STUDY PROGRAMME ACCREDITATION MATERIAL:

ENERGY AND PROCESS ENGINEERING

MASTER ACADEMIC STUDIES

Novi Sad

2012.

Prevod sa srpskog jezika:

Jelisaveta Šafranj

Ivana Mirović

Marina Katić

Vesna Bodganović

Dragana Gak

Ličen Branislava

Content

Content

Programme name	Energy and Process Engineering
Independent higher education institution where the programme is being executed	University of Novi Sad
Higher education institution where the programme is being executed	Faculty of Technical Sciences
Educational-scientific/educational-art field	Technical-Technological Science
Scientific, proffesional or art field	Mechanical Engineering
Type of studies	Master Academic Studies
Study scope, expressed in ECTS	70-71
Academic degree, abbreviation	Master in Mechanical Engineering, M.Mech.Eng.
Study length	1
Programme implementation starting year	2008
Future course implementation starting year (for new programme)	
Number of students attending this programme	2
Planned number of students to be enrolled in this programme	32
Programme approval date (state the approval issuer)	14.11.2012 - Science Education Council 29.11.2012 - University of Novi Sad Senate
Programme language	Serbian, English
Programme accreditation year	2008
Web address containing programme information	http://www.ftn.uns.ac.rs

Standard 00. Introduction

Energy and Process Engineering in educational sense should be considered as a study programme created as a response to practical need. This programme should enable students to additionally acquire knowledge based on understanding fundamental physical principles in Energy and Process Engineering and other fields, to master additional professional knowledge for realization of modern energy and process systems, to acquire ability to integrate continually applicable knowledge and to get introduced to research work.

Standard 01. Programme Structure

The name of this study programme of graduate academic studies – master is Energy and Process Engineering. Academic name acquired is Master in Mechanical Engineering. The outcome of the study process is knowledge which enables students to use professional literature, to solve professional problems and to continue studies if students choose to do so.
The prerequisites for enrolling the study programme are completed undergraduate studies with at least 240 ECTS and passed enrolment exam.
The study programme of graduate academic studies Energy and Process Engineering last one year.
Lectures are realized through lectures and practical classes. During education process emphasis is placed on independent and research student work, as well as on their personal involvement in the process. During lectures, modern didactic tools are used for presenting subject content and students are informed about research trends in the field. During practical classes, which follow the lectures, actual exercises and problems are solved and appropriate examples are presented. Also additional explanations of the subject content are offered in practical classes. Practical classes can be auditory, laboratory and computer. Partially practical classes can be realized in factories and other institutions.
The number of students in a group depends on the character of the practice classes. Students are obliged to write seminar papers and homework, projects, semestral and graphic papers. Every student activity is monitored and awarded according to the regulations adopted by the Faculty. The number of awarded credits is determined by a unique methodology and reflects student involvement.

Standard 02. Programme Objectives

The purpose of the study programme – Energy and Process Engineering is set in accordance with the needs of the society.
The study program of the Master studies in Energy and Process Engineering is set so that it enables students to acquire competences socially justifiable and purposeful. The Faculty of Technical Sciences has clearly defined educational assignments and objectives for highly competent experts in the field of technical engineering. The aim of the study programme - Energy and Process Engineering is completely in accordance with the Faculty of Technical Sciences objectives.
Realization of such a study programme creates experts in the field of Construction Mechanics and Mechanizations competent in European and global standards and in accordance with social needs.

Standard 03. Programme Goals

The objective of the graduate academic studies in Energy and Process Engineering is acquiring competences and academic skills in the field of Energy and Process Engineering. In addition, this programme will provide graduates with practical skills, as well as form and develop competences necessary for critical thinking and team work and acquiring specific practical skills necessary for the profession.

The objective of the study programme of graduate academic studies in Energy and Process Engineering is to educate and form highly qualified experts able to perform tasks in production technologies and designing contemporary production process.

In addition, this programme will provide graduates with practical skills, as well as form and develop competences necessary for the technical sciences. The objective of this study programme is also education of experts in team working as well as development of abilities of presentation of results to professional public.

Standard 04. Graduates` Competencies

Having completed the graduate academic studies in Energy and Process Engineering, a student acquires general and subject-specific abilities in the function of qualitative performance of professional, scientific and artistic activities. Having completed this study programme, a student acquires the following general abilities:
- Ability to analyse, generate and anticipate consequences,
- Ability of critical thinking,
- Ability to solve problems by applying scientific methods and procedures

Master student acquires thorough knowledge and understanding of all disciplines of the selected study group, as well as skills for solving actual problems with utilization of scientific methods and procedures. Students at the Energy and Process Engineering are capable to write and present in an appropriate way the results of their work. Utilization of information and communication technologies is insisted upon.
The students at this level have competencies for following and application of novelties in the line of profession, as well as for cooperation with local social and international environment.
The students are enabled to design, organize and manage production. During education process student is enabled to independently conduct experiments, for statistical data processing as well as to formulate and reach appropriate results.
Upon graduation, student acquires knowledge to economically use natural resources of the Republic of Serbia in accordance of principles of sustainable development.
Special attention is paid to skill development for team work and professional ethics.

Standard 05. Curriculum

The curriculum of the study programme of Energy and Process Engineering is formulated so that it meets all set objectives. The structure of the study programme provides the choice of selective courses with at least 30% ECTS.
Master students expand knowledge of production engineering in specific characteristics of problems which each study group deals with. Through selective courses satisfy their interests that they developed during the studies. All subjects are one semester long and are awarded appropriate number of ECTS, and one credit equals approximately 30 hours of student activities.
The curriculum is defined description of subjects which contains title, subject type, academic year and semester, ECTS, professors name, subject objective with expected outcomes, knowledge and competences, prerequisites for attending the subject, subject content, recommended literature, teaching methods and knowledge evaluation.
The study programme is in accordance with European standards in terms of enrolment, study duration, preconditions for transferring to the following academic year, acquiring diploma and studying way.
The integral part of the curriculum of production engineering is professional practice and practical work in duration of 45 hours, realized in appropriate scientific and research institutions, in organizations for innovation activities. Student finishes the studies with elaboration of master thesis consisting of theory and methodological application of preparation necessary for understanding the field of master thesis.
Prior to defending the thesis, student passes theoretical and methodological fundamentals before a commission which is appointed for thesis defence. The final master grade is calculated on the bases of results of passed theoretical and methodological preparation and evaluation of elaboration and defence of the thesis. The thesis is defended before the commission which consists of at least 3 teachers among which at least one needs to be from another department of faculty.

Table 5.2 Course specification

Course:		Construction in energy and process engineering
Course id:	M3517	
Number of ECTS:	6	
Teachers:		Spasojević Đ. Momčilo, Đaković D. Damir, Sokolović S. Dunja
Course status:		Mandatory

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	3	0	0	0

Precondition courses: None

1. Educational goal:

Basic terms and methods of construction in energy and process science will be learned.

2. Educational outcomes (acquired knowledge):

Graduating students are prepared to work in a design office, on installations on energy and process equipment and in production of energy and process equipment.

3. Course content/structure:

Students are familiarized with the elements of construction and design. Stages of facilities development. Basic laws, regulative and standards in design and construction in energy and process science. Types of projects and the scope individual projects. Tender documentation and the basic contract elements corresponding to development of technical documentation. Specific project elements: project problem, technical description, general and technical conditions, specific elements of construction calculations, graphical representation, study of safety at work. Specific elements of construction calculations: Class of container and apparatus selection, material selection, construction revaluation coefficients, mechanical sizing, sizing the strengthening, sizing the safety equipment, sizing the welding and construction inspection. Montage of energy and process equipment.

4. Teaching methods:

Verbal method – visual method – practical method.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Coloquium exam	No	0.00
Graphic paper	Yes	20.00	Theoretical part of the exam	Yes	60.00
Lecture attendance	Yes	5.00	Oral part of the exam	Yes	10.00

Literature

Ord.	Author	Title	Publisher	Year
1,	M. Bogner	Konstrukcije i proračuni procesnih aparata	Mašinski fakultet beograd	2004
2,	M. Bogner	Projektovanje termotehničkih i procesnih sistema	SMEITS	2002
3,	S. Sedmak	Priručnik za konstruisanje procesne opreme	Tehnološko metaluški fakultet, Beograd	1994
4,	J. M. Coulson, J. F. Richardson	Chemical engineering	Pergamon press, Oxford, New York	1983
5,	M. Bogner, V. Vojnović, N. Ivanović	Standardi i propisi za stabilne i pokretne posude pod pritiskom	Mašinski fakultet, Beograd	1993

Table 5.2 Course specification

Course:		Applied industrial automatization
Course id:	M3417	
Number of ECTS:	6	
Teachers:		Ristić V. Aleksandar, Petrovački Lj. Nebojša, Petrovački P. Dušan
Course status:		Mandatory

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	1	1	0	1

Precondition courses: None

1. Educational goal:

Introduction to the basic concepts and methods of design in the thermal process technique.

2. Educational outcomes (acquired knowledge):

Acquisition of basic and applied knowledge in the field of Automation of industrial processes.

3. Course content/structure:

Basic concepts and principles of SAU. Types of response, ON/OFF and PID regulation, parameter settings. Characteristics, purpose and classification of sensors. Characteristics, purpose and classification of actuators (Asynchronous engineers – frequency regulation, one-way plants – control=. Basic hardware structure of PLC (purpose, classification, characteristics). Analogue and digital inputs and outputs (analogue: A/D and D/A conversion). Types of programming languages for PLC, basic organizational concepts and tasks. Types of data and types of variables in PLC programming. Types of instruction in the programming language ST – basic characteristics, functions and functional blocks. Examples of the programming code. Basic tasks of SCADA software. Processing of the obtained data in the SCADA system. Trends. Display of the monitoring system and interaction with the display. Alarms and events in the SCADA system. Supervision (indirect) control. Access rights and fields of responsibility in the SCADA system. Control centers in the SCADA system.

4. Teaching methods:

Lectures: Computing, laboratory and computer-laboratory practice, Consultations. Knowledge testing: Practical part grade – driven and independent solving of 10 obligatory problems; Theoretical part grade – in the oral form. Final grade is the arithmetic mean of theoretical and practical part of the examination.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Complex exercises	Yes	40.00	Oral part of the exam	Yes	50.00
Exercise attendance	Yes	5.00			
Lecture attendance	Yes	5.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Milić Stojić	Kontinualni sistemi automatskog upravljanja	Naučna knjiga	1988
2,	Richard Dorf, Robert Bishop	Modern Control Systems 11ed.	Pearson education	2008
3,	Jonathan Love	Process automation handbook: A guide to theory and practice	Springer	2007
4,	Roger Haines, Douglas Hittle	Control systems for heating, ventilating, and air conditioning 6ed.	Springer	2006
5,	Dale Patrick, Stephen Fardo	Industrial Process Control Systems 2ed.	CRC Press	2009

Table 5.2 Course specification

Course:		Energy Transformations
Course id:	I915	
Number of ECTS:	6	
Teacher:		Đaković D. Damir
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	3	0	0	2

Precondition courses: None

1. Educational goal:

Introduction to basic thermodynamic terms and solving methods of energy conversion problems and application to concrete thermal energy processes and thermal power plants.

2. Educational outcomes (acquired knowledge):

Gaining of elementary knowledge about the methods of energy transformations analysis and about types and processes of thermal power plants.

3. Course content/structure:

Importance of energy and energy activities. Energy indicators of Serbia, some countries in the region and beyond. Classification of energy forms. Basic terms and units of measure for energy and power. Primary forms of energy. Transformation of primary forms of energy into more suitable energy forms. Transformation of chemical energy into internal energy. Transformation of internal thermal energy into mechanical energy. Transformation of potential energy of water into mechanical energy. Transformation of mechanical into electrical energy. Transformation of nuclear into internal energy.

