

SUBJECT DESCRIPTION

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	Control Systems Engineering and Management
1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering / Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject	Advanced management methods						
2.2 Holder of the subject	Assoc.prof. PhD eng.ec. Liliana Doina M gdoiu						
2.3 Holder of the academic seminar/laboratory/project	Assoc.prof. PhD eng.ec. Liliana Doina M gdoiu						
2.4 Year of study	I	2.5 Semester	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	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					68h
Study using the manual, course support, bibliography and handwritten notes					30
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					10
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					20
Tutorials					
Examinations					9
Other activities.					
3.7 Total of hours for individual study	69				
3.9 Total of hours per semester	125				
3.10 Number of credits	5				

4. Pre-requisites (where applicable)

4.1 related to the curriculum	Knowledge of the General Management course
4.2 related to skills	

5. Conditions (where applicable)

5.1. for the development of the course	- attending at least 50% of the course - the course can be held face to face or online
5.2. for the development of the academic seminar/laboratory/project	- Mandatory attendance at all seminars; - Students come with observed seminar papers - A maximum of 3 seminars can be recovered during the semester (30%); - Attendance at seminar hours below 70% leads to the restoration of the

	discipline - The seminar can be held face to face or online
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6. Specific skills acquired

Professional skills	<p>C1. Knowledge of the main types of processes and phenomena of economic communication, of the theoretical elements of microeconomics and practical aspects regarding the economic-financial flows at business level</p> <p>C4. Development and evaluation of technical, economic and financial flows at business level, advanced management methods</p>
Transversal skills	<p>TC3. Identifying opportunities for continuous training and efficient use, for one's own development, of information sources and of communication resources and assisted professional training (Internet portals, specialized software applications, databases, online courses, etc.) both in Romanian, as well as in a language of international circulation.</p>

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

7.1 The general objective of the subject	Familiarization of students with the main management methods in emergency situations
7.2 Specific objectives	<p>The course aims to present the theoretical elements of the emergency situation in case of fire</p> <p>The seminar familiarizes students with practical aspects of operational interactions for change management in a complex context</p>

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
Chapter 1. Fire - phenomenon - event	Free exposure, with the presentation on-line	2 h
Chapter 2. Fire safety performance a constructions	Free exposure, with the presentation on-line	2 h
Chapter 3. Methods for calculating the load and thermal density of fire	Free exposure, with the presentation on-line	2 h
Chapter 4. Technical causes of fire - their establishment and research	Free exposure, with the presentation on-line	4 h
Chapter 5. Technical fire prevention systems	Free exposure, with the presentation on-line	2 h
Chapter 6. Technical fire extinguishing systems	Free exposure, with the presentation on-line	4 h

Chapter 7. Fire risk management	Free exposure, with the presentation on-line	4 h
Chapter 8. Methods of identification and assessment of fire risk	Free exposure, with the presentation on-line	2 h
Chapter 9. Fire defense management in a goal	Free exposure, with the presentation on-line	2 h
Chapter 10. Control of fire prevention and extinguishing installations	Free exposure, with the presentation on-line	2 h
Total		28 h
Bibliography 1. Crăciun, Ionel, Managementul situațiilor de urgență , Vol. II, Editura Bren, București, 2006 2. Crăciun, Ionel; Udor, Aurel, Riscuri generatoare de situații de urgență și managementul riscurilor de incendiu , Editura Stadiform, București, 2009 3. Bălulescu, Pompiliu; Crăciun, Ionel, Agenda pompierului , Ediția a II-a revizuită și adăugită, Editura Imprimeriei de Vest, Oradea, 2009 4. Crăciun, Ionel, Servicii de urgență , Editura Contrast, București, 2009 5. Calotă, Sorin ș.a., Manualul pompierului , Editura Imprimeriei de Vest, Oradea, 2009 6. Crăciun, Ionel; Calotă, Sorin; Lencu, Victor, Stabilirea și prevenirea cauzelor de incendiu , Editura Tehnică, Ediția a II-a, București, 2001 7. Bălulescu, Pompiliu; Crăciun, Ionel, Agenda pompierului , Editura Tehnică, București, 1993 8. Bălulescu, Pompiliu; Călinescu, Vasile, Instalații automate de detectare și stingere a incendiilor , Editura tehnică, București, 1977 9. Udor, Aurel; Nour, Aurel, Securitatea națională și managementul situațiilor de urgență generate de insecuritatea obiectivelor economice importante , Editura Stadiform, București, 2007 10. *** Ghidul serviciilor voluntare și private pentru situații de urgență - SVPSU , Editura Contrast, București, 2009		
8.2 Academic seminar/laboratory/project	Teaching methods	No. of hours/ Observations
1. Report: Emergency situations caused by fire	Students receive homework for the seminar papers or choose their homework at least a week in advance, study, design the papers and present them at the seminar. Appreciations and comments are made under the guidance of the teacher.	4 h
2. Paper: On the combustibility of materials and substances		4 h
3. Paper: Fire resistance and stability		4 h
4. Report: Calculation of load and thermal density of fire		4 h
5. Report: Technical causes of fire		4 h
6. Paper: Technical fire prevention and extinguishing systems		4 h
7. Paper: The concept of fire risk management		4 h
Total:		28 h
Bibliography It is the one indicated for the course		

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

<ul style="list-style-type: none"> ▪ The content of the discipline is adapted and satisfies the requirements imposed by the labor market, being agreed by social partners, professional associations and employers in the field related to the study program.
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10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percent from the final mark
10.4 Course	<ul style="list-style-type: none"> - for grade 5 it is necessary to know the fundamental notions required in the subjects, without presenting details on them - for grade 10, a thorough knowledge of all subjects is required 	Oral examination Students receive 3 topics to solve	70%
10.5 Project	<ul style="list-style-type: none"> - for Note 5, it is necessary to know the structure of the paper and one or two concepts in the paper - for grade 10, in-depth knowledge of the topic of the paper and its support during the seminar 	At each seminar, the students draw up a report, which can be collective, which they support and which is submitted to debates during the seminars. Each student also receives a grade for the seminar activity during the semester	30%
10.6 Minimum performance standard: Course: - Solving and explaining complex problems associated with the discipline of advanced management methods specific to the field of engineering and management - Participation in at least half of the courses. Seminar: - Designing processes for removing fire risks, preventing and extinguishing fires at business level, for a given situation - Participation at all seminar hours.			

Completion date:

01.09.2023

Date of endorsement in the department:

18.09.2023

Date of endorsement in the Faculty Board:

29.09.2023

SUBJECT DESCRIPTION

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 Control Systems Engineering and Management
1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering / Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject	Automatic systems management						
2.2 Holder of the subject	Prof. PhD eng. Helga Silaghi						
2.3 Holder of the academic laboratory	Prof. PhD eng. Helga Silaghi						
2.4 Year of study	I	2.5 Semester	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	4	of which: 3.2 course	2	3.3 academic laboratory	2
3.4 Total of hours from the curriculum	56	Of which: 3.5 course	28	3.6 academic laboratory	28
Distribution of time					hours
Study using the manual, course support, bibliography and handwritten notes					40
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					20
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					25
Tutorials					
Examinations					9
Other activities.					
3.7 Total of hours for individual study	94				
3.9 Total of hours per semester	150				
3.10 Number of credits	6				

4. Pre-requisites (where applicable)

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

5. Conditions (where applicable)

5.1. for the development of the course	- Attendance at least 50% of the courses - The course can be held face to face or online
5.2. for the development of the academic seminary/laboratory/project	- The project can be carried out face to face or online - The frequency at project hours below 70% leads to the restoration of the discipline

6. Specific skills acquired

Professional skills	<p>C3. Planning, scheduling and management of enterprises and related logistics networks and assisted tracking of production.</p> <p>C4. Development and evaluation of technical flows, financial economic and business level, advanced management methods.</p>
Transversal skills	<p>TC2. Identify the roles and responsibilities of each member of a pluri-disciplinary team and apply efficient work and relational techniques inside the team</p>

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

7.1 The general objective of the subject	<ul style="list-style-type: none"> The discipline has as objective the familiarization of the students from the master's specialization Management and Communication in Engineering, with the field of advanced electric drives.
7.2 Specific objectives	<ul style="list-style-type: none"> The course aims to present the theoretical elements of the technique of advanced electric drives. The project provides the necessary knowledge to the students to be able to design an advanced electric drive

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Advanced electric drives with DC servomotors	Free exposure, with the presentation of the course with video projector, on the board or online	4h
2. Advanced electric drives with asynchronous servomotors	Free exposure, with the presentation of the course with video projector, on the board or online	4h
3. Advanced electric drives with synchronous servomotors	Free exposure, with the presentation of the course with video projector, on the board or online	4h
4. Advanced electric drives with stepper motors	Free exposure, with the presentation of the course with video projector, on the board or online	6h

