboratory/project					-			
2.4 Year of study	Ι	2.5 Semeste	er	2	2.6 Type of the	7)	2.7 Subject regime	8)
-					evaluation	Ex		THD

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

5

3.1 Number of hours per week		4	of which: 3.2	2	3.3 academic	0/1/0
			course		seminar/laboratory/project	
3.4 Total of hours from the curriculu	um	56	Of which: 3.5	28	3.6 academic	0/28/
			course		seminar/laboratory/project	0
Distribution of time						hours
Study using the manual, course supp	port,	bibliog	graphy and handw	ritten	notes	40
Supplementary documentation using the library, on field-related electronic platforms and in field-					20	
related places						
Preparing academic seminaries/laboratories/ themes/ reports/ portfolios and essays					38	
Tutorials					4	
Examinations					10	
Other activities.						
3.7 Total of hours for	154					
individual study						
3.9 Total of hours per	112					
semester						

4. Pre-requisites (where applicable)

3.10 Number of credits

	appineacie)
4.1 related to the	
curriculum	
4.2 related to skills	

5.1. for the development of	Classroom equipped with video projector - Attendance at least 50% of the
the course	courses
5.2.for the development of	Room equipped with computers and specific programs - Mandatory
the academic	attendance at all laboratories; - A maximum of 3 works can be recovered
seminary/laboratory/project	during the semester (20%);

	T th	he frequency of laboratory hours below 80% leads to the restoration of ne discipline
6. Spec	cific skills acquired	•
	C2. Software component d	lesign
	• Description of the structu	are and operation of software components
	• Explaining the role, intera	action and operation of software system components
	C4. Improving the perform	nance of software systems
	• Explaining the interaction	n of factors that determine software performance
	• Design and integration of	f information systems using technologies and programming
IIIs	environments	
ski	C5. Design, life cycle mana	agement, integration and integrity of software systems
nal	• Specifying the relevant cr	riteria regarding the life cycle, quality, safety and interaction of the
ioi	computer system with the e	environment and with the human operator
ess	• The use of interdisciplina	ary knowledge for the adaptation of the computer system in relation to
rof	the requirements of the fiel	ld of applications
Ч	Maintenance and operation	on of software systems.
_	CT1. Honorable, responsib	le, ethical conduct in the spirit of the law to ensure the reputation of the
rsa	profession	
sve		
ans ills		
Tr sk		

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	• use in value-added networks of applications such as electronic document transfer
general	(EDI), fax communications, barcodes, file transfer and e-mail
objective of	 addressing the vast and very current issues of problems that arise in e-commerce.
the subject	
7.2 Specific	 Security of payment systems in electronic commerce
objectives	• The structure of an electronic payment system
	 Devices used in electronic payment systems
	Digital signatures in smart cards
	 transactions carried out in an electronic payment system
	• POS payment system.

8. Contents*

8.1 Course	Teaching	No. of hours/
	methods	Observations
CHAPTER 1. Security of payment systems in electronic	Powerpoint	4
commerce	presentation;free	
	discussions;	
CHAPTER 2. Money in e-commerce	Powerpoint	2
	presentation;free	
	discussions;	
CHAPTER 3. The general structure of an electronic payment	Powerpoint	
system	presentation;free	
	discussions;	2
CHAPTER 4. Devices used in electronic payment systems	Powerpoint	4
	presentation;free	
	discussions;	
CHAPTER 5. The main transactions carried out in an	Powerpoint	2
electronic payment system	presentation;free	
	discussions;	
CHAPTER 6. Digital signatures in smart cards	Powerpoint	2
	presentation;free	
	discussions;	

CHAPTER 7. CAFE electronic payment system	Powerpoint	4
	presentation;free	
	discussions;	
CHAPTER 8. Case study: a possible electronic payment	Powerpoint	4
system	presentation;free	
	discussions;	
CHAPTER 9. Case study: POS type payment system.	Powerpoint	4
	presentation;free	
	discussions;	

Bibliography

1. Securitatea informatică în UNIX și INTENET - Victor Valeriu Patriciu, Monica Pietroșanu, Ene Ion Bica, Costel Cristea, Editura Tehnica, 1998

2. Java Cryptography - Jonathan Knudsen, Editura O'Reilly, 1999

3. Introducere în tehnica securității datelor - Mang Ioan, Editura Universității din Oradea, 2002

4. Algoritmi moderni de criptare - Mang Ioan, Editura Universității din Oradea, 2002

8.2 Academic seminar/laboratory/project	Teaching	No. of hours/
	methods	Observations
Seminar		
Laboratory		
1. Electronic payment system	Introductory	2
2. Creating and using digital signatures on smart cards.	lecture;	2
3. Schnorr identification / signature procedure	presentation of	2
4. Guillou Quisquarter identification procedure	papers prepared	2
5. CAFE electronic payment system 6.	by students;	4
6. Protocol for payment / withdrawal of electronic money		2