4. Teaching methods:

Lectures, mentoring and consultation. Auditory exercises. Calculation exercises. Knowledge is tested on the exam.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Written part of the exam - tasks and theory	Yes	70.00
Lecture attendance	Yes	5.00			
Test	Yes	10.00			
Test	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	D. Gvozdenac, D. Đaković, M. Kljajić	Energetske transformacije, skripte	FTN, Novi Sad	2012
2,	H. Požar	Osnove energetike (Prvi i Drugi svezak)	Školska knjiga Zagreb, Zagreb	1976
3,	M. Marić	Nauka o toploti (termodinamika, prenos toplote, sagorevanje)	Univerzitet u Novom Sadu, Fakultet tehničkih nauka	2002
4,	Godfrey B, Everett B, Ramage J (editors)	Energy systems & sustainability	Oxford	2004
5,	Vuorinen A.	Planning of optimal power systems	Ekoenergo Oy, Finland	2009

Table 5.2 Course specification

Course:		Processes and Constructions of Multistage Turbine
Course id:	M3505	
Number of ECTS:	7	
Teacher:		Grković R. Vojin
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	2	0	0	0

Precondition courses

1. Educational goal:

Enabling students for constructing, designing, exploitation, engineering and consulting in the field of multiple stage turbo machines at the level of fundamental calculation of basic development and research ploblemes.

2. Educational outcomes (acquired knowledge):

Fundamental knowledge on multiple stage of heat turbo machines, detailed knowledge on energy transformation processes in multiple stage thermal turbo machines, criteria for calculation and all types of calculation of thermal turbo machines and working state at the level of basic enginering. Fundamental knowledge necessary for development and research in the field of thermal turbomachines.

3. Course content/structure:

Technical development of thermal turbo machines, current state of technical and current problems. Multy stage turbines (Energy transformation, Parsons number, Losses and Final stage). Multy stage compressors (Energy transformators, axial power levelling). Calculation methods for multy stage machines (one dimentional, Duct-Flow, Through-Flow, Wy-March.). Turbine behaviour during non calculated stationary states –consumption cone. Double shaft gas turbine behaviour during non calculated stationary states. Turbo compressors behaviour during non calculated stationary states (Operation maps, Operation stability, Pumping, Measurements for pumping limit improvement, Rotating ablation currents).Turbine regulation (Manners and effects of electrical power steam turbine regulation). Turbo compressor regulation Steam turbine constructions. Nuclear power plants turbine (for the following types: PWP, BWP, GCP and Bride R.E.). Turbines for conjured electrical and thermal energy production – SPETE. Cooking of parts of gas turbine (Blades: stationary and movable with the impact on current, Heat chambers and Disks).

4. Teaching methods:

Verbal, visual and practical method.

Knowledge evaluation (maximum 100 points)					
Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Computer exercise attendance	Yes	10.00	Homework	Yes	60.00
Exercise attendance	Yes	10.00			
Lecture attendance	Yes	10.00			
Term paper	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Grković Vojin	Toplotne turbomašine	FTN izdavaštvo, Novi Sad	2004
2,	Grković Vojin	Tehnološke osnove regulisanja parnih turbina za spregnutu proizvodnju električne i toplotne energije	Futura publikacije, Novi Sad	1995
3,	Gostelow J. P.	Cascade Aerodynamics	Pergamonh Press, Oxford, New York, Toronto	1984
4,	Bitterlich W., Ausmeier S. und Lohmann U.	Gasturbinen und Gasturbinenanlagen – Darstellung und Berechnung	B. G. Teubner, Stuttgart	2002
5,	Fister	Fluidenergiemaschinen I u. II	Springer Verlag, Berlin	1984
6,	Šegljajev A. V	Parovie Turbini	Energija, Moskva	1976
7,	Traupel Walter	Termische Turbomaschinen I und II	Springer-Verlag, Berlin/ Heilderberg/New York	1982
8,	Horlock J. H.	Axial Flow Turbines: Fluid Mechanics and Thermodynamics	Butterworths, London	1973
9,	Horlock J. H.	Axial Flow Compressors Fluid Mechanics and Thermodynamics	Butterworths, London	1982
10,	Wilson D. G. and Theodosios K.	The Design of High-Efficiency Turbomachinery and Gas Turbines		1998

Table 5.2 Course specification

Course:		Drying Technique
Course id:	M3506	
Number of ECTS:	6	
Teachers:		Đaković D. Damir, Đurić N. Slavko, Spasojević Đ. Momčilo
Course status:		Elective

Number of active teaching classes (weekly)

Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	2	0	0	0

Precondition courses: None

1. Educational goal:

Introduction to fundamental concepts and methods of solving problems in the field of drying and its application to specific products and materials.

2. Educational outcomes (acquired knowledge):

Knowledge gain about drying processes analysis methods, as well as about opportunities for application of drying processes in various brances of industry.

3. Course content/structure:

Determination and interpretation of drying process (determination and classification of moisture, different types of drying, necessary foundation for drying). Drying statics equations. Drying kinetics. Methods of drying time calculations.

4. Teaching methods:

Lectures, calculation and auditory practical classes, consultations, homeworks, seminar. The final grade is formed on the basis of achievements in practical classes, seminar paper, homeworks and exam. Alternatively the exam can be taken partially in two partial examinations.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Written part of the exam - tasks and theory	Yes	70.00
Homework	Yes	5.00			
Homework	Yes	5.00			
Lecture attendance	Yes	5.00			
Term paper	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Mita Nedeljkov, Momir Stakić	Osnovi tehnike sušenja	FTN, Novi Sad	1994
2,	Mita Nedeljkov	Zbirka zadataka iz Osnova tehnike sušenja	FTN, Novi Sad	1988
3,	Topić Radivoje	Osnove projektovanja, proračuna i konstruisanja sušara	Naučna knjiga, Beograd	1989

Table 5.2 Course specification

Course:		Mass Transfer
Course id:	M3508	
Number of ECTS:	6	
Teachers:		Dragutinović D. Gordan, Đaković D. Damir, Đurić N. Slavko
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	2	0	0	1

Precondition courses: None

1. Educational goal:

Introduction to the basic concepts and methods of problems solving in the field of mass transfer, as well as applications to specific processes and plants.

2. Educational outcomes (acquired knowledge):

Knowledge gain about analysis methods of mass transfer, as well as about possibilities of mass transfer application within different industrial fields.

3. Course content/structure:

Basic concepts of diffusive mass transfer (basic terms, driving forces of diffusive mass transfer, equations of change and macroscopic mass (molar) balances of the components, Fick`s constitutive relation for 2-k systems, diffusivity of binary mixtures, equations of Fick`s type for n-k mixtures, diffusivity in n-k systems considering constitutive relations of Fick`s type, Maxwel type equations, diffusivity in n-k systems considering constitutive relations of Maxwel type). Molecular diffusion (one-dimensional stagnant diffusion – binary systems, equimolar counterdiffusion, diffusion through inert environment, stationary molecular diffusion at the conditions of changeable isoconcentrated surface, one-dimensional stationary diffusion – multicomponent systems, non-stationary molecular diffusion in one direction – binary systems).

4. Teaching methods:

Lectures, auditory, calculation exercises, tests, consultation. The course grade is formed based upon success at lectures, tests and examination. Alternatively, the exam can be taken through two colloquiums. If the student passes both colloquiums, (s)he does not take the exam.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Written part of the exam - tasks and theory	Yes	70.00
Lecture attendance	Yes	5.00			
Test	Yes	10.00			
Test	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Milan Dimić	Difuzioni prenos mase	FTN	1994

Table 5.2 Course specification

Course:		Diffusion apparatus
Course id:	M3511	
Number of ECTS:	6	
Teachers:		Spasojević Đ. Momčilo, Đurić N. Slavko
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	2	0	0	0

Precondition courses: None

1. Educational goal:

Students will get acquainted with diffusion processes in process industry as well as with its use in the engineering praxis. Basic types of diffusion apparatus will be covered. Calculation procedures for the most commonly used types of apparatus will be done.

2. Educational outcomes (acquired knowledge):

Students will be prepared to continue their work in the design biro and process industry.

3. Course content/structure:

-Definition and the use of diffusion operations
-Transport phenomena
-Classification and calculation methodology in diffusion apparatus
-Isothermal diffusion operations (absorption, adsorption, extraction)
-Non isothermal diffusion operations (distillation, rectification, steaming)
-Development trends in diffusion apparatus

4. Teaching methods:

Verbal method – visual method – practical method.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Coloquium exam	No	0.00
Graphic paper	No	0.00	Theoretical part of the exam	Yes	70.00
Lecture attendance	Yes	5.00	Oral part of the exam	Yes	20.00

Literature

Ord.	Author	Title	Publisher	Year
1,	Svetomir Cvijović	Fenomeni prenosa	Tehnološki fakultet, Beograd	2001
2,	Dimitrije Voronjec	Tehnološke operacije	Mašinski fakultet, Beograd	1998
3,	J. M. Coulson, J. F. Richardson	Chemical engineeering	Pergamon press, Oxford, New York	1983

Table 5.2 Course specification

Course:		Bioenergy Fuels and Alternative Processes
Course id:	M3555	
Number of ECTS:	6	
Teacher:		Vićević D. Marija
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	1	1	0	0

Precondition courses: None

1. Educational goal:

Introduction to biofuels fundamentals and technologies. Introduction to alternative methods in odrer to improve processes. Problem solving methods in the field of biofuels.

2. Educational outcomes (acquired knowledge):

Students acquire knowledge in the field of biofuels and alternative technologies in the process of their production, as well as fundamental knowledge necessary for managing and designing those processes.

3. Course content/structure:

Biomass production. Raw materials and row material selection for the biomass production. Bio mass production on hydrocarbon foundations. Algae production (processing and application). Secondar biomass. Biomass processing. Biogass production. Raw materials for bio gass production. Biodiezel produciton. Thermal and technical characteristics of fuels produced from biomass. Fundamentals in bio chemical reactors. Bioprocesses kinetics fundamentals. Application of bioenergnets and Serbian potentials in their production. Alternative processes (green processes; inovation processes, reaction and equipment; sustainable production; identification process methods).

4. Teaching methods:

Lectures, computer and audiotory practical classes, consultations, study and research work.

Knowledge evaluation (maximum 100 points)					
Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Computer exercise attendance	Yes	5.00	Theoretical part of the exam	Yes	70.00
Lecture attendance	Yes	5.00			
Term paper	Yes	10.00			
Test	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Jay Bailey, James Bailey, David F. Ollis	Biochemical Engineering Fundamentals, 2nd ed.	Graw-Hill, New York	1987
2,	Radaković, M.	Biodizel, Biogas, Biomasa	AGM knjiga	2009
3,	Reay, D., Ramshaw, C., Harvey.	A. process intensification: Engineering for Efficiency, Sustainability and Flexibility: Australasian Edition	Butterworth-Heinemann Title	2008

Table 5.2 Course specification

Course:	
Course id: EE501	
Number of ECTS: 6	
Teacher:	Švenda S. Goran
Course status:	Elective

Number of active teaching classes (weekly)

Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	3	0	0	0

Precondition courses: None

1. Educational goal:

Numerical analysis: systems of linear and non-linear equations, differential equations, methods of optimization and artificial intelligence.

2. Educational outcomes (acquired knowledge):

The application of numerical analysis in modelling and problem solving in transmission and distribution networks.

3. Course content/structure:

Computation errors. Function value computation. Approximative solution of algebraic and transcedent equations. The matrix algebra. Finding of own values and own vectors of the matrix. Solving linear equation systems. Approximative solution of a non-linear equation system. Interpolation of the function and the approximation of the derivatives and differentials of a function. Solving simple differential equations. Numerical optimization. Methods of artificial intelligence. Monte Carlo method. Probability and statistics, random variable.