5. Variable frequency induction machine control systems	Free exposure, with the presentation of the course with video projector, on the board or online	6h
6. Advanced electric drives with linear motors	Free exposure, with the presentation of the course with video projector, on the board or online	4h
Bibliography 1. SILAGHI H., SPOIALĂ V., SILAGHI M. – <i>Ac ion ri electrice</i> , Editura Mediamira , Oradea, 2009 2. SILAGHI, H., SPOIALĂ, VIORICA, <i>Ac ion ri electrice-probleme fundamentale i no iuni de proiectare</i> , Ed. Universității din Oradea, 2002 3. SILAGHI H., SILAGHI M. – <i>Sisteme de ac ion ri electrice cu ma ini asincrone</i> , Editura Treira , Oradea, 2000 4. IANCU V., SPOIALĂ D., SPOIALĂ VIORICA, <i>Ma ini electrice i sisteme de ac ion ri electrice</i> , vol.II, Ed. Universității din Oradea, 2006 5. RICHARD CROWDER, <i>Electric drives and electromechanical systems</i> , Elsevier, Great Britain, 2006 6. VIORICA SPOIALĂ, HELGA SILAGHI, <i>Ac ion ri electrice speciale</i> , Editura Universității din Oradea, 2010 7. HELGA SILAGHI, V. SPOIALA, D.SPOIALA, A. SILAGHI - <i>Ac ion ri electrice avansate</i> , Editura Universității din Oradea, Oradea, ISBN 978-606-10-2035-5, 157 pg., 2019		
8.2 Academic project	Teaching methods	No. of hours/ Observations
Design of the lifting mechanism of a general purpose overhead crane	Students receive the project theme and design methodology and under the guidance of the teacher perform the project stages	14h
Bibliography 1.Silaghi Helga, Spoială Viorica, <i>Proiectarea ac ion rilor electrice</i> , Îndrumător de proiectare, Editura Universității din Oradea, 2009 2.Helga Silaghi, V. Spoiala, D.Spoiala, A. Silaghi - <i>Ac ion ri electrice avansate</i> , Editura Universității din Oradea, Oradea, ISBN 978-606-10-2035-5, 157 pg., 2019 3. Viorica Spoială, Helga Silaghi, Dragoș Spoială – <i>Ac ion ri electrice</i> . Îndrumator de laborator. Universitatea din Oradea, ISBN 978-606-10-1432-3, Ediție CD-ROM, 140 pag, 2014 4. Helga Silaghi, Viorica Spoială, Claudiu Costea, <i>Ac ion ri electrice – îndrumător de laborator</i> , Editura Universității din Oradea, 126 pg, 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

- The content of the discipline can be found in the curriculum of Management and Communication in Engineering from other university centers that have accredited similar specializations (Technical University of Cluj-Napoca, University of Craiova, "Politehnica" University of Timisoara, Gh. Asachi University of Iasi, etc.) and knowledge of the types of electric drives and their operation and design is a stringent requirement of employers in the field (Comau, Faist Mekatronics, Celestica, GMAB, etc.).

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods The evaluation can be	10.3 Percent from the final mark
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		done face-to-face or online	
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 3 subjects of theory and an application.	60 %
10.5 Project	Minimum required conditions for promotion (grade 6): going through the design stages, without deepening the calculations For 10: going through all the design stages, with the completion of the calculations and the electrical supply and control diagrams	Oral presentation Following the presentation of the project completed during the semester, each student receives a grade.	40%
<p>10.6 Minimum performance standard:</p> <p>Course: Selection and independent use of learned methods and algorithms for known standard situations as well as completion of calculations (analytical and numerical) with physical quantities.</p> <p>Project: Development and design of automation structures based on electrical drives by using the principles of project management</p> <p>The timely solution, in individual activities and group activities, in conditions of qualified assistance, of the problems that require the application of principles and rules respecting the norms of professional deontology.</p> <p>Responsible assumption of specific tasks in multi-specialized teams and efficient communication at institutional level.</p> <p>Elaboration and argumentative support of the application of a personal professional development plan.</p>			

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1.1 Higher education institution	UNIVERSITY OF ORADEA
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1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering / Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject	Ethics and integrity in scientific research						
2.2 Holder of the subject	Lect. PhD jr. Anca P CAL						
2.3 Holder of the academic seminar/laboratory/project	Lect. PhD jr. P CAL						
2.4 Year of study	I	2.5 Semester	2	2.6 Type of the evaluation	Continuous Assessment	2.7 Subject regime	SYD

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

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 curriculum	14	Of which: 3.5 course	14	3.6 academic seminar/laboratory/project	-
Distribution of time					
Study using the manual, course support, bibliography and handwritten notes					20
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					10
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					
Tutorials					
Examinations					
Other activities.					
3.7 Total of hours for individual study	36				
3.9 Total of hours per semester	50				
3.10 Number of credits	2				

4. Pre-requisites (where applicable)

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

5. Conditions (where applicable)

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

6. Specific skills acquired
<p>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.</p>

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

7.1 The general objective of the subject	Knowledge, understanding, explanation and interpretation of concepts specific to ethics and integrity in scientific research for their application in the development of a responsible professional career.
7.2 Specific objectives	The course aims to familiarize students with the notions of ethics, integrity in 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		
<p>1. Ariely, D. (2012). <i>Adevrul (cinstit) despre necinste. Cum îi minim pe toți dar mai ales pe noi în sine</i>. București: Editura Publica</p> <p>2. Proiect PODCA 2013. Ghid practic privind cercetarea științifică</p> <p>3. Pisoschi, A., Vacariu V, Ioana Popescu I. 2006. <i>Etica în cercetare</i>,</p> <p>4. Singer, P. (2006), <i>Tratat de Etică</i>, București: Editura Polirom</p> <p>5. Șarpe, D., Popescu, D., Neagu, A., Ciucur, V., (2011), <i>Standarde de integritate în mediul universitar, UEFISCDI</i>, București.</p> <p>6. Șercan, Emilia, (2017), <i>Deontologie academică. Ghid practic</i>, Editura Universității București</p> <p>7. L.E.N- 1/2011</p> <p>8. Legea 8/1996 privind drepturile de autor</p> <p>9. Legea 206/2004 privind buna conduită în cercetarea științifică, dezvoltarea tehnologică și inovare</p>		
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 %
<p>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;</p>			

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

2. Data related to the subject

2.1 Name of the subject	Flexible fabrication systems						
2.2 Holder of the subject	Lect.. PhD eng. Marius Romocea						
2.3 Holder of the academic laboratory/project	Lect. PhD eng. Marius Romocea						
2.4 Year of study	I	2.5 Semester	2	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	3	of which: 3.2 course	1	3.3 academic laboratory/project	2
3.4 Total of hours from the curriculum	42	Of which: 3.5 course	14	3.6 academic laboratory/project	28
Distribution of time					hours
Study using the manual, course support, bibliography and handwritten notes					28
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					19
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					30
Tutorials					
Examinations					6
Other activities.					
3.7 Total of hours for individual study	83				
3.9 Total of hours per semester	125				
3.10 Number of credits	5				

4. Pre-requisites (where applicable)

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

5. Conditions (where applicable)

5.1. for the development of the course	- Attendance at least 50% of the courses - The course can be held face to face or online
5.2. for the development of the academic	- Mandatory presence at all laboratories; - The laboratory/project can be carried out face to face or online

laboratory/project	<ul style="list-style-type: none"> - Students come with the observed laboratory works - 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
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6. Specific skills acquired

Professional skills	<p>Knowledge of the main types of processes and phenomena of economic communication, of the theoretical elements of microeconomics and practical aspects regarding the economic-financial flows at business level</p> <p>Knowledge of electric power sources, knowledge of company software, managerial informatics, elaboration and interpretation of technical documentation.</p>
Transversal skills	identification of continuous training opportunities and efficient use, for one's own development, of information sources and of communication resources and assisted professional training (Internet portals, specialized software applications, databases, online courses, etc.) both in Romanian, as well as in a language of international circulation

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

7.1 The general objective of the subject	<p>The acquisition, by the future specialists, of information and knowledge regarding: the place and the role of the Assisted Production Systems (SPA) in the modern production; behavior, structure, forms of organization of SPA; the logic of SPA design and their synthesis; organization and endowment of advanced systems; SPA modeling and simulation; management concepts regarding production systems;</p> <p>Acquiring principles and skills for designing and organizing advanced production systems.</p> <p>Formation of documentation skills in the field of SPA and analysis of the economic efficiency of the introduction of advanced systems</p>
7.2 Specific objectives	<p>Using cutting-edge theoretical and practical knowledge in the field of management and communication in engineering as a basis for the development and / or original application of ideas;</p> <p>Awareness of key issues in the field of management and communication in engineering and in the area of interference between fields;</p> <p>Developing new skills in response to emerging new knowledge and techniques;Manifestation of an active behavior towards a series of social, scientific and ethical aspects that appear in work or study.</p>