Bibliography

1.Introducere în tehnica securității datelor - Mang Ioan, Editura Universității din Oradea, 2002

2.Lucrări practice de tehnici de securitate a datelor - Mang Ioan, Mang Erica, Popescu C., Editura Universității din Oradea, 2002

3.Computer security basics - Deborah Russel and G.T. Gangemi Sr, Editura O'Reilly & Assoc, 2008

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

Use of specific theories and tools to explain the functioning and structure of systems

Description of the structure and operation of the components

Explaining the role, interaction and operation of software system components

The content of the discipline is adapted to the requirements of specialized companies.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the final mark
10.4 Course	Minimum required conditions for passing the Vp (mark 5): in accordance with the minimum performance standard For 10: the correct solving of all the subjects at the Ex, the presence and activity at courses	Final course evaluation and problem solving	60%
10.5 Academic seminar			

10.6 Laboratory	Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard For 10: the presence and activity at classes,	Weekly evaluation of the laboratory preparation Tracking the activity along the way, practical applications.	40%			
10.7 Project						
10.8 Minimum performance standard:						
Course: Know the design methods that are used						
Academic seminar:						
Laboratory: Carrying out projects respecting ethical and responsible behavior						
Project:						

Completion date:

Date of endorsement in the department:

Date of endorsement in the Faculty Board:

HELPFUL HINTS (to be erased after completion):

¹⁾ Choose one of the followings:

- Department of Control Systems Engineering and Management
- Department of Computers and Information Technology
- Department of Electrical Engineering
- Department of Electronics and Telecommunications

²⁾ Choose one of the followings:

- Control systems engineering
- Computers and information technology
- Electrical engineering
- Electronical engineering, telecommunications and information technologies
- Engineering and management
- ³⁾ Choose one of the followings:
- Bachelor (1st cycle)
- Master (2nd cycle)
- ⁴⁾ Choose one of the followings:
- A. Bachelor study programs:
- Applied Electronics
- Automatics and Applied Informatics
- Computers
- Economic Engineering in Electric, Electronic and Energetic Field
- Electrical Engineering and Computers
- Electrical Systems
- Electromechanics
- Electromechanics (at Beius)
- Information Technology

- Networks and Softwares for Telecommunications
- B. Master study programs:
- Audio-Video Technologies and Telecommunications
- Advanced Systems in Electrical Engineering
- Management in Information Technology
- Advanced Control Systems
- Management and Communication in Engineering
- ⁵⁾ Choose one of the followings:
- Bachelor of Engineering
- Master of Science in Engineering
- ⁶⁾ According to the curriculum
- ⁷⁾ Choose one of the followings, according to the curriculum:
- Ex. Examination
- Cv. Colloquium
- Vp Continuous Assessment
- Pr Project
- A/R- Passed/Failed

⁸⁾ Choose one of the followings, according to the curriculum:

- A. For Bachelor study programs:
- GD General Discipline
- FD Fundamental Discipline
- SD Specialized Discipline
- CD Complementary Discipline
- FD Field Discipline
- DP Practical Activities
- UO University Choice
- B. For Master study programs:
- THD Thoroughgoing Disciplines
- SYD Synthesis Disciplines
- AKD Advanced Knowledge Disciplines
- UO University Choice

Ľ	Data related to the study program	
	1.1 Higher education institution	UNIVERSITY OF ORADEA
	1.2 Faculty	Faculty of Electrical Engineering and Information Technology
	1.3 Department	Computers and Information Technology
	1.4 Field of study	Computers and Information Technology
	1.5 Study cycle	Master (2 st cycle)
	1.6 Study program/Qualification	Management in Information Technology / Master of Science in Engineering

1. Data related to the study program

2. Data related to the subject

2.1 Name of the sub	ject		Data Protection and Monitoring				
2.2 Holder of the subject			Prof.d	Prof.dr.habil.eng. Daniela Elena Popescu			
2.3 Holder of the academic seminar/laboratory/project			Prof.d	dr.habil.eng. Daniela l	Elena Po	opescu	
2.4 Year of study I		2.5 Semeste 1	er	2.6 Type of the evaluation	Ex	2.7 Subject regime	DS