4. Teaching methods:

Lectures-auditory.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Written part of the exam - tasks and theory	Yes	30.00
Lecture attendance	Yes	5.00	Oral part of the exam	Yes	40.00
Term paper	Yes	20.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	B.P.Demidovich, I.A.Maron	Computation Mathematics	Mir Publishers, Moscow	1973
2,	V.Levi, D.Bekut	Primena računarskih metoda u elektroenergetici	Stylos, Novi Sad	1997
3,	Vojislav Kecman	Learning and Soft Computing, Support vector machines, Neural Networks, and Fuzzy Logic	The MIT Press, Cambridge, MA	2001
4,	M.A.El-Sharkawi	Application of Artificial Neural Networks to Power Systems	IEEE Press, NY, USA	1996
5,	M.E.El-Hawary	Electric Power Applications of Fuzzy Systems	IEEE Press, NY, USA	1998

Table 5.2 Course specification

Course:		Combustion
Course id:	M3512	
Number of ECTS:	6	
Teacher:		Vićević D. Marija
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	2	0	0	0

Precondition courses: None

1. Educational goal:

Enabling students for: constructing, designing, exploitation, engineering and consalting in the field of energy conversion and non conventional fuels.

2. Educational outcomes (acquired knowledge):

Acquiring fundamental knowledge on problems and methodology of solving problems during construction, designing, managing plants (stationary and non stationary in terms of load shift), engineering and consullting of thermal and energy plants.

3. Course content/structure:

1. Introduction. Flame. Fundamental definition.2. Fuel and combustion. Combustion phenomenology. Fuels characteristics. 3. Combustion processes thermo dynamics. Fundamentals in transport and chemical kinetics. Chemical reaction mechanisms. 4. Inflammation processes.
5. Laminal flame with previous mixing. Laminal flame without previous mixing. Combustion stability. Burners with previous mixing. 6. Combustion during turbulent flowing. Diffusion flame during free outflow. Diffusion flame during forced outflow. Diffusion burners. 7. Liquide fuels combustion. Burners for liquid fuels. 8. Solid fuels combustion. Specific characteristics. Solid fuels combustion technologies – combustion in layers and space. Special forms of combustion. Waste combustion. 9. Flames and burning place. 10. Economy of burning place systems. Definitions, energy balance, losses, efficiency. 11. Combustion and environment.

4. Teaching methods:

Lectures, computer and auditory practical classes, consultations, seminar paper. The final grade is formed on the basis of achievements in computer practical classes, seminar paper and exam. Alternatively the exam can be taken partialy in two partial examination.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Coloquium exam	No	10.00
Lecture attendance	Yes	5.00	Theoretical part of the exam	Yes	40.00
Term paper	Yes	10.00	Oral part of the exam	Yes	30.00
Test	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Pešenjanski I.	Tehnika sagorevanja - u pripremi	Fakultet tehničkih nauka, Novi Sad	2012
2,	Warnatz J., Maas U., Dibble R.W.	Combustion	Springer	2000
3,	Günther, R.	Verbrennung und Feuerungen	Springer	1974
4,	Doležal R.	Großkessel – Feuerungen	Springer, Berlin	1961
5,	Radovanović, M.	Goriva	Mašinski fakultet, Beograd	1994
6,	Joksimović Tjapkin, S.	Procesi sagorevanja	Tehnološko-metalurški fakultet, Beograd	1987
7,	Hzmaljan, D.M., Kagan, JA.A.	Teorija gorenija i topočnije ustrojstva	Energija, Moskva	1976
8,	Spalding, D.B.	Combustion and Mass Transfer	Pergamon press, Oxford	1979
9,	Brunklaus J.H.	Industrieofen-und Brennerbau	Vulkan-Verlag, Essen	1975
10,	R. S. Tjuljpanov	Diffuzionnie turbulentnie plamena	Izdateljstvo leningradskogo univerziteta, Leningrad	1981
11,	I. M. Glušćenko	Termičeskij analiz tverdih topliv	Metallurgija, Moskva	1968
12,	G. I. Ksandopulo	Himija plameni	Himija, Moskva	1980
13,	J. M. Beer	Industrial flames	Edward Arnold, London	1972
14,	H. G. Franck	Kohleveredlung Chemie und Technologie	Springer Verlag, Berlin	1979
15,	F. Brandt	Brennstoffe und Verbrennungsrechnung		1981
16,	D. M. Hzmaljan, Ja. A. Kagan	Teorija gorenija i topočnie ustrojstva	Energija, Moskva	1976

Literature

Ord.	Author	Title	Publisher	Year
17,	Pomerancev V.V., Sagalov S.L., Reznik V.A., Kusnarenko V.V	Samovosgoranijw i vzrjivi	Energija, Leningrad	1978
18,	Hofman G.	Industriofen	VEB, Leipzig	1969

Table 5.2 Course specification

Course:		Pipe Networks Modelling			
Course id:	M3553				
Number of ECTS:	6				
Teacher:		Bukurov Ž. Maša			
Course status:		Elective			
Number of active teaching classes (weekly)					
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:	
3	1	1	0	0	
Precondition courses		None			

1. Educational goal:

Acquiring knowledge necessary for designing, analysis and management of complex systems for liquids and gases distribution.

2. Educational outcomes (acquired knowledge):

Pipe networks designing. Analysis of permanent, quasi permanent and transitional operation states. Liquid and gas distribution system operation.

3. Course content/structure:

Fundamental equations. Quasi permanent flow in pipe networks. Nodes method. Ring method. Hybride methods. Specific devices for control and regulation of pipe networks (reservoars, pump stations, regulation devices, etc.) Continual simulation of distribution networks operation. Mathematical models application in pipe networks management. Calculation of transitional states in pipe networks. Mathematical model of oscillation model in pipe networks. Protection methods in pipe networks.

4. Teaching methods:

Lectures – computer practical classes – individual work – consultations.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Computer exercise attendance	Yes	5.00	Oral part of the exam	Yes	30.00
Lecture attendance	Yes	5.00			
Term paper	Yes	20.00			
Term paper	Yes	20.00			
Term paper	Yes	20.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Walski, M. T. et al.	Advanced Water Distribution Modeling And Management	Haestad Press	2003
2,	Vuković, V., Tašin, S.	Uvod u hidropneumatsku tehniku	FTN	2006
3,	Chaudhry, H. M.	Applied hydraulic transients	Van Nostrand Reinhold Co. Inc., New York	1986
4,	Radojković, M., Obradović, D., Maksimović, Č.	Računari u komunalnoj tehnici	Građevinska knjiga, Beograd	1989
5,	Ivetić, M.	Računska hidraulika. Tečenje u cevima	Građevinski fakultet Beograd	1996

Table 5.2 Course specification

Course:		Computational Fluid Dynamics
Course id:	M3513	
Number of ECTS:	6	
Teacher:		Bukurov Ž. Maša
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	1	1	0	0

Precondition courses: None

1. Educational goal:

Introduction to computational fluid dynamics. Acquiring the knowledge needed to solve problems of fluid dynamics using the selected numerical methods.

2. Educational outcomes (acquired knowledge):

Upon successful completion of the course, students should acquire the following knowledge and skills:
• setting up and understanding of mathematical models in the field of stationary and non-stationary flow of incompressible and compressible fluid (the governing equations, boundary conditions);
• discretization of mathematical models by implementation of specific numerical methods, particularly finite difference and finite volume;
• the formation of simple calculation grids, the application of boundary conditions;
• solution of the problem using the selected algorithms.

3. Course content/structure:

Conservation laws and boundary conditions. Introduction to numerical methods. Basics of finite differences method, approximations to the first and second terminals by method of finite differences. Boundary conditions. Grids of finite differences, types, methods of generation. Systems of algebraic equations. Methods (algorithms) solve systems of algebraic equations. Calculation scheme. Errors of calculation scheme. Selected examples of problem solving plane inviscid fluid flow by method of finite differences. Bases of the finite volumes, approximation of surface and volume integrals. Boundary conditions. Interpolation methods. Selected examples of problem solving fluid dynamics by finite volume method. Introduction to advanced computational fluid dynamics techniques: unsteady problems with complex geometry, introduction to turbulence models.

4. Teaching methods:

Lectures, computation, numerical and computer exercises, consultations.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Coloquium exam	No	0.00
Lecture attendance	Yes	5.00	Theoretical part of the exam	Yes	20.00
Term paper	Yes	50.00	Oral part of the exam	Yes	20.00

Literature

Ord.	Author	Title	Publisher	Year
1,	Petrović, Z., Stupar, S.	Computational fluid dynamics, part one.	Mašinski fakultet Beograd	1996
2,	Ferziger, J. H., Perić, M.	Computational methods for fluid dynamics,.	Springer-Verlag	1996
3,	Versteeg, H.K., Malalaskera, W	An introduction to computational fluid dynamics/ The finite volume method	Longman	1995
4,	Fletcher, C.A.J	Computational techniques for fluid dynamics/ Fundamentals and general techniques	Springer-Verlag	1990
5,	Srinvas, K., Fletcher, C.A.J.	Solutions manual for computational techniques	Springer-Verlag	1990

Table 5.2 Course specification

Course:		Energy Management
Course id:	M3518	
Number of ECTS:	6	
Teacher:		Petrović R. Jovan
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	2	0	0	0

Precondition courses: None

1. Educational goal:

Students will be thought to: individually study principles of energy management, importance of energy management in energy efficiency, ecological, economical and developing the best energy supply of final energy, understanding the interconnections of all energy consumers in production processes and buildings, energy flows, energy transformation systems and satisfying the final energy needs. This is especially highlighted from the aspect of long term planning, sustainable development of final energy users and influence of energy flow on development and progress: ecological, economic and social conditions

2. Educational outcomes (acquired knowledge):

Developing skills in methods of understanding: relations of energy flows and functional situation in production processes and buildings, energy impact on production and usage costs, their control and possibly of their lowering.

3. Course content/structure:

Subject is structured so it can secure the study of the energy management principles in buildings, industry and other companies, technological entities, individual devices and apparatus, energy infrastructure systems, with the goal of improving the current state by making them more energy efficient and lowering their energy costs, improving their conditions in production processes and securing the work and living comfort in buildings.

4. Teaching methods:

Verbal method – visual method – practical method

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Oral part of the exam	Yes	70.00
Lecture attendance	Yes	5.00			
Test	Yes	10.00			
Test	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Zoran K. Morvay, Dušan D. Gvozdenac	Applied Industrial Energy and Environmental Management	Wiley	2008
2,	Eastop	Energy Efficiency for Engineers and Technologists	Croft, Longman Scientic& Technical	200x
3,	Wayne C. Turner	Energy Management Handbook	The Fairmont Press, Inc.	2005

Table 5.2 Course specification

Course:		Professional Practice
Course id:	M35SP	
Number of ECTS:	3	
Teachers:		
Course status:	Mandatory	

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
0	0	0	0	3

Precondition courses: None

1. Educational goal:

One of the integral segments of the curriculum for the study programme Energy and Process Engineering is professional practice carries out in adequate scientific and research institutions, relevant city and provincial institutions dealing with activities relevant to acquire adequate practical experience in regional planning and regional development. The objective of professional practice is to acquire direct and practical knowledge on the functioning and organization of institutions and establishments dealing with jobs within the profession for which the student is being educated and the possibility of applying the previously acquired knowledge in practice.

2. Educational outcomes (acquired knowledge):

- Educating students to apply previously acquired theoretical and professional knowledge for solving concrete practical problems of regional planning and development within the selected institution or establishment.
- Getting students acquainted with the activities of the selected institution or establishment, their business manners, management and employees` roles in adequate fields and their organization structures.
- Acquired professional knowledge students will apply in further education and further practice (professional work).

3. Course content/structure:

The content of professional practice is created for each candidate separately, in agreement with the management of the institution or establishment in which the practice is performed, and in accordance with demands of the profession for which the student is being educated.

4. Teaching methods:

Practical work, tutorials and writing a professional practice diary in which students describe activities and jobs they performed during professional practice.