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
Chapter I .The organizational structure of the enterprise1.1. The economy and its sectors1.2. Its enterprise and organization1.2.1. Getting started1.2.2. Organization of the enterprise1.2.3. Functions of the enterprise1.2.4. Global enterprise	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 2.Product and product life cycle2.1. The product and its role2.2. Types of products2.2.1. Consumer goods and industrial goods2.2.2. Goods and services2.3. Product	Free exposure, with the presentation of the course with	1h

attributes.2.4. Product name and brand 2.4.1. name 2.4.2. mark 2.5. Product life cycle. 2.6.The PLM (Product Lifecycle Management) concept	video projector, on the board or online	
Chapter III. Computer integrated production (CIP) 3.1. The CIP principle 3.2. CIP facilities 3.3. Modeling and simulation in CIP hypersystems 3.4. The control system architecture of a CIP hypersystem 3.5.Advantages and disadvantages of the CIP hypersystem	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 4.Automated Storage and Retrieval System (ASRS) 4.1. Development of automatic storage and retrieval systems 4.2. Deposit functions 4.3. Classification of deposits 4.4. Retrieval systems. 4.5. Fixed and mobile storage (support) structures 4.6. Shelves	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter. V. Automated Storage and Retrieval System (ASRS) 5.1. Means for serving storage structures 5.2. Automatic warehouse control systems 5.3. ASRS control system architecture 5.4. Strategies for managing automatic deposits 5.5. The advantages of automatic storage systems are as follows 5.6. Cost optimization using ASRS systems	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 6. AGVS (Automated Guided Vehicles System) 6.1. The structure of a robocar 6.2. Navigation of AGV systems 6.2.1. Navigation using radiofrequency 6.2.2. Navigation using tapes (magnetic or colored) 6.2.3. Laser navigation 6.2.4. Gyroscopic navigation	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 7. AGVS (Automated Guided Vehicles System) 7.1. Management of the AGV system 7.2. Robot traction system 7.3. Robot steering system 7.4. Kinematics of robot steering 7.5. Precisely stopping the robots 7.6. On-board microcomputer 7.7. Security systems 7.8. The main types of AGV- used in industry	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 8.Flexible Manufacturing Systems (SFF) 8.1. General structure of manufacturing systems 8.2. Analysis of flexible manufacturing systems 8.3. Synthesis of manufacturing flows in flexible manufacturing systems 8.4. The need to model and simulate the management and operation of flexible manufacturing systems 8.5. Mathematical modeling of flexible manufacturing systemS	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Head. IX. Computer Aided Quality Assurance CAQ, CAT 9.1. Quality assurance system 9.2. Quality management 9.3. Using the computer in testing	Free exposure, with the presentation of the course with video projector, on the board or	1h

	online	
Chapter 10..Computer aided design CAD / CAM 10.1. Definition of CAD / CAM 10.2. CAD / CAM content 10.3. CAD / CAM development history 10.4. Production cycle and CAD / CAM	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 11.Computer aided design CAD / CAM 11.1. The structure of a design and manufacturing process 11.2. Computer aided design, CAD 11.3. Computer Aided Manufacturing, CAM 11.4. CAD / CAM tools 11.5. Study and design of computer aided electrical devices	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 12.Computer Aided Engineering, CAE	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 13.Computer Aided Technology Design, CAPP	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Chapter 14.Computer Aided Production Planning, Preparation and Tracking, CAPS	Free exposure, with the presentation of the course with video projector, on the board or online	1h
Bibliography <ol style="list-style-type: none"> 1. Abrudan Ioan, <i>Sisteme flexibile de fabrica ie</i>, Editura Dacia, Cluj-Napoca. 1996. 2. Ceașu Iulian: <i>Dic ionar enciclopedic managerial</i>, vol. I, Ed. Academică de management, București 2000. 3. Ciobanu Gh., Rada I.C.: <i>Managementul afacerilor economice interna ionale</i>, Casa de Presă și Editură „Anotimp”, Oradea, 2000. 4. Drăgoi George, <i>Sisteme integrate de produc ie</i>, Editura Tehnică, Buc., 2000. 5. Florian Lungu, <i>Modelarea func ion rii sistemelor flexibile de fabrica ie cu ajutorul teoriei jocurilor</i>, Editura Dacia, Cluj-Napoca, 2006. 6. Lucian Ciobanu, <i>Sisteme flexibile de fabrica ie</i>, Univ. Gh. Asachi, Iași 2003. 7. Lazar Ioan, Mortan Maria, Vere Vicențiu, Lazar Sorin Paul, <i>Management General</i>, Ed. 		

RISOPRINT, Cluj-Napoca,2004.

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14. Gheorghe Rădoi, Marius Guran, *Sisteme integrate de produc ie asistate de calculator*, Editura Tehnică, București, 1997.
15. Horia Liviu Popa, *Teoria i ingineria sistemelor. Concepte, modele, metode, competitivitate*, Editura Politehnica Timișoara, 2003.
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17. Ispas C., Masala I., Zapciu M., Mohora C., *CIM – Computer Integrated Manufacturing. Indrumar de proiectare*. Editura BREN; București, 1999.
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19. Marius Cioca, *Conducerea asistat a unit ilor economice*, Editura Universității „Lucian Blaga” din Sibiu, 2004.
20. Vitriciu Mătieș, *Tehnologie i educa ie mecatronic* , Editura Todesco, Cluj-Napoca, 2001.
21. Șt. Nagy, Ioan C-tin Rada – „*Sisteme avansate de produc ie (Note de curs)*”, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, 232 pg., 2008, [ISBN 978-973-88615-7-2], curs format electronic.
22. Șt. Nagy – „*Sisteme avansate în procesele de produc ie*”, Editura Universității din Oradea, 252 pg., 2011, [ISBN 978-606-10-0486-7].
23. Șt. Nagy, Ioan C-tin Rada – „*Sisteme avansate de produc ie. (Aplica ii)*”, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, 232 pg., 2008, [ISBN 978-973-88615-8-9], aplicații format electronic.

8.2 Academic laboratory	Teaching methods	No. of hours/ Observations
1.Product and product life cycle	During the laboratory classes, the aim was to acquire the	4h
Computer integrated production (CIP)		4h
3.Automated Storage and Retrieval System (ASRS)		4h
4.AGVS (Automated Guided Vehicles System)		4h
5.Computer Aided Quality Assurance CAQ, CAT		4h

6.Computer aided design CAD / CAM 7.Teaching Synthesis Papers	theoretical concepts and to transfer in the applicative plan the theoretical knowledge acquired during the course.	4h
8.3 Academic project	Teaching methods	No. of hours/ Observations
Bibliography		

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 Sheet is adapted and satisfies the requirements imposed by the labor market, being agreed by social partners, professional associations and employers in the field related to the master's program.

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	Written exam Students receive for solving each a form with 3 subjects of theory and an application.	70%

10.5 Laboratory	Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard recognition of the stands used to carry out the laboratory works, without presenting details on them For 10: detailed knowledge of how to perform all laboratory work	Test + practical application At each laboratory students receive a test and a grade. Each student also receives a grade for laboratory work during the semester and for the laboratory work file. This results in an average for the laboratory.	30%
10.6 Project			
<p>10.6 Minimum performance standard:</p> <p style="text-align: center;">Course</p> <p>The student is able to develop a synthesis paper, a case study using bibliographic material as well as knowledge of engineering, management and communication. Can perform a job responsibly performing role-specific tasks in a team</p>			

Completion date:

01.09.2023

Date of endorsement in the department:

18.09.2023

Date of endorsement in the Faculty Board:

29.09.2023

SUBJECT DESCRIPTION

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 Control Systems Engineering and Management
1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering / Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject	Fundamentals of economic communication						
2.2 Holder of the subject	Assoc.prof. PhD eng.ec. Liliana Doina M gdoiu						
2.3 Holder of the academic seminar	Assoc.prof. PhD eng.ec. Liliana Doina M gdoiu						
2.4 Year of study	I	2.5 Semester	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	3	of which: 3.2 course	2	3.3 academic laboratory	1
3.4 Total of hours from the curriculum	42	Of which: 3.5 course	28	3.6 academic laboratory	14
Distribution of time					hours
Study using the manual, course support, bibliography and handwritten notes					46
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					24
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					30
Tutorials					2
Examinations					6
Other activities.					
3.7 Total of hours for individual study	108				
3.9 Total of hours per semester	150				
3.10 Number of credits	6				

4. Pre-requisites (where applicable)

4.1 related to the curriculum	(Conditions) Knowledge of the Basics of Economics and General Economics
4.2 related to skills	

5. Conditions (where applicable)

5.1. for the development of the course	- Attendance at least 50% of the courses - The course can be held face to face or online
5.2. for the development of the academic seminary/laboratory/project	- Mandatory presence at all seminars; - The can be carried out face to face or online - Students come with the observed seminar papers - A maximum of 4 works can be recovered during the semester (30%);

	<ul style="list-style-type: none"> - The frequency at seminar hours below 70% leads to the restoration of the discipline - The seminar can be held face to face or online
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6. Specific skills acquired

Professional skills	<p>C2. Knowledge of electrical power sources, knowledge of business software, computer management, drafting and interpreting technical documentation.</p> <p>C5. Project management and enterprise of electrical, electronic and energy marketing and economic agreements.</p> <p>C6. Knowledge of key issues in the field of communication and management in engineering and from the interference of fields</p>
Transversal skills	<p>TC2. Identify the roles and responsibilities of each member of a pluri-disciplinary team and apply efficient work and relational techniques inside the team</p> <p>TC3. Identify the long-life training opportunities and the efficient use (for self development) of informational sources, as well as communication and assisted professional training resources (Internet websites, dedicated software applications, databases, on-line courses etc.) both in Romanian language and some other international spoken language</p>