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

4

3.1 Number of hours per week		4	of which: 3.2	2	3.3 academic	1/1
			course		seminar/laboratory/project	
3.4 Total of hours from the curric	ulum	56	Of which: 3.5	28	3.6 academic	14/
			course		seminar/laboratory/project	14
Distribution of time						hou
						rs
Study using the manual, course su	ipport,	biblio	graphy and handw	ritten	notes	28
Supplementary documentation us	Supplementary documentation using the library, on field-related electronic platforms and in field-					8
related places						
Preparing academic seminaries/la	boratoı	ries/ th	nemes/ reports/ por	rtfolios	s and essays	14
Tutorials						2
Examinations						4
Other activities.						
3.7 Total of hours for individual	56					
study						
3.9 Total of hours per semester	112					
		1				

4. Pre-requisites (where applicable)

3.10 Number of credits

4.1 related to the	(Conditions)
curriculum	Operating Systems
4.2 related to skills	Computer Systems Architecture

5.1. for the development of	- The course can be held face to face or online "
the course	- attendance at least 50% of the courses
5.2.for the development of	- The seminar / laboratory / project can be held face to face or online
the academic	- Mandatory presence at all laboratories;
seminary/laboratory/project	- Students must have completed the theoretical part of the paper;
	- A maximum of 4 works can be recovered during the semester (30%);

		- The frequency at laboratory hours below 70% leads to the restoration of					
		the discipline					
6. Spe	6. Specific skills acquired						
	CP3. Problem solving usin	ng Computer Science and engineering tools					
	CP5. Design, life cycle ma	anagement, integration and integrity of hardware, software and communications					
Professional skills	systems in order to increas	se the security of systems					
ills	CT1. Applying, in the contransfer), product certificate within its own rigorous, etc. Defining the basic mana the level of organizations. • Scientific substantiation security as well as the improvement of the security as the improvement.	text of compliance with the law, intellectual property rights (including technology tion methodology, principles, norms and values of the code of professional ethics ficient and responsible work strategy gerial concepts necessary to implement a high security operating environment at of management decisions regarding the preservation and increase of process elementation and monitoring of their effects within the organization					
Transversal sk	CT2. Identify roles and re with the application of rel • Assuming the specific ro high security infrastructur • Increasing the interest for research.	sponsibilities in a multi-specialized team decision-making and assigning tasks, ationship techniques and efficient work within the team les and responsibilities of leading teams engaged in development activities for es / systems r the correct realization of a scientific research and for the pursuit of a career in					

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

· The objectives	of the discipline (resulting nom the grid of the specific competences acquired)			
7.1 The	 Familiarizing students with the defining elements for implementing and 			
general	increasing the level of information security at the organizational level as well as			
objective of	identifying healthy strategies for institutional development in this regard			
the subject				
7.2 Specific	• The course aims to familiarize students with information security issues, with			
objectives	understanding and identifying what vulnerabilities are, with how the issue of			
	protection of both the unconnected system and those connected in an internal			
	network / Internet. Therefore, it proposes to present the basic characteristics of			
	information security issues and to develop the capacities to develop security			
	policies at organizational level in order to protect data.			
	• Project: Follow-up of the risks and vulnerabilities to which the structures of an			
	institution are exposed, considered as a case study with identification of the			
	protection measures that are required			

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Information processing security, protection of	Free course presentation	28 ore
values, Characteristics of computer intrusion,	with video projector /	
Attacks, Significance of computer security, Security	overhead projector and	
purposes, Privacy, Integrity, Availability,	blackboard in an	
Vulnerabilities - hardware, software, Data	interactive way: punctuate	
vulnerabilities, Computer offenders, Methods	from time to time questions	
Defense, Controls, The Future in the Field	for students in order to	
2. Protection of non-networked computers, User	increase the degree of	
authentication, Password systems, Advantages of	interactivity	
password systems, Disadvantage, Rules to increase	 Indication of topics for 	
the security provided by the password system,	documentation and	
Encryption protection, Authentication based on	individual study	