Knowledge evaluation (maximum 100 points)					
Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Project	Yes	50.00	Oral part of the exam	Yes	50.00

Literature				
Ord.	Author	Title	Publisher	Year

Table 5.2 Course specification

Course:		Study-Research Work on the Master Thesis Theoretical Framework			
Course id:	SIM01				
Number of ECTS:	15				
Teachers:					
Course status:		Mandatory			
Number of active teaching classes (weekly)					
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:	
0	0	0	10	0	
Precondition courses		None			
1. Educational goal:					
2. Educational outcomes (acquired knowledge):					
3. Course content/structure:					
4. Teaching methods:					
Knowledge evaluation (maximum 100 points)					
Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Literature					
Ord.	Author	Title	Publisher	Year	

Table 5.2 Course specification

Course:		Master Thesis			
Course id:	M3MR				
Number of ECTS:	8				
Teachers:					
Course status:	Mandatory				
Number of active teaching classes (weekly)					
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:	
0	0	0	0	8	
Precondition courses	None				

1. Educational goal:

Master thesis objectives refer to very detailed and overall research in certain scientific discipline. Simultaneously, one of the objectives is to employ contemporary methodology in research and data analyses, as well as to adequately present results in the form of scientific writing. In addition, Master thesis objective is to educate students for challenges of contemporary regional development of European space.

2. Educational outcomes (acquired knowledge):

An outcome of Master thesis is presented in obtaining an original scientific paper whose results should provide certain contribution in later more detailed and serious research in the set scientific discipline, that is, regional policies and development.
It is also to enable graduate Master student for the role of an analyst and evaluator of regional development strategies and policies in Europe, as well as adequate preparation for the work in educational and scientific institutions.

3. Course content/structure:

Master thesis presents a student`s research paper in which they are introduced to research methodology in the field of regional and inter-regional cooperation and development. The student has the obligation, on performing field experimental research, to write a final paper in the form containing the following chapters: Introduction, Theoretical part, Experimental part, Results and discussion, Conclusions and Literature.
Topics and contents of final-Master papers that would be elaborated and defended within the study programme Energy and Process Engineering, could include more scientific fields and disciplines:

4. Teaching methods:

The method for elaborating Master thesis should include the preparation phase (title definition, content, methodology determination, primary sources), followed by research and field work (field research, data acquisition and database formation, etc. and the like) and the final phase – classroom work (obtained data analysis and definition, writing Master thesis text body and final tutorials with the supervisor). It is compulsory to defend the Master thesis in front of the officially appointed committee.

Knowledge evaluation (maximum 100 points)					
Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points

Table 5.2 Course specification

Course:		Unconventional systems for heating and cooling
Course id:	M3410	
Number of ECTS:	7	
Teacher:		Bjelaković M. Radivoje
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
2	2	0	0	0

Precondition courses: None

1. Educational goal:

Introduction to nonconventional heating and cooling systems and saving measures in consumption of energy sources. Development of engineering approach in designing and system operations.

2. Educational outcomes (acquired knowledge):

Acquiring knowledge for carrying out elaborate, studies and projects,as well as cration of non conventional systems of heating and cooling. Knowedge application in further education and practical work.

3. Course content/structure:

Nonconventional heating and cooling systems, general terminology, comparison to convetional systems. Fundamental parts of systems. Relevant factors for application of non conventional heating and cooling systems, climate conditions, urban planning, degree of economical development of the country. Regenerational thermal sourses, earth, water, air. Solar energy, other renewable energy sources, Solar energy, application principles, devices for solar energy utilization. Systems for solar energy application. Heating systems with thermal pump. Temperature state systems. System and regulation management. Foundation preparation for system designing. Technological and economical analysis of application of non conventional heating and cooling systems.

4. Teaching methods:

Lectures, practical classes, consultations and instalation and plant visits. Theoretical part is presented in lectures with practical examples. Practical classes cover computer examples in designing and realized solutions. Additonal clarifications are offered in consultations.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Written part of the exam - tasks and theory	Yes	70.00
Homework	Yes	10.00			
Lecture attendance	Yes	5.00			
Project defence	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	S.Vujić	Rashladni uredjaji	Mašinski fakultet,Beograd	1983
2,	Recknagel/Sprengel	Grejanje i klimatizacija	Građevinska knjiga,Beograd	2004

Table 5.2 Course specification

Course:		Dinamika i modeliranje termoenergetskih postrojenja
Course id:	M3503	
Number of ECTS:	7	
Teachers:		Đaković D. Damir, Grković R. Vojin, Gvozdenac D. Dušan
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	2	0	0	1

Precondition courses: None

1. Educational goal:

Enabling students for constructing, designing, exploitation, engineering and consulting in the field of management and thermal plant regulation.

2. Educational outcomes (acquired knowledge):

Acquiring fundamental knowledge on problems and methodologies in solving problems in plant management (stationary and nonstationary in terms of load shift) thermal and power engineering plant.

3. Course content/structure:

1. Introduction; Fundamentals in process management. Tasks in thermal plant management dynamics.2. Mathematic modelling of processes and buildings. Model types. 3. Processes during flow of fluids in TE plant elements. Non elastic fluid flow – preasure regulation, concentration. 4. Liquid level dynamics. Homogenous fluid. Non homogenous (two phase) fluids. 5. Thermal processe dynamics. Models with focused parameters. Models with arranged parameters. Simple heat exchangers – radial, convex recuperative and regenerative. 6. Modeling of heating surfaces of boilers. Evaporation system. Steam overheater. Water heater. Dynamics of complex heating packages during load shift in building. 7. Transport process dynamics with storing. 8. Dynamics of working machines. General model. Condensation steam turbine with and without reduction. Steam turbine. Pumps and ventilators. 9. Measurement and execution regulators dynamics.
10. Modelling of content dynamics in thermal devices. Systems with homogenous and non homogenous liquids. 11. Temperature regulation systems dynamics. Systems for impact on overheating steam temperature – mixing, recuperation refrigerators. Systems regulation dynamics. 12. Preasure dynamics. Regulation system with operation media flow impact. Regulation system with heating impact.
13. Dynamics of Steam boiler combustion system regulation. Quality criteria (efficiency). Fundamental sets and models.
14. Plant dynamics during block load. Regulation tasks. Fundamental sets.

4. Teaching methods:

Lectures, consultations, mentor work. Auditory practical classes. Industrial plants visits. Knowledge is tested in the exam. Alternatively the exam can be taken prartialy in three partial examinations. In case that the student passes all three partial examination, it is considered as final examiantion.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	10.00	Oral part of the exam	Yes	60.00
Lecture attendance	Yes	5.00			
Term paper	Yes	25.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Pešenjanski I.	Dinamika i modeliranje termoenergetskih postrojenja - u pripremi	Fakultet tehničkih nauka, Novi Sad	2007
2,	Debeljković D.	Dinamika objekata i procesa	Mašinski fakultet, Beograd	1989
3,	Debeljković D., Mulić V.	Savremena teorija višestruko prenosnih kontinualnih linearnih sistema	Čigoja-Štampa, Beograd	2004
4,	Profos P.	Die Regelung von Dampfanlagen	Springer, Berlin	1962
5,	Doležal R, Varcop L.	Process Dynamics	Elsevier, London	1970
6,	Pešenjanski I.	diplomski rad: Sinteza automatskog sistema regulacije kotla “Brestanica”	Mašinski fakultet, Novi Sad	1972
7,	Serov, E. P., Koroljkov, B. P.	Dinamika parogeneratorov		1981
8,	Žgulev, G. V.	Pusk i naladka energoblokov	Energija, Moskva	1978
9,	Doležal, R.	Vorgaenge beim Anfahren eines Dampferzeugers	Vulkan Verlag, Essen	1977

Table 5.2 Course specification

Course:		Hidropneumatic systems
Course id:	M3516	
Number of ECTS:	7	
Teacher:		Uzelac N. Dušan
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
2	1	1	0	0

Precondition courses: None

1. Educational goal:

Introduction to hydraulic and pneumatic systems for controlling, regulating and execution of mechanical work. Purpose of the subject study is students understanding of theoretical basics in potential energy transfer on the semi long distances for the purposes of mechanical work, to master the steps in creating pneumatic and hydraulic schemes and to get the practical knowledge in the field of design and implementation of these systems.

2. Educational outcomes (acquired knowledge):

After the successful completion of the study course, the student should master the necessary knowledge and skills for in the design of numerous hydraulic and pneumatic systems.

3. Course content/structure:

-Introduction: Definition of hydro-pneumatic systems, regulation and control systems.
-Basics in control and regulation technics: basic topics, breaking down of the control chain a regulation circuit.
-Establishing hydro-pneumatic systems: problem specification, transmission decision making, defining of the process in general and in all separate steps, making of the functional scheme.
-Basic schemes: distributor schemes, speed regulation schemes, valve schemes, time control schemes…
-Control in relation to distance schemes.
-Control in relation to time schemes.
-Self-sustaining control systems.
-Guided/logic control systems.
-Hydro-pneumatic servo systems with control by means of muffling: mathematical process description, linear model, stability and control quality, impact of a dry friction and nonlinearity flow characteristics, correlation methods, dynamical stiffness.
-Electro hydro-pneumatic servo systems with regulation by muffling : basic types, static and dynamics with electrostatic converter, static and dynamics with hydro amplifier, mathematical models, structural schematics, corrections of muffling characteristics, corrections of the outside static characteristic, autooscillations.
-Hydro systems with volumetric regulation: principle and structural scheme of the operational part hydro system with volumetric regulation, stability, mathematical model, and frequent characteristic, electrohydraulic servo system with volumetric regulation.
-Autonomous regulation systems: basic regulator functions, direct active overflow valve systems, indirect active overflow valve systems, flow regulation systems, automatically regulated pump system.

4. Teaching methods:

Verbal method – visual method – practical method.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Coloquium exam	No	0.00
Graphic paper	Yes	50.00	Theoretical part of the exam	Yes	20.00
Lecture attendance	Yes	5.00	Oral part of the exam	Yes	20.00

Literature

Ord.	Author	Title	Publisher	Year
1,	Bašta T.	Mašinska hidraulika	Naučna knjiga Beograd	1972
2,	Avramović D.	Projektovanje hidrauličnih uređaja	OMO, Beograd	1982
3,	Hasebrink J., Kobler R.	Osnovi pneumatskog upravljanja	FESTO Didactic	1985

Table 5.2 Course specification

Course:	Energy efficient separation process
Course id: M3599	
Number of ECTS: 7	
Teacher:	Sokolović S. Dunja
Course status:	Elective

Number of active teaching classes (weekly)

Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
2	2	0	0	0

Precondition courses: None

1. Educational goal:

The goal of this course is the introduction of the basic principles of membrane operation processes for the purpose of energy savings in the industry and the development of new “green” technologies.

2. Educational outcomes (acquired knowledge):

Training for the right selection and proper application of membrane process in the industry.

3. Course content/structure:

Classification of membrane operation by: the driving force, the organization of the flow of fluids, and other criteria. Analysis of the basic demands of membrane separation processes such as fractionation, concentration, etc.. Acquiring the principle of operation of certain membrane processes. Application of membranes in the industry for the purpose of energy saving and the development of new “green” technologies. Special emphasis on the use of membranes in the industry of our region.

4. Teaching methods:

Lectures, computer tutorials, laboratory and computational exercises, auditory and industry practice and consultations. Interactive teaching. Seminar assignments, short presentations and projects are forms of pre-examination obligations that are done individually or in groups of two and /or more students, depending on the complexity of the task.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Theoretical part of the exam	Yes	30.00
Homework	Yes	50.00			
Lecture attendance	Yes	5.00			
Presentation	Yes	10.00			

Literature

Ord.	Author	Title	Publisher	Year
1,	Baker R. W.	Membrane Technology and Applications	Wiley and Sons	2004
2,	Scott, Keith	Handbook of industrial membranes	Elsevier	1995
3,	Noble R. D. Stern S. A.	Membrane Separations Technology: Principles and Applications	Elsevier Science B.V.	1995

Table 5.2 Course specification

Course:		Engineering application programmes
Course id:	M3514	
Number of ECTS:	7	
Teacher:		Vićević D. Marija
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	0	2	0	1

Precondition courses: None

1. Educational goal:

Learning to solve specific problems in the field of stationary and non-stationary flows of compressible and incompressible fluids by using application programmes for flow computation.