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

7.1 The general objective of the subject	<ul style="list-style-type: none"> ● Familiarizing students with theories on economic communication
7.2 Specific objectives	<ul style="list-style-type: none"> ● The course aims to present the theoretical elements of economic communication ● The seminar familiarizes students with practical aspects of communication and negotiation in the field of economics

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Communication	Free exposure, with the presentation of the course with video projector, on the board or online	3h
2. Communication techniques in interpersonal relationships	Free exposure, with the presentation of the course with video projector, on the board or online	3h
3. Oral communication	Free exposure, with the presentation of the course with video projector, on the board or online	2h

4. Written communication	Free exposure, with the presentation of the course with video projector, on the board or online	2h
5. Negotiation. The concept of negotiation	Free exposure, with the presentation of the course with video projector, on the board or online	3h
6. Basic principles in the negotiation process	Free exposure, with the presentation of the course with video projector, on the board or online	3h
7. The function of negotiation - the profile of the negotiator	Free exposure, with the presentation of the course with video projector, on the board or online	3h
8. Contract negotiation	Free exposure, with the presentation of the course with video projector, on the board or online	3h
9. Selling techniques. The concept of sale	Free exposure, with the presentation of the course with video projector, on the board or online	3h
10. Product presentation and the art of negotiation	Free exposure, with the presentation of the course with video projector, on the board or online	3h
<p>Bibliography</p> <p>1. Rada, Ioan Constantin; Măgdoiu, Liliana Doina, Management general, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2009, CD-ROM</p> <p>2. Rada, Ioan Constantin; Rica, Ivan; Măgdoiu, Liliana Doina, Tehnici de negociere, Editura Universității din Oradea, 2011, CD-ROM</p> <p>4. Măgdoiu, Liliana Doina, Management și Comunicare în Ingineria Economică, Ed. CA Publishing, Cluj-Napoca, 2012</p> <p>5. Rada, Ioan Constantin, Economie generală I, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2009, CD-ROM</p> <p>6. Rada, Ioan Constantin, Economie generală II, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2009, CD-ROM</p> <p>7. Rada, Ioan Constantin Microeconomie. Idei moderne. Vol. I, Editura Asociației „Societatea Inginerilor</p>		

de Petrol și Gaze”, București, 2007		
8. Rada, Ioan Constantin, Microeconomie. Idei moderne. Vol. II , Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2008		
9. Rada, Ioan Constantin; Rica, Ivan; Măgdoi, Liliana Doina, Finanțe și credit (note de curs) , Editura Universității din Oradea, 2011, CD-ROM		
10. Rada, Ioan Constantin; Rica Ivan; Măgdoi, Liliana Doina, Finanțe și credit (aplicații pentru seminar) , Editura Universității din Oradea, 2011, CD-ROM.		
8.2 Academic seminar	Teaching methods	No. of hours/ Observations
1. Paper: Public communication techniques. The speech. 2. Reported: Communication techniques with customers. 3. Report: The interview. 4. Paper: Written communication. 5. Paper: Negotiation. The concept of negotiation. 6. Paper: Basic principles in the negotiation process. 7. Paper: Product presentation and the art of negotiation.	Students receive laboratory reports at least one week in advance, study them, and are randomly tested throughout the laboratory. Students implement the work under the guidance of the teacher.	2 h 2 h 2 h 2 h 2 h 2 h 2 h
Bibliography It is the one indicated for the course		

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 can be found in the curriculum of Management and Communication in Engineering from other university centers that have accredited similar specializations (Technical University of Cluj-Napoca, University of Craiova, "Politehnica" University of Timisoara, Gh. Asachi University of Iasi, etc.) and knowledge of the types of electric drives and their operation and design is a stringent requirement of employers in the field (Comau, Faist Mekatronics, Celestica, GMAB, etc.).

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 are given two topics to solve	70 %
10.5 Academic seminar	- for grade 5, it is necessary to know the structure of the paper and one or two concepts	At each seminar, the students draw up a report, which can be collective, which they	30%

	in the paper - for grade 10, in-depth knowledge of the topic of the paper and its support during the seminar	support and which is submitted to the debates during the seminars. Each student also receives a grade for the seminar activity during the semester	
<p>10.5 Minimum performance standard: Course: Elaboration of a professional project specific to the field of Engineering and Management using specific software systems and databases. Designing communication processes at business level, for a given situation in the electrical, electronic and energy field Academic seminar: Responsible implementation, in conditions of qualified assistance, of projects for solving some problems specific to the field, with the correct evaluation of the workload, of the available resources, of the necessary completion time and of the risks, in conditions of application of deontological norms and professional ethics in the field, as well as occupational safety and health.</p>			

Completion date:

01.09.2023

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29.09.2023

SUBJECT DESCRIPTION

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 Control Systems Engineering and Management
1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering / Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject	Managerial informatics						
2.2 Holder of the subject	Assoc.prof. PhD eng.ec. Dragos Spoiala						
2.3 Holder of the academic laboratory	Assoc.prof. PhD eng.ec. Dragos Spoiala						
2.4 Year of study	I	2.5 Semester	2	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	3	of which: 3.2 course	2	3.3 academic laboratory	1
3.4 Total of hours from the curriculum	42	Of which: 3.5 course	28	3.6 academic laboratory	14
Distribution of time					hours
Study using the manual, course support, bibliography and handwritten notes					36
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					17
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					24
Tutorials					
Examinations					6
Other activities.					
3.7 Total of hours for individual study	83				
3.9 Total of hours per semester	125				
3.10 Number of credits	5				

4. Pre-requisites (where applicable)

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

5. Conditions (where applicable)

5.1. for the development of the course	<ul style="list-style-type: none"> - Attendance at least 50% of the courses - The course can be held face to face or online
5.2. for the development of the academic seminary/laboratory/project	<ul style="list-style-type: none"> - The computer network in the laboratory to work, with the Linux program installed - Mandatory presence at all laboratories - Students come with laboratory papers theoretically known

	<ul style="list-style-type: none"> - A maximum of 2 works can be recovered during the semester (30%) - The laboratory can be carried out face to face or online - The frequency at project hours below 70% leads to the restoration of the discipline
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6. Specific skills acquired

Professional skills	<p>C2. Knowledge of electrical power sources, knowledge of business software, computer management, drafting and interpreting technical documentation.</p> <p>C4. Development and evaluation of technical flows, financial economic and business level, advanced management methods.</p> <p>C5. Project management and enterprise of electrical, electronic and energy marketing and economic agreements.</p> <p>C6. Knowledge of key issues in the field of communication and management in engineering and from the interference of fields</p>
Transversal skills	<p>TC2. Identify the roles and responsibilities of each member of a pluri-disciplinary team and apply efficient work and relational techniques inside the team</p>

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

7.1 The general objective of the subject	<ul style="list-style-type: none"> • The discipline has as objective the reasoned use of concepts in informatics and computer technology in solving well-defined problems in engineering and management and in applications that require the use of hardware and software in industrial systems or computer systems.
7.2 Specific objectives	<ul style="list-style-type: none"> • Application of basic principles and methods for planning, programming and management of enterprises in conditions of qualified assistance

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Informatics in economics	Free exposure, with the presentation of the course with video projector, on the board or online	2h
2. General aspects regarding operating systems	Free exposure, with the presentation of the course with video projector, on the board or online	4h
3. Alternative operating systems	Free exposure, with the presentation of the course with video projector, on the board or online	2h

4. UNIX – LINUX files system	Free exposure, with the presentation of the course with video projector, on the board or online	2h
5. File and directory management in UNIX-LINUX	Free exposure, with the presentation of the course with video projector, on the board or online	4h
6. UNIX-LINUX text editors	Free exposure, with the presentation of the course with video projector, on the board or online	2h
7. UNIX shells	Free exposure, with the presentation of the course with video projector, on the board or online	2h
8. Elements of networking	Free exposure, with the presentation of the course with video projector, on the board or online	2h
9. Internet and WEB technologies	Free exposure, with the presentation of the course with video projector, on the board or online	4h
10. Elements of programming and calculation in the economic field	Free exposure, with the presentation of the course with video projector, on the board or online	4h
Bibliography 1 Dragoș Cristian Spoială, Viorica Spoială, <i>Utilizarea calculatoarelor</i> , Editura Universității din Oradea, 2010, ISBN 978-606-10-0221-4, 200 pag 1. Spoială Dragoș-Cristian , <i>Sisteme de operare. Curs pentru uzul studentilor</i> , http://dspoiala.webhost.uoradea.ro . 2. D. Acostăchioaie, <i>Administrarea și Configurarea Sistemelor Linux</i> , ediția a 3-a, Editura Polirom 2005 3. D. Acostăchioaie, Sabin Buraga, <i>Utilizare Linux. Noțiuni de bază și practică</i> , Editura Polirom, 2004 4. T. Ionescu, Daniela Saru, J. Floroiu, <i>Sisteme de operare. Principii și funcționare</i> , Editura Tehnică, București, 1997 5. Pălivan, H. Pălivan, <i>Linux pentru avansați</i> , Editura Tehnică, București, 2001 6. A. Tanenbaum, <i>Sisteme de operare moderne</i> , ediția 2-a, Ed. Biblos, București, 2004 7. UNIX – Tutorial - Internet		