encrypted keys, Authentication based on what the	
user is Biometric authentication systems. Use of	
disci is, Diometrie admentication systems, Ose of	
fingerprints in authentication	
1 Access control: • Identification • Authentication	
1. Access control. • Identification • Authentication	
Three factors • Single login • Single conviction •	
Access control with subjects and objects • Access	
Access control with subjects and objects • Access	
control mode (DAC, non-DAC, MAC and RBAC) •	
Bell-I aPadula Biba Clark -Wilson and Chinese	
Den-Lai adula, Diba, Claik - Wilson, and Chinese	
Wall architecture • Identity management • Cloud	
computing	
computing	
2. Advanced communication and network elements:	
Open Systems Interconnection (OSI) and	
Transmission Control Protocol / Internet Protocol	
(TCP / IP) models • Bus star and token ring network	
(1C1 / II) models Dus, star and token mig lietwork	
configurations • Common protocols in TCP / IP suite	
• Ports used with common protocols • Different	
Torts used with common protocols Different	
network architectures such as Internet, intranet, and	
extranet • Demilitarized zones (DMZ) • Wireless	
security protocols such as Wired Equivalent Privacy	
(WEP) Wi-Fi Protected Access (WPA) and WPA2 •	
Wireless technologies such as Bluetooth, RFID,	
802.11. WiMax, GSM, 3G and NFC	
2 Communication -1 to -1	
3. Communication and network elements: •	
Telecommunication methods used to access the	
Internet • Securing the Voice over Internet Protocol	
(VoIP) with Secure Real-Time • Transport Protocol	
$(ODTD)$ Γ'_1 $(ODTD)$ $(OD$	
(SRTP) • Filtering packets, firewalls and firewalls	
application • Protects diversity with firewalls •	
Differentiates between network and host based	
firewalls • Risks and vulnerabilities related to remote	
access solutions • Different tunneling protocols using	
remote access • Authentication methods using remote	
access • Control network access	
4. Differences between hackers and crackers •	
$D'C'_{1} = 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$	
Differences between writenats, blacknats, and	
gravhats • Denial-of-service and distributed denial-	
of america attacks a Zona day avalaits a Threats	
orservice attacks • Zero-day exploits • Threats	
Advanced Persistence • Social Engineering Tactics •	
The Immentence of Teels to Deduce Social	
The importance of Tools to Reduce Social	
Engineering Attacks	
5 Code and Malware: Different types of viruses	
5. Code and Marware. Different types of viruses	
Differences between viruses, worms, Trojans and	
logic hombs • Sets of roots hatches back doors and	
Diffe Johnos Dets of Tools, Indenes, Jack doors and	
spyware • Differences between signature-based	
detection and heuristic-based detection • for antivirus	
software • The importance of keeping antivirus	
signature definitions up to date • Using spam filters	
and another filtering devices a The eminatule of least	
and content intering devices • The principle of least	
privilege and how it can help prevent infections •	
Educating users about practices	
Educating users about practices	
6. Malicious code and activity: • Different types of	
viruses • Differences between viruses worms	
I rojans and logic bombs • Root sets, hatches,	
backdoors and spyware • Differences between	
signature hand date the 11th the 1 1 1 C	
signature-based detection and detection-based of	
antivirus heuristics • The importance of keeping	
antivirus signature definitions up to date . Using	
antivitus signature definitions up to date • Osnig	
spam filters and content filtering devices • The least	
privilege principle and how it can belp prevent	
infections • Educating users about safe computer	
practices • Common vulnerabilities and exposures	
7 Dick responses and reservery . Definition of visit	
7. Risk, responses and recovery. • Definition of fisk,	
threats, vulnerabilities and impact • Four main	

methods of risk management: mitigation (mitigation),	
avoidance, transfer and acceptance • Definition of	
residual risk • Steps used in risk assessment •	
Differences between analyzes quantitative and	
qualitative • Steps in response to the incident:	
preparation, detection, analysis, retention,	
eradication, • recovery and post-incident activities	
8. Monitoring and analysis: • Security alert and false	
positive • Network-based and host-based intrusion	
detection systems • Intrusion prevention systems •	
Method of detection and prevention of attacks • File	
integration verifiers • Honeypots, plas honeycomb	
and lined cells • Event And Incident Managers, such	
as SIMs, System Event Managers (SEMs) and SIEMs	
Types of vulnerability assessment tests Tools	

Bibliography

- Course notes (slides) made available to students in electronic format on the Office 365 platform
- Deborah Russel and. mul 1 CISCOmaterialului course comprin in Mprotection that se impuncareamilor specific search IA general notions legaG.T. Gangemi Sr, Computer security basics, Editura O'Reilly & Assoc, ISBN: 0-
- 937175-71-4, 1993
- Stallings W, Cryptography and Network Security Principles and Practice, Thhird Edition, Prentice Hall, 2003,
- K.Hwang, F.A.Briggs, Computer Architecture and Parallel processing, Mc Graw Hill Book company 1987
- Artech House, Fundamentals of Network Security, Artech House
- D.E.Popescu, Information Security Management, University of Oradea Publishing House, 2012
- ITIL

8.2 Project	Teaching methods	No. of hours/ Observations
 Presentation of project activities, the laboratory, labor protection norms and conventional signs specific to the field of computer systems - general, general information on Protection and data monitoring. Presentation of the required design specifications Analysis of existing vulnerabilities for the case study considered Analysis of the existing risks for the case study considered Classification of the information with the establishment of the security policies for the considered case Identifying the solutions for increasing the security with establishing the concrete security policies for the considered case Tracing the audit techniques for maintaining the security at the level of the analyzed objective Teaching the project with knowledge verification 	Students receive laboratory papers at least one week in advance, study them, inspect them, and take a theoretical test at the beginning of the laboratory. Then, the students carry out the practical part of the work under the guidance of the teacher.	 4 hours are allocated for each of the 7 detailed points of the laboratory activity. The results of the project activities are presented in plenary at group level