2. Educational outcomes (acquired knowledge):

By completion of the course, students are trained to successfully use engineering user programmes to solve problems in the field of fluid dynamics, combustion, heat and mass transfer, which includes selection and establishment of an adequate mathematical model for specific problems, defining of the boundary conditions, selection and setup of model parameters, formation of adequate geometry, problem solving, analysis of simulation results, error analysis and the graphical presentation of results.

3. Course content/structure:

Introduction. Assessment of common software packages for calculation of problems in the field of fluid dynamics, combustion, heat and mass transfer. A brief overview of user programs for creating geometric models. Determination of mathematical models for specific engineering problems. Parameter setting and the implementation of boundary conditions. Creation of the network grid. Setting of the network parameters. The analysis of simulation results. Error analysis. The graphical representation of results. Solving of practical engineering problems. Comparison of simulation results with published experimental results.

4. Teaching methods:

Lectures, practical computer classes, consultations.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Exercise attendance	Yes	5.00	Coloquium exam	No	0.00
Lecture attendance	Yes	5.00	Theoretical part of the exam	Yes	20.00
Term paper	Yes	50.00	Oral part of the exam	Yes	20.00

Literature

Ord.	Author	Title	Publisher	Year
1,	Patric Marchand, O. Thomas Holland	Graphics and GUIs with MATLAB	Chapman & Hall/CRC	2003
2,	Jeffery Cooper	A Matlab Companion for Multivariable Calculus	Harcourt/Academic Press	2001
3,	John Tannehill, Dale Anderson, Richard Pletcher	Computational Fluid Mechanics and Heat Transfer	Taylor and Francis	1997
4,	Roland Lewis, Perumal Nithiarasu, Kankanhally Seetharamu	Fundamentals of the Finite Element Method for Heat and Fluid Flow	John Wiley and Sons, Ltd.	2004

Table 5.2 Course specification

Course:		Energy Systems
Course id:	M3515	
Number of ECTS:	7	
Teachers:		Grković R. Vojin, Petrović R. Jovan, Đaković D. Damir
Course status:		Elective

Number of active teaching classes (weekly)				
Lectures:	Practical classes:	Other teaching types:	Study research work:	Other classes:
3	2	0	0	0

Precondition courses: None

1. Educational goal:

Modern technical solutions are making complex unity in which energy part is almost always is an integral part. The most important energy plants are independent unities connected with the consumers by distributive and transmission systems. According to that fact, at least elementary knowledge of energetics is needed for those who are involved at any kind of job of management and use of energy.

2. Educational outcomes (acquired knowledge):

Mastery of basic knowledge about energetics in view of its rational application, which leads to efficiency use of concrete form of energy in technical processes, institutions and in private life.

3. Course content/structure:

Concept of energy management in industry. Connections of energy use and production. Energy indicators. Introduction of energy management system. Energy management and environmental protection as a driver of integral management. Industrial energy systems. Steam energy system. Electrical energy system. System of compressed air. Cooling systems

4. Teaching methods:

Lectures. Consultation. Auditory exercises.

Knowledge evaluation (maximum 100 points)

Pre-examination obligations	Mandatory	Points	Final exam	Mandatory	Points
Term paper	Yes	50.00	Oral part of the exam	Yes	50.00

Literature

Ord.	Author	Title	Publisher	Year
1,	Požar, H.	Osnovi energetike	Školska knjiga, Zagreb	1976
2,	Požar, H.	Osnovi energetike, drugi svezak	Školska knjiga, Zagreb	1976
3,	Devins, D.W.	ENERGY: ITS PHYSICAL IMPACT ON THE ENVIRONMENT	Robert E. Krieger Publishing Company, Malabar, Florida	1982
4,	Vuorinen, A.	Planning of Optimal Power Systems	Ekoenergo Oy, Finland	2008

Standard 06. Programme Quality, Contemporaneity and International Compliance

The study programme is coordinated with contemporary trends and situation in profession, science and art in adequate educational scientific or educational artistic field and it is compatible with similar programmes in international higher education institutions.
The study programme of Energy and Process Engineering is created as a comprehensive programme and provides students latest scientific knowledge in the field.
The programme of Energy and Process Engineering is comparable and coordinated with the following faculties:
Fakultet strojarstva i brodogradnje, Zagreb
Fakultet za strojnistvo, Ljubljana
Technische universitaet, Berlin
Technische universitaet, Graz

Standard 07. Student Enrollment

A higher education institution, in accordance with social demands and its resources, enrols students to adequate study programme based on their success in the previous education and entrance examination testing their knowledge, aptitudes and skills. Selection of students and their enrolment is based on success in previous education and success in the enrolment exam and in accordance with Faculty Regulation for student enrolment to study programmes.
Students from other study programme can transfer to this study programme as well as persons who completed studies. The evaluation commission (consisting of Heads of Departments included in study programme realization) evaluates all passed exams and on the bases of recognized exams decides whether the candidate`s previous success can completely or partially be recognized. The Commission can require appropriate additional differential exam or not to recognize any of the previously passed exam.

Standard 08. Student Evaluation and Progress

The evaluation of students is performed by continual monitoring of students` accomplishments and the points obtained in fulfilling prerequisites and taking examinations.

The students master the study programme by taking examinations and thus obtaining a certain number of ECTS credits, in accordance with the study programme of graduate academic studies in Energy and Process Engineering.

Each course at the study programme has a set number of ECTS credits which students obtain on successfully passing the examination. Students` success in mastering a certain course is constantly monitored during classes and is presented in points. Maximum number of points obtained in a course is 100. Students obtain points from a course through their work during classes, fulfilment of their prerequisites and taking the examination. Each course at the study programme has a clear and publicly known mode of obtaining points.

A students final achievement at a course is presented using grades from 5 (fail) to 10 (excellent). A student`s grade is based on the overall number of points obtained on fulfilling prerequisites and taking the examination, and in accordance with the quality of acquired knowledge and skills.

For a student to be allowed to take an exam, he/she needs to be awarded at least 15 ECTS credits in subject`s prerequisites. Additional terms for taking an exams are defined for each subject individually.

Student`s advancement during the studying is determined by Regulations for studying at graduate academic studies.

Standard 09. Teaching Staff

For the realization of the study programme, there is the faculty staff with necessary scientific, artistic and professional qualifications.
Total number of lecturers and associates employed at the study programme is adequate to accomplish the total number of classes in the study programme so that the professor performs on average 180 active classes annually (lectures, consultations, practical classes, practical work, etc), that is 6 classes weekly. All lecturers are full time employed at the Faculty.
Number of associates corresponds the needs of the study programme. Total number of associates in study programme is enough to cover total number of classes so that associates realize 300 classes on average of active classes annually, that is 10 classes weekly.
Scientific and professional qualifications of lecturers an assistants is in relation to educational and scientific field. Each professor has at least five references in the professional field in which he/she performs the lectures.
Group size for classes is up to 32, practical classes groups is up to 16, and laboratory practical classes groups up to 8 students.
None of the professors has more than 12 classes weekly. All data on lecturers and assistants (CV, references) are publicly available.

Science, arts and professional qualifications

Name and last name:	Bjelaković M. Radivoje
Academic title:	Full Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	25.09.1975
Scientific or art field:	Thermal Energetics and Thermotechnics

Academic carieer	Year	Institution	Field
Academic title election:	2004	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics
PhD thesis	1988	Faculty of Mechanical Engineering - Beograd	Thermal Energetics and Thermotechnics
Magister thesis	1982	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics
Bachelor's thesis	1972	Faculty of Mechanical Engineering - Beograd	Thermal Energetics and Thermotechnics

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	M3305	Heating, Ventilation and Air-Conditioning	(M30) Energy and Process Engineering, Undergraduate Academic Studies
2.	Z412A	Process apparatus for protecting the environment	(Z20) Environmental Engineering, Undergraduate Academic Studies
3.	Z412	Procesni aparati za zaštitu okoline(uneti naziv na engleskom)	(Z20) Environmental Engineering, Undergraduate Academic Studies
4.	M3048	Heating, Ventilation and Air-Conditioning	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
5.	GS002	Energy Efficiency of Heating and Air Conditioning Systems	(G10) Energy Efficiency in Buildings, Specialised Academic Studies
6.	GS003	Renewable Energy in Civil Engineering	(G10) Energy Efficiency in Buildings, Specialised Academic Studies
7.	I070	Energy efficiency	(M50) Energy Management, Master Academic Studies
8.	I939	Merenje, nadzor i upravljanje	(M50) Energy Management, Master Academic Studies
9.	M3410	Unconventional systems for heating and cooling	(M30) Energy and Process Engineering, Master Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Supplement to the optimisation of district heating network for changeable hydraulic regimes,The Second word Congress on heating,ventilating,refrigerating and air conditioning-CLIMA 2000,Heating commponents and systems,PP 161-165,Sarajevo,1989.
2.	Prilog odredjivanju optimalnih hidrauličkih parametara mreže daljinskog grejanja za promenljive protoke vode metodom dinamičkog programiranja,KGH,1/1194,s.25-28
3.	Prilog odredjivanju optimalne raspodele raspoloživih napora mreže daljinskog grejanja sa više toplotnih izvora,KGH,1/1998,s.53-56.
4.	Odredjivanje optimalnih gubitaka pritisaka prstenaste mreže daljinskog grejanja,KGH,1/2000,s.75-80
5.	Optimizacija mreže daljinskog grejanja,Fakultet tehničkih nauka,Novi Sad,2002.
6.	Eksploatacija vrelovodnih mreža daljinskog grejanja sa više toplotnih izvora,Fakultet tehničkih nauka,Novi Sad,1981.
7.	Odredjivanje optimalnih hidrauličkih parametara mreže daljinskog grejanja za promenljive režime,Mašinski fakultet, Beograd,1988.

Summary data for teacher's scientific or art and professional activity:

Quotation total :	0			
Total of SCI(SSCI) list papers :	0			
Current projects :	Domestic :	0	International :	0

Science, arts and professional qualifications

Name and last name:	Bukurov Ž. Maša
Academic title:	Assistant Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.11.1993
Scientific or art field:	Applied Fluid Mechanics - Hydro Pneumatic Technics