8. *** "Operating Systems", Wikipedia, http://en.wikipedia.org/wiki/Operating_system		
10. *** http://fedoraproject.ro/		
8.2 Academic laboratory	Teaching methods	No. of hours/ Observations
1. Install Linux-Fedora. The first orders 2. System variables - Input / output operations - Network applications 3. Text editors - Processes - Files and directories 4. Creating users and groups. File and directory rights 5. Shell programming. Shell scripts 6. Microsoft Excel. Economic applications 7. Microsoft Access. Database 8. Closing the situation at the laboratory	Students receive laboratory reports at least one week in advance, study them, and are randomly tested throughout the laboratory. Students implement the work under the guidance of the teacher.	2h 2h 2h 2h 2h 2h 1h 1h
Bibliography		
1. Spoială Dragoș Cristian, Spoială Viorica, <i>Utilizarea calculatoarelor</i> , îndrumător de laborator, Tipografia Univ. din Oradea, 145 pag., 2010 2. Spoială Dragoș-Cristian, Spoială Viorica, <i>Sisteme de operare</i> . Îndrumător de laborator Lito Universitatea din Oradea, 2010		

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 can be found in the curriculum of Management and Communication in Engineering from other university centers that have accredited similar specializations (Technical University of Cluj-Napoca, University of Craiova, "Politehnica" University of Timisoara, Gh. Asachi University of Iasi, etc.) and knowledge of the types of electric drives and their operation and design is a stringent requirement of employers in the field (Comau, Faist Mekatronics, Celestica, GMAB, etc.).

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 Continuous Assessment	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 - consisting of 10 questions each with a score displayed	100 %
10.5 Minimum performance standard: Course: Elaboration of a project for the planning, programming and management of the production to systems of medium complexity			

Laboratory: - browsing the content of laboratory works
- participation in all laboratory works.

The timely solution, in individual activities and group activities, in conditions of qualified assistance, of the problems that require the application of principles and rules respecting the norms of professional deontology.

Completion date:

01.09.2023

Date of endorsement in the department:

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Date of endorsement in the Faculty Board:

29.09.2023

SUBJECT DESCRIPTION

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 Control Systems Engineering and Management
1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering / Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject	Microeconomy						
2.2 Holder of the subject	Assoc.prof. PhD eng.ec. Liliana Doina M gdoiu						
2.3 Holder of the academic seminar	Assoc.prof. PhD eng.ec. Liliana Doina M gdoiu						
2.4 Year of study	I	2.5 Semester	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	4	of which: 3.2 course	2	3.3 academic laboratory	2
3.4 Total of hours from the curriculum	56	Of which: 3.5 course	28	3.6 academic laboratory	28
Distribution of time					hours
Study using the manual, course support, bibliography and handwritten notes					30
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					10
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					20
Tutorials					0
Examinations					9
Other activities.					
3.7 Total of hours for individual study	69				
3.9 Total of hours per semester	125				
3.10 Number of credits	5				

4. Pre-requisites (where applicable)

4.1 related to the curriculum	(Conditions) Knowledge of the Basics of Economics and General Economics
4.2 related to skills	

5. Conditions (where applicable)

5.1. for the development of the course	- Attendance at least 50% of the courses - The course can be held face to face or online
5.2. for the development of the academic seminary/laboratory/project	- Mandatory presence at all seminars; - The can be carried out face to face or online - Students come with the observed seminar papers - A maximum of 4 works can be recovered during the semester (30%);

	<ul style="list-style-type: none"> - The frequency at seminar hours below 70% leads to the restoration of the discipline - The seminar can be held face to face or online
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6. Specific skills acquired	
Professional skills	<p>C1. Knowing the main types of economic processes and phenomena of communication, elements of microeconomic theory and practical aspects of financial and economic flows at business</p> <p>C2. Knowledge of electrical power sources, knowledge of business software, computer management, drafting and interpreting technical documentation.</p>
Transversal skills	<p>TC2. Identify the roles and responsibilities of each member of a pluri-disciplinary team and apply efficient work and relational techniques inside the team</p>

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

7.1 The general objective of the subject	<ul style="list-style-type: none"> ● Familiarization of students with the main types of processes and economic phenomena at the microeconomic level
7.2 Specific objectives	<ul style="list-style-type: none"> ● The course aims to present the theoretical elements of microeconomics ● The seminar acquaints the students with practical aspects regarding the economic-financial flows at business level, the management of the economic and financial phenomenon

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Consumer behavior	Free exposure, with the presentation of the course with video projector, on the board or online	2h
2. Consumer behavior	Free exposure, with the presentation of the course with video projector, on the board or online	2h
3. Market	Free exposure, with the presentation of the course with video projector, on the board or online	2h

4. Economic competition	Free exposure, with the presentation of the course with video projector, on the board or online	2h
5. The company	Free exposure, with the presentation of the course with video projector, on the board or online	2h
6. Producers behavior	Free exposure, with the presentation of the course with video projector, on the board or online	2h
7. Producers behavior	Free exposure, with the presentation of the course with video projector, on the board or online	2h
8. Production costs	Free exposure, with the presentation of the course with video projector, on the board or online	2h
9. Selling prices	Free exposure, with the presentation of the course with video projector, on the board or online	8h
10. Entrepreneurial profit	Free exposure, with the presentation of the course with video projector, on the board or online	4h

Bibliography

1. Rada, Ioan Constantin, **Economie**, Ed. Anotimp, 2002
2. Rada, Ioan Constantin; Rada, Ioana Carmen, **Economie. Caiet de lucru ri**, Ed. Anotimp & Adsumus, 2002
3. Rada, Ioan Constantin; Bodog, Simona; Rada, Ioana Carmen; Lăzurean, Elena Nicoleta, **Economie general , Marketing industrial (note de curs)**, Ed. Universității Oradea, 2006
4. Rada, Ioan Constantin; Bodog, Simona; Rada, Ioana Carmen; Lăzurean, Elena Nicoleta, **Economie general , Marketing industrial (aplicații pentru seminar)**, Ed. Universității Oradea, 2006
5. Rada, Ioan Constantin, **Economie general I**, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2009, CD-ROM
6. Rada, Ioan Constantin, **Economie general II**, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2009, CD-ROM
7. Rada, Ioan Constantin, **Microeconomie. Idei moderne. Vol. I**, Editura Asociației „Societatea Inginerilor

de Petrol și Gaze”, București, 2007		
8. Rada, Ioan Constantin, Microeconomie. Idei moderne. Vol. II , Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2008		
9. Rada, Ioan Constantin; Rica, Ivan; Măgdoiu, Liliana Doina, Finanțe și credit (note de curs) , Editura Universității din Oradea, 2011, CD-ROM		
10. Rada, Ioan Constantin; Rica, Ivan; Măgdoiu, Liliana Doina, Finanțe și credit (aplicații pentru seminar) , Editura Universității din Oradea, 2011, CD-ROM		
8.2 Academic seminar	Teaching methods	No. of hours/ Observations
1. Paper: Consumer concepts 2. Paper: About resources 3. Paper: The concept of competition 4. Paper: The role of the environment in obtaining production factors 5. Report: The information system of the enterprise 6. Paper: Substantiation of production cost decisions 7. Report: The production price and the profit of the entrepreneur	Students receive laboratory reports at least one week in advance, study them, and are randomly tested throughout the laboratory. Students implement the work under the guidance of the teacher.	4h 4h 4h 4h 4h 4h 4h
Bibliography It is the one indicated for the course		

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 can be found in the curriculum of Management and Communication in Engineering from other university centers that have accredited similar specializations (Technical University of Cluj-Napoca, University of Craiova, "Politehnica" University of Timisoara, Gh. Asachi University of Iasi, etc.) and knowledge of the types of electric drives and their operation and design is a stringent requirement of employers in the field (Comau, Faist Mekatronics, Celestica, GMAB, etc.).