- 1. D.E.Popescu, Information Security Management, University of Oradea Publishing House, 2012
- 2. Moodle module with project works
- 3. Webography recommended during project hours

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

 The content of the discipline is found in the curriculum of Computer and Information Technology specializations and other university centers that have accredited these specializations (Technical University of Cluj-Napoca, University of Craiova, "Politehnica" University of Timisoara, Gh. Asachi University of Iasi, etc.), and knowledge of the architecture and organization of computer systems as well as their operation and design is a stringent requirement of employers in the field (Rds & Rcs, Plexus, Neologic, Celestica, Keysys, etc.).

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the
10.4.0	M's 's second se		final mark
10.4 Course	Minimum required conditions for passing the exam (mark 5) in accordance with the minimum performance standard: - it is necessary to know the fundamental notions required in the subjects, without presenting details on them For 10: - for grade 10, a thorough knowledge of all is required	The evaluation can be done face to face or online depending on the situation imposed	70%
10.6 Laboratory	 for mark 5 it is necessary to solve the corresponding number of requirements, depending on the test scale. for mark 10, all requirements on the test sheet must be correctly resolved. 	Tests during the semester The evaluation of students is done through two tests, taken during the semester. The arithmetic mean of the marks of these tests represents the mark with which they enter the exam. Students can also get extra points, depending on their participation in the laboratory and solving exercises with a higher degree of difficulty. These points can be used to calculate the test score.	30%

10.8 Minimum performance standard:

Assimilation of detailed knowledge about vulnerabilities, risks and security solutions in managing and conveying information in a company

The timely solution, in individual activities and activities carried out in groups, in conditions of qualified assistance, of the problems that require the application of principles and rules respecting the norms of professional deontology. Responsible assumption of specific tasks in multi-specialized teams and efficient communication at institutional level.

• Development of team spirit, spirit of mutual help, awareness of the importance of training during the semester for good and sustainable results, awareness of the importance of research, own research related to learning (library, internet), cultivating a work discipline, done correctly and time

Completion date: 27.05.2021

Date of endorsement in the department:

Date of endorsement in the Faculty Board:

T	. Data related to the study program	
	1.1 Higher education institution	UNIVERSITY OF ORADEA
	1.2 Faculty	Faculty of Electrical Engineering and Information Technology
	1.3 Department	Department of Computers and Information Technology
	1.4 Field of study	Computers and Information Technology
	1.5 Study cycle	Master (2 st cycle)
	1.6 Study program/Qualification	Management in Information Technology /Master of Science in
		Engineering

1. Data related to the study program

2. Data related to the subject

2.1 Name of the su	bject		Marketing Online					
2.2 Holder of the s	ubject	,	Pater Alexandrina Mirela					
2.3 Holder of the a	caden	nic	Pater Alexandrina Mirela					
seminar/laboratory/project								
2.4 Year of study	Ι	2.5		2	2.6 Type of the	Ex	2.7 Subject	THD -
		Semester			evaluation		regime	Thoroughgoing
								Discipline

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

3.1 Number of hours per week		4	of which: 3.2	2	3.3 academic	0/0/
1			course		seminar/laboratory/project	1
3.4 Total of hours from the curriculu	m	42	Of which: 3.5	28	3.6 academic	0/0/
			course		seminar/laboratory/project	14
Distribution of time						hou
						rs
Study using the manual, course suppo	ort, l	biblio	graphy and handw	ritten	notes	14
Supplementary documentation using	the	librar	y, on field-related	electro	onic platforms and in field-	10
related places						
Preparing academic seminaries/laboration	ator	ies/ th	emes/ reports/ poi	rtfolios	and essays	10
Tutorials						4
Examinations						4
Other activities.						
3.7 Total of hours for	3					
individual study						
3.9 Total of hours per 1 2	25					
semester						
3.10 Number of credits 5						

4. Pre-requisites (where applicable)

in the requisites (where	upplieusie)
4.1 related to the	(Conditions)
curriculum	
4.2 related to skills	

5.1. for the development of	Classroom equipped with video projector and computer.
the course	The course can be held face to face or online.