Academic carieer	Year	Institution	Field
Academic title election:	2010	Faculty of Technical Sciences - Novi Sad	Applied Fluid Mechanics - Hydro Pneumatic Technics
PhD thesis	2004	Faculty of Technical Sciences - Novi Sad	Mechanical Engineering
Magister thesis	1998	University of Novi Sad - Novi Sad	Environment Protection Engineering
Bachelor's thesis	1993	Faculty of Technical Sciences - Novi Sad	Mechanical Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	M205	Fundamentals of Fluid Mechanics	(Z01) Safety at Work, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies (Z20) Environmental Engineering, Undergraduate Academic Studies
2.	M205L	Fundamentals in Fluid Mechanics	(M20) Mechanization and Construction Engineering, Undergraduate Academic Studies (M30) Energy and Process Engineering, Undergraduate Academic Studies (M40) Technical Mechanics and Technical Design, Undergraduate Academic Studies (P00) Production Engineering, Undergraduate Academic Studies
3.	M212	Fluid Mechanics 1	(M30) Energy and Process Engineering, Undergraduate Academic Studies (M40) Technical Mechanics and Technical Design, Undergraduate Academic Studies
4.	M3301	Pumping and Compression Stations	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
5.	M3306	Devices for Mechanical Purification	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
6.	M3403	Fluid Machines	(M30) Energy and Process Engineering, Undergraduate Academic Studies
7.	M3453	Measurement of fluid properties	(M30) Energy and Process Engineering, Undergraduate Academic Studies (MR0) Measurement and Control Engineering, Undergraduate Academic Studies
8.	URZP14	Fundamentals of Mechanical Engineering	(ZP0) Disaster Risk Management and Fire Safety, Undergraduate Academic Studies
9.	M3203	Technology of machinery	(M30) Energy and Process Engineering, Undergraduate Academic Studies
10.	M3401	Fluid Mechanics 2	(M30) Energy and Process Engineering, Undergraduate Academic Studies
11.	M3496	Pipeline Transportation	(M30) Energy and Process Engineering, Undergraduate Academic Studies
12.	M3553	Pipe Networks Modelling	(M30) Energy and Process Engineering, Master Academic Studies
13.	M3513	Computational Fluid Dynamics	(M30) Energy and Process Engineering, Master Academic Studies
14.	S0MI12	Theory of ship's motion and maneuverability	(S00) Traffic and Transport Engineering, Master Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	M. Milankov, Maša Bukurov, A. Jovanović, T. Somer, EXPERIMENTAL STUDY OF THE HYDRODINAMIC EFECTS OF IRRIGATION SUCTION DRAINAGE, Arch Orthop Trauma Surg 116 (4), p. 299-304, 1997.
2.	Maša Bukurov, Ž Bukurov, M. Lekić, D. Stojković, TRANSPORTATION BY RIVER IN FUNCTION OF ECO PROTECTION AND MORE EFFICIENT USAGE OF WATER WAYS, First European Inland Waterway Navigation Conference, Balatonfured, Jun, 9-11, 1999.
3.	Maša Bukurov, S. Tašin, B. Todorović, EFFICIENCY RATE OF STEAM-WATER INJECTOR FOR HOT WATER TRANSPORTATION, Proceedings of PSU-UNS International Conference 2003 ”ENERGY AND ENVIRONMENT” Thailand, Dec. 2003, PSUUNS 03021, p.126-129
4.	Maša Bukurov, S. Bikić, B. Todorović, S. Tašin, TRANSFORMATION OF STEAM ENERGY IN JET PUMP – EFFICIENCY RATE, 25th Yugoslav Congress on Theoretical and Applied Mechanics, Novi Sad, Jun, 2005
5.	M. Effenberger, A. Gronauer, Maša Bukurov, CONTRIBUTION TO ENVIRONMENTAL PROTECTION BY USAGE OF BIOGAS, Journal on Processing and Energy in Agriculture, 1450-5029 (2004) 8, 3-4, p.69-71
6.	Maša Bukurov, ENERGETSKO-EKOLOŠKO POBOLJŠANJE LINIJE ZA PROIZVODNJU KLINKERA SUVIM POSTUPKOM U FABRICI CEMENTA, magistarski rad, Univerzitet u Novom sadu, Centar za interdisciplinarne i multidisciplinarne studije inženjerstva zaštite životne sredine, 1998.
7.	Siniša Bikić, Maša Bukurov, IMPORTANCE OF OPEN CHANNEL CALIBRATION IN FLOW RATE MEASURING, Scintific conference 2, 2006, Rousse. (proceedings, volume 45, book 1, ISSN 1311-3321)
8.	Ž. Bukurov, Maša Bukurov, B. Todorović, S. Bikić, ZAKONITOSTI TRANSFORMACIONOG PROCESA ENERGIJE PARE U ENERGIJU PRITISKA KROZ PARO-VODENU MLAZNU PUMPU, Industrijska energetika 2004, Lepenski vir, oktobar 2004
9.	Maša Bukurov, Istraživanje svojstava nadyvučnog paro-vodenog injektora, doktorska disertacija, Fakultet tehničkih nauka, Novi Sad, 2004.
10.	38.Ž. Bukurov, Maša Bukurov, B. Todorović, S. Bikić, PODLOGE ZA ISTRAŽIVANjE ENERGIJSKO-STRUJNIH KARAKTERISTIKA U NADZVUČNOJ KOMORI ZA MEŠANjE PARO-VODENE MLAZNE PUMPE, Industrijska energetika 2004, Lepenski vir, oktobar 2004

Summary data for teacher's scientific or art and professional activity:

Quotation total :	0			
Total of SCI(SSCI) list papers :	0			
Current projects :	Domestic :	0	International :	0

Science, arts and professional qualifications

Name and last name:	Dragutinović D. Gordan
Academic title:	Associate Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	06.04.1980
Scientific or art field:	Termodynamics and Heat Transfer

Academic carieer	Year	Institution	Field
Academic title election:	2010	Faculty of Technical Sciences - Novi Sad	Termodynamics and Heat Transfer
PhD thesis	1987	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics
Magister thesis	1983	Faculty of Mechanical Engineering - Beograd	Thermal Energetics and Thermotechnics
Bachelor's thesis	1977	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	M203	Fundamentals of Thermodynamics	(Z01) Safety at Work, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies (Z20) Environmental Engineering, Undergraduate Academic Studies
2.	M203L	Fundamentals in Thermodynamics	(M20) Mechanization and Construction Engineering, Undergraduate Academic Studies (M30) Energy and Process Engineering, Undergraduate Academic Studies (M40) Technical Mechanics and Technical Design, Undergraduate Academic Studies (MR0) Measurement and Control Engineering, Undergraduate Academic Studies (P00) Production Engineering, Undergraduate Academic Studies
3.	M210	Thermodynamics	(M30) Energy and Process Engineering, Undergraduate Academic Studies (M40) Technical Mechanics and Technical Design, Undergraduate Academic Studies
4.	M215	Fundamentals of Heat Transfer	(M30) Energy and Process Engineering, Undergraduate Academic Studies (M40) Technical Mechanics and Technical Design, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
5.	M3303	Fundamentals of Process Engineering	(M30) Energy and Process Engineering, Undergraduate Academic Studies
6.	URZP31	Fundamentals of Thermodynamics with Heat Transfer	(ZP0) Disaster Risk Management and Fire Safety, Undergraduate Academic Studies
7.	GS013	Special topics of building physics and thermodynamics	(G10) Energy Efficiency in Buildings, Specialised Academic Studies
8.	BMIM4A	Transport phenomena and Living systems	(BM0) Biomedical Engineering, Master Academic Studies
9.	M3508	Mass Transfer	(M30) Energy and Process Engineering, Master Academic Studies (M40) Technical Mechanics and Technical Design, Master Academic Studies
10.	DM307	Selected Chapters in Mass Transfer	(M00) Mechanical Engineering, Doctoral Academic Studies
11.	DM313	Process Kinetics	(M00) Mechanical Engineering, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1. Dragutinovic, G.D., Baclic, B.S. "Operation of Counterflow Regenerators", Book Vol. 4 in Series "Developments in Heat Transfer", Computational Mechanics Publications, Southampton, 1998.
2. Baclic, B.S. and Dragutinovic, G.D., “Asymmetric-unbalanced Counterflow Thermal Regenerator Problem: Solution by the Galerkin Method and meaning of dimensional Parameters, Int. J. Heat Mass Transfer, Vol.34, No. 2, 1991, pp. 483-498.

Representative refferences (minimum 5, not more than 10)

3.	Dragutinovic, G.D., Baclic, B.S., “Interpolation and collocation methods for prediction of thermal regenerator performances”, Thermal Science, Vol. 12, No. 4, 1996. pp. 307-327.
4.	Baclic, B.S., Heggs, P.J., and Dragutinovic, G.D., “Prediction of the Effectiveness of Unbalanced - Asymmetric Counterflow Regenerators", Publications of the Faculty of Technical Sciences, Vol. 15, 1984, pp. 1-15, University of Novi Sad.
5.	Baclic, B.S., Gvozdenac, D.D., and Dragutinovic, G.D., “Easy way to calculate the Amzelius-Schumann J function", Thermal Science, Vol. 1, No. 1, 1997, pp. 109-116.
6.	Dragutinović, D.G., Dimić, M., Sinteza optimalnih mreša toplotnih razmenjivača, Termotehnika, 1, 1998.
7.	Bašić, Đ., Petrović, J., Marić, M., Dragutinović, G., i dr., Mogućnost korišćenja energetskog potencijala geotermalnih voda u Vojvodini, Novi Sad, Prometej, 2009
8.	Martinov, M., Dragutinović, G., i dr., Mogućnost kombinovane proizvodnje električne i toplotne energije iz biomase u AP Vojvodini, Novi Sad, PSEMR AP Vojvodina, 2008
9.	Nedeljkov, M., Dragutinović, G., Mathematical Simulation od Deep-Bed Drying of Grains - A numerical simulation, CHISA, Prag, avgust 1987
10.	Nedeljkov, M., Dragutinović, G., Mogućnosti i uslovi racionalizacije procesa konvektivnosg sušenja zrnastih poljoprivrednih proizvoda, 7. simpozijum termičara, Ohrid, maj 1984.

Summary data for teacher's scientific or art and professional activity:

Quotation total :	11			
Total of SCI(SSCI) list papers :	2			
Current projects :	Domestic :	2	International :	0

Science, arts and professional qualifications

Name and last name:	Đaković D. Damir
Academic title:	Assistant Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.12.2001
Scientific or art field:	Process Technics

Academic carieer	Year	Institution	Field
Academic title election:	2012	Faculty of Technical Sciences - Novi Sad	Process Technics
PhD thesis	2011	Faculty of Technical Sciences - Novi Sad	Process Technics
Magister thesis	2007	Faculty of Technical Sciences - Novi Sad	Process Technics
Bachelor's thesis	2001	Faculty of Technical Sciences - Novi Sad	Mechanical Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	I079	Modern Energy Technologies	(M50) Energy Management, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
2.	M3303	Fundamentals of Process Engineering	(M30) Energy and Process Engineering, Undergraduate Academic Studies
3.	M3406	Heat Apparatus	(M30) Energy and Process Engineering, Undergraduate Academic Studies
4.	M3409A	Modern Energy Technologies	(M30) Energy and Process Engineering, Undergraduate Academic Studies
5.	M3507	Combustion Technology	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
6.	Z412A	Process apparatus for protecting the environment	(Z20) Environmental Engineering, Undergraduate Academic Studies
7.	Z412	Procesni aparati za zaštitu okoline(uneti naziv na engleskom)	(Z20) Environmental Engineering, Undergraduate Academic Studies
8.	M211	Measurement and Regulation	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
9.	M3031	Engineering Calculations of Energy Technologies Apparatus and Equipment	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
10.	M3517	Construction in energy and process engineering	(M30) Energy and Process Engineering, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
11.	ZRI41A	Security and Safety at Work in Process Plants	(Z01) Safety at Work, Undergraduate Academic Studies
12.	I079	Modern Energy Technologies	(M50) Energy Management, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
13.	I915	Energy Transformations	(M30) Energy and Process Engineering, Master Academic Studies
14.	I916	Energy Management in Industry	(M50) Energy Management, Master Academic Studies
15.	GS002	Energy Efficiency of Heating and Air Conditioning Systems	(G10) Energy Efficiency in Buildings, Specialised Academic Studies
16.	I070	Energy efficiency	(M50) Energy Management, Master Academic Studies
17.	I915	Energy Transformations	(M50) Energy Management, Master Academic Studies
18.	M3503	Dinamika i modeliranje termoenergetskih postrojenja(uneti naziv na engleskom)	(M30) Energy and Process Engineering, Master Academic Studies
19.	M3506	Drying Technique	(M30) Energy and Process Engineering, Master Academic Studies
20.	M3508	Mass Transfer	(M30) Energy and Process Engineering, Master Academic Studies (M40) Technical Mechanics and Technical Design, Master Academic Studies