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 are given two topics to solve	70 %
10.5 Academic seminar	- for grade 5, it is necessary to know the structure of the paper and one or two concepts	At each seminar, the students draw up a report, which can be collective, which they	30%

	in the paper - for grade 10, in-depth knowledge of the topic of the paper and its support during the seminar	support and which is submitted to the debates during the seminars. Each student also receives a grade for the seminar activity during the semester	
<p>10.5 Minimum performance standard: Course: Solving and explaining complex problems, associated with the discipline of microeconomics or general economics, specific to the field of engineering and management Academic seminar: - browsing the content of seminar works The timely solution, in individual activities and group activities, in conditions of qualified assistance, of the problems that require the application of principles and rules respecting the norms of professional deontology.</p>			

Completion date:

01.09.2023

Date of endorsement in the department:

18.09.2023

Date of endorsement in the Faculty Board:

29.09.2023

SUBJECT DESCRIPTION

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 Control Systems Engineering and Management
1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering/ Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject	Project management						
2.2 Holder of the subject	Lect. PhD eng. Coroiu Laura						
2.3 Holder of the academic laboratory	Lect. PhD eng. Coroiu Laura						
2.4 Year of study	I	2.5 Semester	2	2.6 Type of the evaluation	Ex	2.7 Subject regime	AKD

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

3.1 Number of hours per week	4	of which: 3.2 course	2	3.3 academic laboratory	2
3.4 Total of hours from the curriculum	56	Of which: 3.5 course	28	3.6 academic laboratory	28
Distribution of time					hours
Study using the manual, course support, bibliography and handwritten notes					30
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					10
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					20
Tutorials					
Examinations					9
Other activities.					
3.7 Total of hours for individual study	69				
3.9 Total of hours per semester	125				
3.10 Number of credits	5				

4. Pre-requisites (where applicable)

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

5. Conditions (where applicable)

5.1. for the development of the course	- Attendance at least 50% of the courses - The course can be held face to face or online
5.2. for the development of the academic seminary/laboratory/project	- The project can be carried out face to face or online - The frequency at project hours below 70% leads to the restoration of the discipline

6. Specific skills acquired	
Professional skills	<p>C4. Development and evaluation of technical flows, financial economic and business level, advanced management methods.</p> <p>C5. Project management and enterprise of electrical, electronic and energy marketing and economic agreements.</p> <p>C6. Knowledge of key issues in the field of communication and management in engineering and from the interference of fields</p>
Transversal skills	<p>CT2. Identify the roles and responsibilities of each member of a pluri-disciplinary team and apply efficient work and relational techniques inside the team.</p> <p>CT3. Identify the long-life training opportunities and the efficient use (for self development) of informational sources, as well as communication and assisted professional training resources (Internet websites, dedicated software applications, databases, on-line courses etc.) both in Romanian language and some other international spoken language.</p>

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

7.1 The general objective of the subject	<ul style="list-style-type: none"> The discipline has as objective the familiarization of the students from the master's specialization Management and Communication in Engineering, with the Project Management
7.2 Specific objectives	<ul style="list-style-type: none"> The course aims to present the theoretical elements of the Project Management. The project provides the necessary knowledge to the students about Project manager techniques and tools.

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Introduction. Construction of the project proposal	Free exposure, with the presentation of the course with video projector, on the board or online	4h
2. Organizing projects on project phases. The internal organizational structure of the projects.	Free exposure, with the presentation of the course with video projector, on the board or online	4h
3. Project management tasks Project marketing Risk management	Free exposure, with the presentation of the course with video projector, on the board or online	6h
4. Controlul și asigurarea calității Raportarea rezultatelor proiectelor	Free exposure, with the presentation of the course with video projector, on the board or online	4h

5. Project manager techniques and tools The SWOT analysis	Free exposure, with the presentation of the course with video projector, on the board or online	4h
6. Evaluation techniques Planning techniques Project monitoring	Free exposure, with the presentation of the course with video projector, on the board or online	4h
7. Redactarea raportului tehnic Raportarea Terminarea proiectelor	Free exposure, with the presentation of the course with video projector, on the board or online	2h
Bibliography 1.Laura Coroiu, <i>Managementul proiectelor</i> , curs în format electronic, 2010; 2.D. Isoc, <i>Managementul proiectelor de cercetare- Proiecte cu finanare publică națională și internațională. Capitalizarea și gestiunea proprietății intelectuale. Ghid practic.</i> Editura Risoprint Cluj Napoca 2007; 3. Mariana Mocanu, Carmen Schuster, <i>Managementul proiectelor Ed a II-a</i> , Colecția afaceri, Editura All Beck, București, 2004; 4.O. Nicolescu, E. Burduș,... <i>Ghidul managerului eficient, Vol 1</i> , Editura Tehnică București 1993; 5.J.L. Koorey, D.B. Medley, <i>Management Information Systems</i> , South-Western Publishing Co. Cincinnati, Ohio, 1986; 6.K.C.Laudon, J.Price Laudon, <i>Management Information Systems, A Contemporary Perspective</i> , Macmillan Publishing Company, 1988.		
8.2 Academic project	Teaching methods	No. of hours/ Observations
Project manager techniques and tools. Case studies	Students receive the project theme and design methodology and under the guidance of the teacher perform the project stages	28h
Bibliography 1. Laura Coroiu , <i>Managementul proiectelor</i> , curs în format electronic, 2010; 2. Lonnie Pacelli, <i>Consilierul managerului de proiect</i> , Meteor Press 2007, ISBN 978-973-728-215-6		

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 can be found in the curriculum of Management and Communication in Engineering from other university centers that have accredited similar specializations (Technical University of Cluj-Napoca, University of Craiova, "Politehnica" University of Timisoara, Gh. Asachi University of Iasi, etc.) and knowledge of Project management is a stringent requirement of employers in the field (Comau, Faist Mekatronics, Celestica, GMAB, etc.).

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
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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 3 subjects of theory and an application.	60 %
10.5 Project	Minimum required conditions for promotion (grade 6): a brief overview of the design stages For 10: going through all the design stages, with the completion of the calculations	Oral presentation Following the presentation of the project completed during the semester, each student receives a grade.	40%
<p>10.6 Minimum performance standard:</p> <p>Course: Solving and explaining problems of medium complexity, associated with the discipline of project management.</p> <p>Project: Elaboration of a business plan that aims at the management of the enterprise using knowledge of project management</p> <p>The timely solution, in individual activities and group activities, in conditions of qualified assistance, of the problems that require the application of principles and rules respecting the norms of professional deontology.</p> <p>Responsible assumption of specific tasks in multi-specialized teams and efficient communication at institutional level.</p> <p>Elaboration and argumentative support of the application of a personal professional development plan.</p>			

Completion date:

01.09.2023

Date of endorsement in the department:

18.09.2023

Date of endorsement in the Faculty Board:

29.09.2023

SUBJECT DESCRIPTION

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 Control Systems Engineering and Management
1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering / Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject		Innovation and technology					
2.2 Holder of the subject		Prof. PhD eng. Teodor Leuca					
2.3 Holder of the academic laboratory/project		Prof. PhD eng. Teodor Leuca					
2.4 Year of study	II	2.5 Semester	3	2.6 Type of the evaluation	Ex	2.7 Subject regime	SD

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

3.1 Number of hours per week	4	of which: 3.2 course	2	3.3 academic project	1
3.4 Total of hours from the curriculum	42	Of which: 3.5 course	28	3.6 academic project	14
Distribution of time					83h
Study using the manual, course support, bibliography and handwritten notes					30
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					14
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					30
Tutorials					0
Examinations					9
Other activities.					
3.7 Total of hours for individual study	83				
3.9 Total of hours per semester	125				
3.10 Number of credits	5				

4. Pre-requisites (where applicable)

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

5. Conditions (where applicable)

5.1. for the development of the course	<ul style="list-style-type: none"> - Attendance at least 50% of the courses - The course can be held face to face or online
5.2. for the development of the academic laboratory/project	<ul style="list-style-type: none"> - Mandatory presence at all project hours; - The project can be carried out face to face or online - Students come with the observed laboratory works - A maximum of 2 works can be recovered during the semester (30%); - The frequency at project hours below 70% leads to the restoration of the

	discipline
6. Specific skills acquired	
Professional skills	<p>C1. Knowing the main types of economic processes and phenomena of communication, elements of microeconomic theory and practical aspects of financial and economic flows at business</p> <p>C4. Elaboration and evaluation of technical, economic and financial flows at business level, advanced management methods</p>
Transversal skills	<p>TC2. Identify the roles and responsibilities of each member of a pluri-disciplinary team and apply efficient work and relational techniques inside the team.</p>

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

7.1 The general objective of the subject	<ul style="list-style-type: none"> ♣ Implementing theories, ideas on the theoretical and design bases of innovation and technology management. ♣ Training the necessary competencies for the objective assessment and retention by master students of the issue of innovation and technology management.
7.2 Specific objectives	

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Key aspects of innovation management	Free exposure, with the presentation of the course with video projector, on the board or online	4 h
2. Innovation - as a management process	Free exposure, with the presentation of the course with video projector, on the board or online	4 h
3. Elaboration of the necessary framework for the innovation strategy	Free exposure, with the presentation of the course with video projector, on the board or online	4 h
4. The position of the national and competitive environment	Free exposure, with the presentation of the course with video projector, on the board or online	4 h
5. Pathways: exploitation of technological trajectories	Free exposure, with the presentation of the course with video projector, on the board or online	4 h