5.2.for the aca semina	the development of ademic ary/laboratory/project	Laboratory equipped with computers that are connected to the Internet. The project can be held face to face or online
6. Spec	ific skills acquired	
Professional skills	CP6. Development of fi management	inancial management skills, quality management and customer relationship
Transversal skills		

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	1. Training the student as a specialist in online marketing;					
general	2. Learning "step by step" the specific terminology from the e-marketing activity, the					
objective of	methods, techniques and					
the subject	specific online marketing tools;					
	3. Initiation in online marketing research and in the application of the 4 new software					
	components (4C) of the e-marketing mix.					
	4. Ability to put into practice the knowledge of electronic marketing;					
	5. Ability to collaborate with specialists from other fields of economics.					
7.2 Specific	Theoretical knowledge:					
objectives	• Learning the basic concepts and terminology of online marketing					
	Knowledge and understanding of the online marketing plan					
	Knowledge and understanding of online business models					
	Learning and knowledge of online marketing methods and techniques					
	Knowledge and understanding of the online market					
	Studies and research of online marketing services					
	Skills acquired:					
	• Understand the basic principles of how an online marketing plan works.					
	• Solve various problems using online marketing techniques, services and tools					
	Understand customer relationships, online buyer behavior					
	• Capitalizing on the potential of each student for online marketing activity;					
	• Cultivating a positive attitude towards training and involvement in rediscovery through					
	experiences.					
	• Explaining how to use Internet services as online marketing tools;					
	Scientific interpretation of customer awareness through communication in online					
	business development					

8. Contents*

o: contents		
8.1 Course	Teaching methods	No. of hours/
		Observations
1. The concept of marketing and terminology	Powerpoint	2 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	
2. Fundamentals of marketing	Powerpoint	2 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	

3. Strategic online marketing (e-marketing plan,	Powerpoint	6 hours
strategies and online business models)	presentation with the	
	help of the video	
	projector: free	
	discussions.	
1 Operational online marketing (a marketing	Powerpoint	8 hours
4. Operational online marketing (c-marketing	presentation with the	8 110015
program, methods, techniques and tools)	help of the set doe	
	nelp of the video	
	projector; free	
	discussions;	
5. Online market - segmentation and positioning	Powerpoint	2 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	
6. Online marketing studies and research (Database	Powerpoint	2 hours
management)	presentation with the	
	help of the video	
	projector: free	
	discussions:	
7 Online Buyer Behavior (Customer Belationship	Powerpoint	2 hours
Management)	presentation with the	2 110013
Wanagement)	halp of the video	
	neip of the video	
	projector; free	
	discussions;	
8. The traditional e-marketing mix - HARD	Powerpoint	2 hours
components (product, price, placement and	presentation with the	
promotion)	help of the video	
	projector; free	
	discussions;	
9. Unconventional e-marketing mix - SOFT	Powerpoint	2 hours
components (awareness, temperance, customization	presentation with the	
and direct communication)	help of the video	
	projector; free	
	discussions;	
10. Web service-as an online marketing tool	Powerpoint	2 hours
	presentation with the	
	help of the video	
	projector: free	
	discussions:	
11 E mail service as an online marketing tool	Dowerpoint	2 hours
11. E-man service - as an omme marketing toor	nrecentation with the	
	halm of the video	
	neip of the video	
	projector; free	
	discussions;	
12. E-chat service (forum, blog and socialization) - as	Powerpoint	2 hours
an online marketing tool	presentation with the	
	help of the video	
	projector; free	
	discussions;	
13. E-com service - as an online marketing tool	Powerpoint	2 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	
14. Legal elements and ethics in online marketing in	Powerpoint	2 hours
Demenie	presentation with the	

help of the video	
projector; free	
discussions;	

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1.Gay R., ş.a., Marketing on-line, Editura All, București, 2009

2. Haig M., Manual de e-marketing, Editura Rentrop & Straton, București, 2005

3. Kotler Ph., Marketing Management, Editura Pearson Educațion, Paris, Franța, 2006

4. Popovici Gh. E-marketing, Editura EDP, București, 2009

5. Xeuxet L., Regurile de aur ale marketingului direct, Editura CH Beck, București, 2008

6. Orzan, Gh., Orzan, M., Sisteme informatice de marketing, Ed. a II-a, Editura Uranus, București, 2010

7. Funk, T., Web 2.0 and Beyond: Understanding the New <u>Business Online</u> Business Models, Trends, and Technologies, Editura Praeger, Westport, CT, S.U.A., 2008