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
21.	M3515	Energy Systems	(M30) Energy and Process Engineering, Master Academic Studies (M50) Energy Management, Master Academic Studies
22.	M3517	Construction in energy and process engineering	(M30) Energy and Process Engineering, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
23.	DM307	Selected Chapters in Mass Transfer	(M00) Mechanical Engineering, Doctoral Academic Studies
24.	DM313	Process Kinetics	(M00) Mechanical Engineering, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Đaković D.: Comments on 'Water sorption isotherms and thermodynamic properties of pearl millet grain', International Journal of Food Science and Technology, 2012, Vol. 47, No. 2, pp. 441-441, ISSN: 0950-5423.
2.	Spasojevic, M. D., Jankovic M.R., Djakovic D.D.: A New Approach to Entropy Production Minimization in Diabatic Distillation Column with Trays, Thermal Science, 2010, Vol. 14, No. 2, pp. 317-328, ISSN: 0354-9836.
3.	Djuric, S. N., Stanojevic, P. C., Djakovic, D. D., Jovovic, A. M.: The Study on the Effect of Fractional Composition and Ash Particle Diameter on the Ash Collection Efficiency at the Electrostatic Precipitator, Chemical Industry & Chemical Engineering Quarterly, 2010, Vol. 16, No. 3, pp. 229-236, ISSN: 1451-9372.
4.	Anđelković A., Cvjetković T., Đaković D., Stojanović I.: Development of Simple Calculation Model for Energy Performance of Double Skin Façades, Thermal Science, 2012, Vol. 16, No Suppl 1, pp. 251-267, ISSN 0354-9836.
5.	Čenejac A., Bjelaković R., Anđelković A., Đaković D.: Covering of Heating Load of Object by Using ground heat as a Renewable Energy Source, Thermal Science, 2012, Vol. 16, No Suppl 1, pp. 225-235, ISSN 0354-9836
6.	Đaković D, Vujić G, Bašić Đ, Dimić M. "Several models of grain drying theory – principles and obstacles", PSU-UNS International Conference on Engineering and Environment - ICEE-2007, Phuket, Thailand: Prince of Songkla University, Faculty of Engineering, 10-11 May, 2007, pp. 614- 617
7.	Đaković D, Dimić M. "Poređenje nekih jednačina konvektivnog sušenja zrnastih materijala u nepokretnom tankom sloju", Zbornik apstrakata, ISBN 86-80587-70-2, s. 62, CD ISBN 978-86-80-587-80-6, 13. Simpozijum termičara Srbije, Sokobanja, Srbija, 16.10.-19.10.2007.
8.	Đaković D, Spasojević M, Štrbac D, Dimić M. "Primena eksergijske analize na proces sušenja kukuruza u tankom sloju", PTEP, 12(4), 233-235, 2008
9.	Đaković D, Dimić M, Spasojević M, Štrbac D, "Possibility of exergy analysis application on drying process", 4th International Conference on Engineering Technologies, ICET 2009, 28-30th April, 2009, ISBN: 978-86-7892-161-2, pp. 376-380, Novi Sad, Serbia
10.	Đaković D, Dimić M. "Pregled pristupa modelovanju fenomena prenosa u sušarama sa kombinovanim tokovima", PTEP , 13(3), 283-287, 2009

Summary data for teacher's scientific or art and professional activity:

Quotation total :	0			
Total of SCI(SSCI) list papers :	5			
Current projects :	Domestic :	2	International :	1

Science, arts and professional qualifications

Name and last name:	Đurić N. Slavko
Academic title:	Assistant Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.01.2007
Scientific or art field:	Environment Protection Engineering

Academic carieer	Year	Institution	Field
Academic title election:	2012	Faculty of Technical Sciences - Novi Sad	Environment Protection Engineering
PhD thesis	2003	Faculty of Mechanical Engineering - Beograd	Mechanical Engineering
Magister thesis	1998	Faculty of Mechanical Engineering - Beograd	Mechanical Engineering
Bachelor's thesis	1980	Faculty of Mathematics - Beograd	Mathematics

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	M3303	Fundamentals of Process Engineering	(M30) Energy and Process Engineering, Undergraduate Academic Studies
2.	M3406	Heat Apparatus	(M30) Energy and Process Engineering, Undergraduate Academic Studies
3.	Z304	Propagation of Disturbances	(Z20) Environmental Engineering, Undergraduate Academic Studies
4.	Z304A	Propagation of disturbances	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
5.	Z306	Process Engineering	(Z20) Environmental Engineering, Undergraduate Academic Studies
6.	Z306A	Process Engineering	(Z01) Safety at Work, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
7.	Z311	Process Systems and Equipment	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies (Z20) Environmental Engineering, Undergraduate Academic Studies
8.	Z412A	Process apparatus for protecting the environment	(Z20) Environmental Engineering, Undergraduate Academic Studies
9.	Z417	Methods and Systems for Water Treatment	(Z20) Environmental Engineering, Undergraduate Academic Studies
10.	ZR404	Occupational Safety Systems, Means and Equipment	(Z01) Safety at Work, Undergraduate Academic Studies
11.	Z101	Uvod i principi zaštite okruženja(uneti naziv na engleskom)	(Z20) Environmental Engineering, Undergraduate Academic Studies
12.	Z401A	Projektovanje i planiranje u zaštiti životne sredine(uneti naziv na engleskom)	(Z20) Environmental Engineering, Undergraduate Academic Studies
13.	Z412	Procesni aparati za zaštitu okoline(uneti naziv na engleskom)	(Z20) Environmental Engineering, Undergraduate Academic Studies
14.	Z417	Postupci i postrojenja za tretman voda(uneti naziv na engleskom)	(Z20) Environmental Engineering, Undergraduate Academic Studies
15.	ZRI41A	Security and Safety at Work in Process Plants	(Z01) Safety at Work, Undergraduate Academic Studies
16.	Z501	21BProtection System Design	(Z20) Environmental Engineering, Master Academic Studies
17.	Z501	Projektovanje sistema zaštite(uneti naziv na engleskom)	(Z20) Environmental Engineering, Master Academic Studies
18.	M3506	Drying Technique	(M30) Energy and Process Engineering, Master Academic Studies
19.	M3508	Mass Transfer	(M30) Energy and Process Engineering, Master Academic Studies (M40) Technical Mechanics and Technical Design, Master Academic Studies
20.	M3511	Diffusion apparatus	(M30) Energy and Process Engineering, Master Academic Studies
21.	SZSP17	Savremene instrumentalne metode analize zagađujućih supstanci u životnoj sredini	(Z00) Environmental Engineering, Specialised Academic Studies

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
22.	ZD060	Selected topics in air pollution	(Z00) Environmental Engineering, Doctoral Academic Studies (Z01) Safety at Work, Doctoral Academic Studies
23.	ZRD28A	Selected topics in the science of occupational safety	(Z01) Safety at Work, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Đurić, S., Omerović, M., Brankov, S., Džaferović, E., Stanojević, P, (2011): Experimental examination of sulphur dioxide separation from mixture of gas in dry procedure with the aid of calcium carbonate, Thermal Science, ISSN 0354-9836 Vol. 15, No.1, pp. 115-124
2.	Đurić S., Stanojević P., Đaković D., Jovović A., (2010): The study on the effect of fractional Composition and ash particle Diameter on the ash collection Efficiency at the electrostatic Precipitator, Chemical Industry & Chemical Engineering Quarterly, ISSN 1451-9372 Vol.16, No.3, pp. 229−236
3.	Đurić S., Stanojević P., Đuranović D., Brankov S., Milašinović S., Qualitative analysis of coal combusted in boilers of the thermal power plants in Bosnia and Herzegovina, Thermal Science 2012 Volume 16, Issue 2, Pages: 605-612.
4.	Nakomčić, B., Stajić, T., Cepić, Z., Đurić, S., Geothermal energy potentials in the province of Vojvodina from the aspekt of the direct energy utilization, Renewable and Sustainable Energy Reviews, 2012 Volume 16, Issue 8, Pages: 5696-5700
5.	Djuric Slavko N, Brankov Sasa D, Stanojevic Petko, Bozickovic ranko, IRANIAN JOURNAL OF CHEMISTRY & CHEMICAL ENGINEERING-INTERNATIONAL ENGLISH EDITION, (2012), vol. 31 br. 2, str. 45-51
6.	Slavko (Nikola) Đurić, Žarko (Mirko) Bojić, Dragan (Boro) Đuranović, Boro (Branko) Gojković, Slobodan (Nestor) Tašin, Zdravko (Cvijan) Božičković, The analysis of the road traffic accidents directly caused by tractor drivers in the territory of the Repiblic of Serbia, RAD PRIHVAĆEN ZA ŠTAMPU U ČASOPISU: TTEM-Technics Technologies Education Management, Vol.8, No.2, 5/6. 2013
7.	Đurić, S., Đaković, D., (2009): The qualitative estimation of Montenegro lignite characteristics, 4th Internacional Conference on Engineering Technologies ICET, Novi Sad, 28th-30th April, 2009., PROCEEDINGS, ISBN 978-86-7892-227-5, Vol. 1, pp. 73-79
8.	Đurić, S., Vojinović-Miloradov, M., Krmar, M., Slivka, J., Mrđa,D., (2007): Aranđelović,I., Đaković,D., Stanojević,P., Research of radionuclides influence in soil on environment of municipality Petrovo, Republika Srpska, Bosnia & Herzegovina, XI international ECO-CONFERENCE, 26th-29th September 2007, Novi Sad, Environmental protection of urban ans suburban settlements, ISBN 978-86-83177-30-1, ISBN 86-83177-27-0 (za izdavačku celinu), Vol. I, pp. 169-176
9.	Đurić, S., (2011): Redukcija emisije SO2 na energetskim postrojenjima primenom suvih aditivnih postupaka, ENERGIJA, ekonomija, ekologija , 2011, List saveza energetičara, ISSN 0354-8651, Broj 1, Godina XIII, Str. 168-170
10.	Đurić, S., Đaković, D., Brankov, S., Omerović, M., Džaferović, E., (2010): Matematički model proračuna ravnotežnog sastava gasifikacije komunalnog čvrstog otpada, ENERGIJA,ekonomija,ekologija 2010, List saveza energetičara, ISSN 0354-8651, Broj 4, Godina XII, Str. 67-74

Summary data for teacher's scientific or art and professional activity:

Quotation total :	3			
Total of SCI(SSCI) list papers :	6			
Current projects :	Domestic :	3	International :	1

Science, arts and professional qualifications

Name and last name:	Grković R. Vojin
Academic title:	Full Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.06.1994
Scientific or art field:	Thermal Energetics and Thermotechnics