6. Processes: integration for strategic learning	Free exposure, with the presentation of the course with video projector, on the board or online	4 h
7. The cognitive process based on market realities	Free exposure, with the presentation of the course with video projector, on the board or online	4 h
<p>Bibliography</p> <p>1.Abudi, Gina (2010): <i>Project Managers Need Leadership Skills</i>, URL: http://www.projectsman.co.uk/project-managers-need-leadership-skills.html, site accesat ultima data: 24.01.2012.</p> <p>2.Ciobotaru, Daniela / Milo , Teodor / Ciobotaru, Dan (2010): <i>Triunghiul de aur al realizarii unui proiect tehnic: tehnic versus calitate, costuri de realizare, termene de executie</i>, în: Buletinul AGIR, nr. 2-3, aprilie-septembrie, pp. 176-180.</p> <p>3.Holzbaur, Ulrich D. (2009): <i>Project Management in Research</i>, în: Lategan, Laetus O. K. / Holzbaur, Ulrich D. (eds.), <i>Managing applied research: theories, cases and perspectives</i>, Aalener Schriften zur Betriebswirtschaft, pp. 40-52.</p> <p>4.Pollack, Julien (2006): <i>The changing paradigms of project management</i>, în: International Journal of Project Management, doi: 10.1016/j.ijproman.2006.08.002.</p> <p>5.Thomas, Graeme / Fernández, Walter (2008): <i>Success in IT projects: A matter of definition?</i>, în: International Journal of Project Management, 26, pp. 733-742.</p> <p>*Anexa A, Echipamente inovative de încălzire prin inducție, Teze de doctorat coordonate de profesor dr. ing. Teodor LEUCA, Biblioteca Universității din Oradea</p> <p>**Anexa B, Echipamente inovative de încălzire în câmp de înaltă frecvență, Teze de doctorat coordonate de profesor dr. ing. Teodor LEUCA, Biblioteca Universității din Oradea.</p>		
8.2 Academic project	Teaching methods	No. of hours/ Observations
Theme 1: Innovative photovoltaic energy conversion systems Theme 2: Innovative wind energy conversion systems Theme 3: Innovative interior lighting systems Topic 4: Smart buildings - BMS	Master students receive the design theme and design methodology and under the guidance of the teacher perform the project stages	10h
Conclusions		2h
Project support		2h
<p>Bibliography</p> <ol style="list-style-type: none"> [Băloiu, Liviu, Mihail și Frăsineanu, Ioan – <i>Gestiunea inovației</i>, Ed. Economică, București, 2001 Christensen, Clayton M – <i>The innovators dilemma</i>, Harper Business Essentials, New York, 2000, Phillips, Fred Y. – <i>Market oriented Technology Management – Innovating for Profit in Entrepreneurial Times</i>, Springer-Verlag, Heidelberg, 2001 Tidd, Joe; Bessant, John și Pavitt, Keith – <i>Managing Innovation</i>, John Wiley & Sons Ltd, Chichester, West Sussex, 2001 Utterback, James M – <i>Mastering the dynamics of innovation</i>, Harvard Business School Press, Boston, 1996 Von Stamm, Bettina – <i>Managing Innovation, Design & Creativity</i>, John Wiley & Sons Ltd, Chichester, West Sussex, 2003 		

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 can be found in the curriculum of Management and Communication in Engineering from other university centers that have accredited these specializations

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 sustain an oral exam	60 %
10.5 Project	- for grade 6, going through the design stages, without deepening the calculations - for grade 10, completion of all design stages, with completion of calculations and power supply and control diagrams	Oral support Following the presentation of the project made during the semester, each master student receives a grade, separate from the exam.	40%
<p>10.6 Minimum performance standard:</p> <ul style="list-style-type: none"> - Critical evaluation of the strategic performance of the teams. - Manifesting autonomy in choosing a learning route and demonstrating understanding of learning processes. - Communicating project results, methods and key principles to an audience of specialists and non-specialists, using appropriate techniques. - Careful observation, reflection and decision-making in order to change social norms and interpersonal relationships. - Problem solving by integrating complex, sometimes incomplete, sources of information in new and unfamiliar contexts. - Demonstration of experience in operational interactions for change management in a complex context. - Manifestation of an active behavior towards a series of social, scientific and ethical aspects that appear in work or study. 			

Completion date:

01.09.2023

Date of endorsement in the department:

18.09.2023

Date of endorsement in the Faculty Board:

29.09.2023

SUBJECT DESCRIPTION

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 Control Systems Engineering and Management
1.4 Field of study	Engineering and management
1.5 Study cycle	Master (2nd cycle)
1.6 Study program/Qualification	Management and Communication in Engineering / Master of Science in Engineering

2. Data related to the subject

2.1 Name of the subject	Economy of the Enterprise						
2.2 Holder of the subject	Assoc.prof. PhD eng.ec. Liliana Doina M gdoiu						
2.3 Holder of the academic seminar	Assoc.prof. PhD eng.ec. Liliana Doina M gdoiu						
2.4 Year of study	I	2.5 Semester	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	4	of which: 3.2 course	2	3.3 academic laboratory	2
3.4 Total of hours from the curriculum	56	Of which: 3.5 course	28	3.6 academic laboratory	28
Distribution of time					hours
Study using the manual, course support, bibliography and handwritten notes					30
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					10
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					20
Tutorials					0
Examinations					9
Other activities.					
3.7 Total of hours for individual study	69				
3.9 Total of hours per semester	125				
3.10 Number of credits	5				

4. Pre-requisites (where applicable)

4.1 related to the curriculum	(Conditions) Knowledge of the Basics of Economics and General Economics
4.2 related to skills	

5. Conditions (where applicable)

5.1. for the development of the course	- Attendance at least 50% of the courses - The course can be held face to face or online
5.2. for the development of the academic seminary/laboratory/project	- Mandatory presence at all seminars; - The can be carried out face to face or online - Students come with the observed seminar papers - A maximum of 4 works can be recovered during the semester (30%);

	<ul style="list-style-type: none"> - The frequency at seminar hours below 70% leads to the restoration of the discipline - The seminar can be held face to face or online
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6. Specific skills acquired	
Professional skills	<p>C1. Knowing the main types of economic processes and phenomena of communication, elements of microeconomic theory and practical aspects of financial and economic flows at business</p> <p>C2. Knowledge of electrical power sources, knowledge of business software, computer management, drafting and interpreting technical documentation.</p>
Transversal skills	<p>TC2. Identify the roles and responsibilities of each member of a pluri-disciplinary team and apply efficient work and relational techniques inside the team</p>

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

7.1 The general objective of the subject	<ul style="list-style-type: none"> • Familiarization of students with the main types of processes and economic phenomena at the microeconomic level
7.2 Specific objectives	<ul style="list-style-type: none"> • The course aims to present the theoretical elements of microeconomics • The seminar acquaints the students with practical aspects regarding the economic-financial flows at business level, the management of the economic and financial phenomenon

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
1. Consumer behavior	Free exposure, with the presentation of the course with video projector, on the board or online	2h
2. Consumer behavior	Free exposure, with the presentation of the course with video projector, on the board or online	2h
3. Market	Free exposure, with the presentation of the course with video projector, on the board or online	2h

4. Economic competition	Free exposure, with the presentation of the course with video projector, on the board or online	2h
5. The company	Free exposure, with the presentation of the course with video projector, on the board or online	2h
6. Producers behavior	Free exposure, with the presentation of the course with video projector, on the board or online	2h
7. Producers behavior	Free exposure, with the presentation of the course with video projector, on the board or online	2h
8. Production costs	Free exposure, with the presentation of the course with video projector, on the board or online	2h
9. Selling prices	Free exposure, with the presentation of the course with video projector, on the board or online	8h
10. Entrepreneurial profit	Free exposure, with the presentation of the course with video projector, on the board or online	4h

Bibliography

1. Rada, Ioan Constantin, **Economie**, Ed. Anotimp, 2002
2. Rada, Ioan Constantin; Rada, Ioana Carmen, **Economie. Caiet de lucru ri**, Ed. Anotimp & Adsumus, 2002
3. Rada, Ioan Constantin; Bodog, Simona; Rada, Ioana Carmen; Lăzurean, Elena Nicoleta, **Economie general , Marketing industrial (note de curs)**, Ed. Universității Oradea, 2006
4. Rada, Ioan Constantin; Bodog, Simona; Rada, Ioana Carmen; Lăzurean, Elena Nicoleta, **Economie general , Marketing industrial (aplicații pentru seminar)**, Ed. Universității Oradea, 2006
5. Rada, Ioan Constantin, **Economie general I**, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2009, CD-ROM
6. Rada, Ioan Constantin, **Economie general II**, Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2009, CD-ROM
7. Rada, Ioan Constantin, **Microeconomie. Idei moderne. Vol. I**, Editura Asociației „Societatea Inginerilor

de Petrol și Gaze”, București, 2007		
8. Rada, Ioan Constantin, Microeconomie. Idei moderne. Vol. II , Editura Asociației „Societatea Inginerilor de Petrol și Gaze”, București, 2008		
9. Rada, Ioan Constantin; Rica, Ivan; Măgdoi, Liliana Doina, Finanțe și credit (note de curs) , Editura Universității din Oradea, 2011, CD-ROM		
10. Rada, Ioan Constantin; Rica, Ivan; Măgdoi, Liliana Doina, Finanțe și credit (aplicații pentru seminar) , Editura Universității din Oradea, 2011, CD-ROM		
8.2 Academic seminar	Teaching methods	No. of hours/ Observations
1. Paper: Consumer concepts 2. Paper: About resources 3. Paper: The concept of competition 4. Paper: The role of the environment in obtaining production factors 5. Report: The information system of the enterprise 6. Paper: Substantiation of production cost decisions 7. Report: The production price and the profit of the entrepreneur	Students receive laboratory reports at least one week in advance, study them, and are randomly tested throughout the laboratory. Students implement the work under the guidance of the teacher.	4h 4h 4h 4h 4h 4h 4h
Bibliography It is the one indicated for the course		

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 can be found in the curriculum of Management and Communication in Engineering from other university centers that have accredited similar specializations (Technical University of Cluj-Napoca, University of Craiova, "Politehnica" University of Timisoara, Gh. Asachi University of Iasi, etc.) and knowledge of the types of electric drives and their operation and design is a stringent requirement of employers in the field (Comau, Faist Mekatronics, Celestica, GMAB, etc.).