8.2 Academic seminar/laboratory/project	Teaching methods	No. of hours/
		Observations
Labor protection training	Powerpoint	1 hours
1. Presentation of project themes	presentation with the	
	help of the video	
	projector; free	
	discussions;	
2. The Internet as a new online marketing technology	Powerpoint	1 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	
3. Creating a database for customer management	Powerpoint	1 hours
	presentation with the	
	help of the video	
	projector: free	
	discussions:	
4. Creating an electronic online research form	Powerpoint	1 hours
C	presentation with the	
	help of the video	
	projector: free	
	discussions:	
5. Online search engine marketing	Powerpoint	1 hours
	presentation with the	
	help of the video	
	projector: free	
	discussions:	
6. Online marketing through the website	Powerpoint	1 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	
7. Online email marketing	Powerpoint	1 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	
8. Online marketing through forum, blog and	Powerpoint	1 hours
socializing	presentation with the	
	help of the video	
	projector; free	
	discussions;	
9. Online marketing through e-com online shopping	Powerpoint	1 hours
	presentation with the	

	halp of the video	
	projector; free	
	discussions;	
10. Online purchases	Powerpoint	1 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	
11. Online sales	Powerpoint	1 hours
	presentation with the	
	help of the video	
	projector: free	
	discussions:	
12. Online advertising	Powerpoint	1 hours
	presentation with the	1 110 01 5
	help of the video	
	projector: free	
	discussions:	
12 Electronic information consister	Demonstration (1.1
13. Electronic information security	Powerpoint	1 hours
	presentation with the	
	help of the video	
	projector; free	
	discussions;	
14. Teaching and supporting the project and final	Powerpoint	1 hours
discussions	presentation with the	
	help of the video	
	projector: free	
	discussions:	

Bibliography

1.Gay R., ş.a., Marketing on-line, Editura All, Bucureşti, 2009

2. Popovici Gh. E-marketing, Editura EDP, București, 2009

3. Orzan, Gh., Orzan, M., Sisteme informatice de marketing, Ed. a II-a, Editura Uranus, București, 2010 4. Funk, T., Web 2.0 and Beyond: Understanding the New Business Online Business Models, Trends,

and Technologies, Editura Praeger, Westport, CT, S.U.A., 2008

5. Online Marketing Tutorial https://www.tutorialspoint.com/online marketing/index.htm

6. Online Marketing https://www.quicksprout.com/the-beginners-guide-to-online-marketing/

7. How to use google analytics? Tutorial for beginnings! <u>Https://www.socialtools.me/blog/en/how-to-use-google-analytics-tutorial/</u>

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

The content of the discipline is found in the curriculum of Management in Information Technology from other university centers ("Politehnica" University of Bucharest), and knowledge of the basic principles of online marketing are current requirements in the operation of any company being also requirements of employers in domain (Qubiz, DecIT, Access, Fortech, Diosoft, IT Maniax, etc.).

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the
			final mark
10.4 Course	Minimum required	Oral exam	70%
	conditions for passing the	The evaluation can be	
	exam (mark 5): in	done face to face or	
	accordance with the	online	
	minimum performance		
	standard		

	D 10			
	For IO:			
	KnowledgeUnderstanding			
10.5 Academic seminar	-			
10.6 Laboratory				
10.7 Project	Minimum required	- Practical works	30%	
	conditions for promotion	The evaluation can be		
	(grade 5): in accordance	done face to face or		
	with the minimum	online		
	performance standard			
	For 10:Knowledge and			
	understanding: Ability to			
	explain and			
	interpret:Complete and			
	correct solution of the			
	requirements			
10.8 Minimum parforma	noo standard:			
10.8 Minimum performa	nce standard.			
Course:	C · · · · 1	1		
1.10 solve well a minimu	um of topics -questions and a	pplications		
2. Minimum grade 5 in th	e project			
Academic seminar:-				
Laboratory:				
Project:-				
1. The student knows the main concepts, recognizes them, defines them correctly and builds a				
simple application;				
2. To use of the concepts	presented in the development	nt and implementation of a p	practical project	

Completion date: 20.09.2020

Date of endorsement in the department: 25.09.2020

Date of endorsement in the Faculty Board: 28.09.2020

1. Data related to the study program

1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Faculty of Electrical Engineering and Information Technology
1.3 Department	Department of Computers and Information Technology
1.4 Field of study	Computers and information technology
1.5 Study cycle	Master
1.6 Study program/Qualification	Management in Information Technology

2. Data related to the subject

2.1 Name of the st	ubjec	t	Et	Ethics and integrity in scientific research				
2.2 Holder of the	subje	ct	Lect. PhD jr. Anca PĂCALĂ					
2.3 Holder of the a seminar/laboratory	acade y/pro	emic ject	Lect. PhD jr. Anca PĂCALĂ					
2.4 Year of	Ι	2.5 Semest	ter	2	2.6 Type of the	Continuous	2.7 Subject regime	SYD
study					evaluation	Assessment		