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 are given two topics to solve	70 %
10.5 Academic seminar	- for grade 5, it is necessary to know the structure of the paper and one or two concepts	At each seminar, the students draw up a report, which can be collective, which they	30%

	in the paper - for grade 10, in-depth knowledge of the topic of the paper and its support during the seminar	support and which is submitted to the debates during the seminars. Each student also receives a grade for the seminar activity during the semester	
<p>10.5 Minimum performance standard: Course: Solving and explaining complex problems, associated with the discipline of microeconomics or general economics, specific to the field of engineering and management Academic seminar: - browsing the content of seminar works The timely solution, in individual activities and group activities, in conditions of qualified assistance, of the problems that require the application of principles and rules respecting the norms of professional deontology.</p>			

Completion date:

01.09.2023

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Date of endorsement in the Faculty Board:

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SUBJECT DESCRIPTION

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 ELECTRICAL ENGINEERING
1.4 Field of study	ELECTRICAL ENGINEERING
1.5 Study cycle	Master (2 nd cycle)
1.6 Study program/Qualification	MANAGEMENT AND COMMUNICATION IN ENGINEERING / ENGINEER

2. Data related to the subject

2.1 Name of the subject	ELECTRIC POWER SOURCES						
2.2 Holder of the subject	Conf.dr.ing. BANDICI LIVIA						
2.3 Holder of the academic project	Conf.dr.ing. BANDICI LIVIA						
2.4 Year of study	I	2.5 Semester	1	2.6 Type of the evaluation	Ex	2.7 Subject regime	I

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

3.1 Number of hours per week	3	of which: 3.2 course	2	3.3 academic seminar/laboratory/project	1
3.4 Total of hours from the curriculum	42	Of which: 3.5 course	28	3.6 academic seminar/laboratory/project	14
Distribution of time					hours
Study using the manual, course support, bibliography and handwritten notes					40
Supplementary documentation using the library, on field-related electronic platforms and in field-related places					44
Preparing academic seminars/laboratories/ themes/ reports/ portfolios and essays					43
Tutorials					3
Examinations					3
Other activities.					-
3.7 Total of hours for individual study	133				
3.9 Total of hours per semester	175				
3.10 Number of credits	7				

4. Pre-requisites (where applicable)

4.1 related to the curriculum	Special issues of electrical engineering, new energy sources, electrical installations
4.2 related to skills	Knowledge of how energy sources work

5. Conditions (where applicable)

5.1. for the development of the course	- Video projector, computer. - The course can be held face to face or online platform https://e.uoradea.ro/ .
5.2. for the development of the academic project	- Elaboration of the project after choosing a theme - The project can be presented face to face or online on the platform https://e.uoradea.ro/ .

6. Specific skills acquired

Professional skills	C4. Development and evaluation of technical, economic, and financial flows at business level, advanced management methods
Transversal skills	CT1. The responsible application of the principles, norms, and values of professional ethics in the accomplishment of professional tasks and identifying the objectives to be achieved, the available resources, the work stages, the execution durations, the accomplishment terms, and the related risks.

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

7.1 The general objective of the subject	The course "Power Sources" aims to familiarize students with the study and usefulness of power sources. Master students have the opportunity to get acquainted with various modern facilities, learn practical skills in the design, construction, sizing, and operation of facilities, with the possibilities of execution, maintenance, operation, and repair.
7.2 Specific objectives	The project themes are designed to provide future master engineers with practical skills in designing, conducting, researching, operating, repairing, and maintaining power sources.

8. Contents*

8.1 Course	Teaching methods	No. of hours/ Observations
Chapter I. General notions regarding the evolution in time of the electric power sources.	Projector. Intercalated student contributions are requested on subject-specific topics. Some courses take place by teaching subjects and student debates.	4
Chapter II. Electric power systems. Supply and distribution of electrical energy.	Idem	2
Chapter III. Hydroelectric power.	Idem	4
Chapter IV. Wind energy.	Idem	6
Chapter V. Solar energy.	Idem	8
Chapter VI. Biomass	Idem	2
Chapter VII. Hydrogen energy.	Idem	2
Bibliography		
<ol style="list-style-type: none"> Livia Bandici, "Surse electroenergetice". Note de curs, suport CD, 2018. V. Alexandrescu, "Sisteme electroenergetice I". Editura Universității Tehnice Iași, 1997. Gh. Cârțină, "Optimizarea și dispecerizarea sistemelor electroenergetice". Editura Universității Tehnice Iași, 1989. Gh. Cârțină, Gh. Grigoraș, "Inteligența artificială. Optimizări în energetică". Editura Venus, Iași, 2001. I. Chiuță, "Energetică generală și conversia energiei. Sisteme de conversie directă". Editura Institutului Politehnic, București, 1986. M. Gavrilaș, "Inteligența artificială și aplicații în energetică". Ed. Gh. Asachi, Iași, 2002. Gh. Georgescu, M. Istrate, V. Varvara, ș.a. "Transportul și distribuția energiei electrice". Ed. Gh. Asachi, Iași, 2001 V. Nitu, Lucia Pantelimon, C. Ionescu, "Energetică generală și conversia energiei". Editura Didactică și Pedagogică, București, 1980. 		
8.4 Project		
Proposed topics:	Video projector, in case of online courses, the E-learning platform of the University of Oradea will be used	2
1. Sizing of a solar installation with flat collector without forced circulation for domestic hot water preparation		
2. Sizing of a wind installation necessary for servicing an		

isolated house.	(https://e.uoradea.ro), and in „video-audio conferencing” mode, the Microsoft Teams or Zoom communication platform will be used. Discussions on how to write the project.	
Chapter. I. General notions.	Brief approach to the main problems related to solar installations.	2
Chapter II. Materials used in the construction of the installation.	Explanations on how to choose the materials used for the construction of the installation.	2
Chapter III. Theoretical bases of equipment calculation.	Presentation of the notions related to the calculation of electrical parameters.	2
Chapter IV. Determination of equipment parameters.	Presentation of the calculation method of the equivalent parameters.	2
4.1. Methods for calculating the electrical parameters of the equipment.		
4.2. Determination of thermal parameters.	Presentation of the calculation method of the thermal parameters.	2
Presentation of the project	Presenting and handing in the elaborated project.	2
Bibliography <ol style="list-style-type: none"> Livia Bandici, „<i>Surse electroenergetice</i>”. Note de curs, suport CD, 2019. Livia Bandici, „<i>Surse electroenergetice. Indrumător de proiectare</i>”, suport CD, 2018. V. Alexandrescu, „<i>Sisteme electroenergetice I</i>”. Editura Universității Tehnice Iași, 1997. Livia Bandici, D. Hoble, „<i>Utilizări ale energiei electrice</i>. Editura Universității din Oradea, 2006. Gh. Cârțină, „<i>Optimizarea și dispecerizarea sistemelor electroenergetice</i>”. Editura Universității Tehnice Iași, 1989. Gh. Cârțină, Gh. Grigoraș, „<i>Inteligența artificială. Optimizări în energetică</i>”. Editura Venus, Iași, 2001. I. Chiuță, „<i>Energetică generală și conversia energiei. Sisteme de conversie directă</i>”. Editura Institutului Politehnic, București, 1986. M. Gavrițaș, „<i>Inteligența artificială și aplicații în energetică</i>”. Ed. Gh. Asachi, Iași, 2002. Gh. Georgescu, M. Istrate, V. Varvara, ș.a. „<i>Transportul și distribuția energiei electrice</i>”. Ed. Gh. Asachi, Iași, 2001 V. Nitu, Lucia Pantelimon, C. Ionescu, „<i>Energetică generală și conversia energiei</i>”. Editura Didactică și Pedagogică, București, 1980. I. Șora, V. Conta, D. Popovici, „<i>Utilizări ale energiei electrice</i>”. Editura Facla, 1983. M. Ungureanu, M. Chindriș, I. Lungu, „<i>Utilizări ale energiei electrice</i>”. Editura Didactică și Pedagogică București, 1999. 		

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 adapted and satisfies the requirements imposed by the labor market, being agreed by the social partners, professional associations, and employers in the field related to the master's degree program. Knowledge of the basics is a stringent requirement of employers in the field such as: Faist Mekatronics, Comau, S.C. Stimin Industries S.A., S.C. Electrica.

10. Evaluation

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

	standard		
10.2. Project	Minimum required conditions for promotion (grade 5): in accordance with the minimum performance standard		
<p>10.3. Minimum performance standard: Carrying out a work/ project, as a leader in a multidisciplinary team and responsibly distributing specific tasks to subordinates. Grade components: exam (Ex), independent activity (Ai) Final grade calculation formula: $N = 0.60 \text{ Ex} + 0.30 \text{ Pr} + 0.1 \text{ Ai}$; - Condition for obtaining credits: $N \geq 5$.</p>			

Completion date:

01.09.2023

Date of endorsement in the department:

18.09.2023

Date of endorsement in the Faculty Board:

29.09.2023