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

2

				/		
3.1 Number of hours per week		1	of which: 3.2 course	1	3.3 academic seminar/laboratory/project	-
3.4 Total of hours from the curricul	um	14	Of which: 3.5	14	3.6 academic seminar/laboratory/project	-
Distribution of time			course		seminal/neoratory/project	
Study using the manual, course sup	port,	biblio	graphy and handw	vritten	notes	20
Supplementary documentation using	g the	librar	y, on field-related	electr	onic platforms and in field-	10
		• / 1		(C. 1)	1	
Preparing academic seminaries/labo	orator	nes/ th	emes/ reports/ poi	rttolio	s and essays	
Tutorials						
Examinations						
Other activities.						
3.7 Total of hours for	36					
individual study						
3.9 Total of hours per	50					
semester						

4. **Pre-requisites** (where applicable)

3.10 Number of credits

4.1 related to the	(Conditions)
curriculum	
4.2 related to skills	

5.1. for the development of	- Attendance at least 50% of the courses
the course	- The course can be held face to face or online
5.2.for the development of	
the academic	
laboratory/project	

6. Specific skills acquired

CT1. Responsibly apply the principles, norms and values of professional ethics in order to achieve the goals and identify the objectives, the available resources, the steps to be done and time spent for finishing the works, the deadlines, and the risks involved.

7. The objectives of the discipline (resulting from the grid of the specific competences acquired)

7.1 The	Knowledge, understanding, explanation and interpretation of concepts specific to
general	ethics and integrity in scientific research for their application in the development
objective of	of a responsible professional career.
the subject	1 1
7.2 Specific	The course aims to familiarize students with the notions of ethics, integrity in
objectives	scientific research; acquiring the knowledge and skills necessary to apply the
	rules of ethics in scientific research

8.8. Contents

8.1.Course	Teaching methods	No. of hours/ Observations
The concept of ethics; general aspect of the ethics in scientific research. Regulations on ethics in Romanian universities.	Free exposure, with the presentation of the course with video projector, on the board or online	4h
Integrity in the educational system: integrity standards, promotion of academic integrity, violations of academic integrity, good practices.	Free exposure, with the presentation of the course with video projector, on the board or online	2h
Ethical issues of research and publication: plagiarism, forms of plagiarism. Other forms of academic dishonesty.	Free exposure, with the presentation of the course with video projector, on the board or online	4h
Justice and equity in academic organizations and research teams. Legal provisions applicable to the ethics and integrity of scientific research.	Free exposure, with the presentation of the course with video projector, on the board or online	2h
Elaboration of a scientific paper according to the principles of ethics and academic integrity	Free exposure, with the presentation of the course with video projector, on the board or online	2h

Bibliography 1. Ariely, D. (2012). Adevărul (cinstit) despre necinste. Cum îi mințim pe toți dar mai ales pe noi înșine. București: Editura Publica 2. Proiect PODCA 2013. Ghid practic privind cercetarea stiintifica 3. Pisoschi, A., Vacariu V, Ioana Popescu I. 2006. Etica în cercetare, 4. Singer, P. (2006), *Tratat de Etică*, Bucuresti: Editura Polirom

5. Şarpe, D., Popescu, D., Neagu, A., Ciucur, V., (2011), *Standarde de integritate în mediul universitar*, *UEFISCDI*, București.

6.Şercan, Emilia, (2017), *Deontologie academică. Ghid practic,* Editura Universității București 7. L.E.N- 1/2011

8. Legea 8/1996 privind drepturile de autor

9. Legea 206/2004 privind buna conduită în cercetarea științifică, dezvoltarea tehnologică și inovare

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8.2 Academic seminar/laboratory/project	Teaching methods	No. of hours/
		Observations

9. Corroboration of the discipline content with the expectations of the representatives of epistemological community, professional associations and representative employers in the field related to the program

Knowledge of these notions is a stringent requirement of vocational training. The content of the discipline is correlated with the need to train responsible adults, able to apply and respect the principles of ethics and integrity in personal and professional life.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods The evaluation can be done face-to-face or online	10.3 Percent from the final mark
10.4 Course	Minimum required conditions for passing the exam (mark 5): in accordance with the minimum performance standard it is necessary to know the fundamental notions required in the subjects, without presenting details on them For 10: thorough knowledge of all subjects is required	Oral examination Students receive for solving each a form with 2 subjects of theory and an application.	100 %
10 6 Minimum portormanaa standard			

10.6 Minimum performance standard:

Course: - Knowledge of the essential notions in the field of ethics and integrity in scientific research; - Ability to know and recognize the extent of one's rights and obligations as a researcher;

Completion date:

17.09.2020

Date of endorsement in the

department: 24.09.2020 Date of endorsement in the Faculty Board: 28.09.2020