Academic carieer	Year	Institution	Field
Academic title election:	1993	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics
PhD thesis	1984	Faculty of Mechanical Engineering - Beograd	Mechanical Engineering
Magister thesis	1974	Faculty of Mechanical Engineering - Beograd	Mechanical Engineering
Bachelor's thesis	1970	Faculty of Mechanical Engineering - Beograd	Mechanical Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	EOS38	Energetski menadžment	(E01) Power Engineering - Renewble Sources of Electrical Energy, Undergraduate Professional Studies
2.	M3302	Thermoenergy Plants	(M30) Energy and Process Engineering, Undergraduate Academic Studies
3.	M3405	Thermal Turbines 1	(M30) Energy and Process Engineering, Undergraduate Academic Studies
4.	M3501	Refrigeration Devices	(M30) Energy and Process Engineering, Undergraduate Academic Studies
5.	Z206	Alternative Power Engineering	(Z20) Environmental Engineering, Undergraduate Academic Studies
6.	Z206A	Alternative Energy Sources	(Z01) Safety at Work, Undergraduate Academic Studies
7.	ZOI312	Thermal Power Plants	(Z20) Environmental Engineering, Undergraduate Academic Studies
8.	ZOI31A	Thermal power plants	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
9.	M211	Measurement and Regulation	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
10.	M3495	Therma Energy Ekuipment	(M30) Energy and Process Engineering, Undergraduate Academic Studies
11.	I938	Energy and Society	(M50) Energy Management, Master Academic Studies
12.	M3505	Processes and Constructions of Multistage Turbine	(M30) Energy and Process Engineering, Master Academic Studies
13.	I939	Merenje, nadzor i upravljanje	(M50) Energy Management, Master Academic Studies
14.	M3503	Dinamika i modeliranje termoenergetskih postrojenja(uneti naziv na engleskom)	(M30) Energy and Process Engineering, Master Academic Studies
15.	M3515	Energy Systems	(M30) Energy and Process Engineering, Master Academic Studies (M50) Energy Management, Master Academic Studies
16.	M5022	Renewable energy sources	(M50) Energy Management, Master Academic Studies
17.	M5025	Energy audits	(M50) Energy Management, Master Academic Studies
18.	DM216	Energy Systems	(M00) Mechanical Engineering, Doctoral Academic Studies
19.	DM217	Energy Management in Idustry	(M00) Mechanical Engineering, Doctoral Academic Studies
20.	DM219	Energy Politics	(M00) Mechanical Engineering, Doctoral Academic Studies
21.	DM302	Engineering Experimental Methods	(H00) Mechatronics, Doctoral Academic Studies (M00) Mechanical Engineering, Doctoral Academic Studies
22.	DM310	Mathematical Process Modelling	(M00) Mechanical Engineering, Doctoral Academic Studies
23.	DM318	Contemporary Methods for Turbomachine Design	(M00) Mechanical Engineering, Doctoral Academic Studies
24.	DM319	Optimization of Power Machine and Thermal Equipment	(M00) Mechanical Engineering, Doctoral Academic Studies
25.	DM333	Renewable Energy Resoruces	(M00) Mechanical Engineering, Doctoral Academic Studies
26.	DM334	Optimization of Energy Systems Operation	(M00) Mechanical Engineering, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Grković V.: " Tehniloške osnove regulisanja parnih turbina za spregnutu proizvodnju električne i toplotne energije", Futura-publikacije, Novi Sad, 1995, ISBN 86-7188-001-X.
2.	Grković V.: “Hladjenje gasnih turbina”, Dečje Novine, Gornji Milan-ovac, 1994
3.	Grković V. and Petrović J.: "Simulation of the Heat-Load Distribution Between District-Heaters Connected to the Co Generation Turbine at off-Design Load Conditions", ICHMT 2 International Forum on Expert Systems and Computer Simulation in Energy Engineering, University of Erlangen, Erlangen, Germany, 1992
4.	Grković V.: “Toplotne turbomašine”, FTN Izdavaštvo, Novi Sad, 2004.
5.	Grković V., Ćuk N. and Živković M.: "Refurbishment Gas Turbines TG 3000 for Burning Gas Instead of Jet Fuel - a Case Study", National Energy Conference CNE "98, Neptun-Olimp, Romania, June 14-18, 1998, paper code 2.6.1.
6.	Grković V., Fuks R. i Stetter H.: “Numerička interpretacija promenljivih, neproračunskih, stacionarnih režima rada aksijalnih turbokompresora”, ELEKTROPRIVREDA, 53 (2000.), Br. 2, s. 27-31.
7.	Grković V., Ćuk N. i Živković M.: “Energetski efekti rekonstrukcije gasnih turbina TG 3000 radi prevođenja sa tečnog na gasovito gorivo”, TERMOTEHNIKA, XXII (1996), Br. 2-3, s. 233-239.
8.	Grković V.: “Algoritam za izračunavanje parametara oduzimanja pri neproračunskim režimima rada kondenzacione turbine sa dva oduzimanja pare za daljinsko grejanje od kojih je regulisano ono na višem pritisku”, TEHNIKA - MAŠINSTVO, 41 (1992), Br.3-4, pp. M1-M7.
9.	Grković V.: "Energy-Efficiency Improvements by Joint Oeration of Two DH Systems Using Old Condensing Turbines", ENERGY, the International Journal, Vol.22, (1997), No. 11, pp. 1099-1102.
10.	Grković V.: "Selection of the Optimal Extraction Pressure for Steam from a Condensation-Extraction Turbine", ENERGY, the International Journal, Vol.15, (1990) No. 5, pp. 459-465.

Summary data for teacher's scientific or art and professional activity:

Quotation total :	12			
Total of SCI(SSCI) list papers :	5			
Current projects :	Domestic :	1	International :	1

Science, arts and professional qualifications

Name and last name:	Gvozdenac D. Dušan
Academic title:	Full Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.06.1973
Scientific or art field:	Thermal Energetics and Thermotechnics

Academic carieer	Year	Institution	Field
Academic title election:	1993	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics
PhD thesis	1981	Faculty of Mechanical Engineering - Beograd	Thermal Energetics and Thermotechnics
Magister thesis	1978	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics
Bachelor's thesis	1973	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	EOS38	Energetski menadžment	(E01) Power Engineering - Renewble Sources of Electrical Energy, Undergraduate Professional Studies
2.	M119	Energy Transformations	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
3.	M222A	Energy System Engineering	(M30) Energy and Process Engineering, Undergraduate Academic Studies
4.	M3311	Renewable Energy Sources	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
5.	M3501	Refrigeration Devices	(M30) Energy and Process Engineering, Undergraduate Academic Studies
6.	Z206	Alternative Power Engineering	(Z20) Environmental Engineering, Undergraduate Academic Studies
7.	Z206A	Alternative Energy Sources	(Z01) Safety at Work, Undergraduate Academic Studies
8.	Z206	Alternativna energetika(uneti naziv na engleskom)	(Z20) Environmental Engineering, Undergraduate Academic Studies
9.	E2313	Fundamentals of Process and Energy Engineering	(E20) Computing and Control Engineering, Undergraduate Academic Studies (E10) Power, Electronic and Telecommunication Engineering, Undergraduate Academic Studies
10.	II1044	Energy flows and energy efficiency	(I10) Industrial Engineering, Undergraduate Academic Studies
11.	M211	Measurement and Regulation	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
12.	M3031	Engineering Calculations of Energy Technologies Apparatus and Equipment	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
13.	M3494	Energy efficiency	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
14.	I939	Merenje, nadzor i upravljanje	(M50) Energy Management, Master Academic Studies
15.	IMDS78	Odabrana poglavlja iz energetskog menadžmenta(uneti naziv na engleskom)	(I22) Engineering Management, Specialised Academic Studies
16.	M3503	Dinamika i modeliranje termoenergetskih postrojenja(uneti naziv na engleskom)	(M30) Energy and Process Engineering, Master Academic Studies
17.	M3M07	Energy storage	(ZC0) Clean Energy Technologies, Master Academic Studies
18.	M5022	Renewable energy sources	(M50) Energy Management, Master Academic Studies
19.	SZSP24	Savremeni principi energetskog menadžmenta	(Z00) Environmental Engineering, Specialised Academic Studies
20.	DM216	Energy Systems	(M00) Mechanical Engineering, Doctoral Academic Studies
21.	DM217	Energy Management in Idustry	(M00) Mechanical Engineering, Doctoral Academic Studies

Study Programme Accreditation

MASTER ACADEMIC STUDIES — Energy and Process Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
22.	DM218	Contemporary Energy Technologies	(M00) Mechanical Engineering, Doctoral Academic Studies
23.	DM219	Energy Politics	(M00) Mechanical Engineering, Doctoral Academic Studies
24.	DM302	Engineering Experimental Methods	(H00) Mechatronics, Doctoral Academic Studies (M00) Mechanical Engineering, Doctoral Academic Studies
25.	DM309	Energy Management Methods	(M00) Mechanical Engineering, Doctoral Academic Studies
26.	DM332	Energy Management in Buildings	(M00) Mechanical Engineering, Doctoral Academic Studies
27.	DM333	Renewable Energy Resoruces	(M00) Mechanical Engineering, Doctoral Academic Studies
28.	ZSP24	Modern Principles of Energy Management	(Z00) Environmental Engineering, Doctoral Academic Studies
29.	IMDR78	Odabrana poglavlja iz energetskog menadžmenta(uneti naziv na engleskom)	(I20) Industrial Engineering / Engineering Management, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Energy Efficiency in Food Processing Industry – East European Experience, edited by D. Gvozdenac, UNDP/UNIDO Project DP/RER/83/003, Novi Sad, pp. 123, 1991.
2.	Conterporary problems in Power Engineering (monograph), Novi Sad/Thesaloniki, Gvozdenac D, Xypteras J, Dimić M. 1996.
3.	Measurement and regulation (Selected chapters for operators of large power plants), Institute of energy and process engineering, Novi Sad, Gvozdenac, D, Pešenjanski, I,1980. (in Serbian).
4.	Measurement and Regulation in Thermal Engineering, Faculty of Technical Sciences, Gvozdenac, D, Novi Sad, 2000. (in Serbian).
5.	Bilansiranje energetskih tokova, Pokrajinski centar za energetku efikasnost, Gvozdenac, D., Marić, M., Petrović, J., Novi Sad, 2006.
6.	Gvozdenac D, Menke C, Vallikul P, Petrovic J, Gvozdenac B: Assessment of potential for natural gas-based cogeneration in Thailand, Energy, Volume 34, Issue 4, 2009, pp 465-475
7.	A Mathematical Model for Heat Transfer in Combustion Chambers of Steam Generators, Gulič, M, Gvozdenac, D, Transactions of the ASME Journal of Engineering for Power, Vol. 103, 1981, pp. 545 – 551.
8.	Somcharoenwattana W, Menke C, Kamolpus D, Gvozdenac D: Study of Operational Parameters Improvement of Natural-Gas Cogeneration Plant in Public Buildings in Thailand, Energy and Buildings, Vol. 43, Issue 4, April, 2011. p. 925-934
9.	Two-pass counter cross-flow heat exchangers with both fluids unmixed throughout, Gvozdenac, D, Waerme - und Stoffuebertragung, Vol. 20, 1986, pp. 151 – 161.
10.	Analytical Solution of the Transient Response of Gas-to-Gas Cross-flow Heat Exchanger With Both Fluids Unmixed, Gvozdenac, D.D, ASME Journal of Heat Transfer, Vol. 108, 1986, pp. 722-727.

Summary data for teacher's scientific or art and professional activity:

Quotation total :	71			
Total of SCI(SSCI) list papers :	26			
Current projects :	Domestic :	2	International :	1

Science, arts and professional qualifications

Name and last name:	Petrovački P. Dušan
Academic title:	Emeritus Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.01.1971
Scientific or art field:	Automatic Control and System Engineering

Academic carieer	Year	Institution	Field
Academic title election:	2011		Automatic Control and System Engineering
PhD thesis	1979	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering
Magister thesis	1973	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering
Bachelor's thesis	1968	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	AU509	Nonlinear Control Systems	(E20) Computing and Control Engineering, Master Academic Studies (MR0) Measurement and Control Engineering, Master Academic Studies
2.	E2515	Intelligent Control Systems	(E20) Computing and Control Engineering, Master Academic Studies (MR0) Measurement and Control Engineering, Master Academic Studies (E10) Power, Electronic and Telecommunication Engineering, Master Academic Studies
3.	GIAU01	Geosensor networks	(E20) Computing and Control Engineering, Master Academic Studies (MR0) Measurement and Control Engineering, Master Academic Studies (E10) Power, Electronic and Telecommunication Engineering, Master Academic Studies
4.	GIAU04	Geospatial data visualization	(E20) Computing and Control Engineering, Master Academic Studies
5.	M3417	Applied industrial automatization	(M30) Energy and Process Engineering, Master Academic Studies
6.	SDGI04	Selected Chapters in Underground Infrastructure Detection	(GI0) Geodesy and Geomatics, Specialised Academic Studies
7.	SDGI08	Selected topics in laser scanning	(GI0) Geodesy and Geomatics, Specialised Academic Studies
8.	SDGI13	Selected topics in spatial data infrastructure	(GI0) Geodesy and Geomatics, Specialised Academic Studies
9.	SDGI3C	Selected topics in Geoportals	(GI0) Geodesy and Geomatics, Specialised Academic Studies
10.	SDGI5F	Basic topics in remote sensing and image processing	(GI0) Geodesy and Geomatics, Specialised Academic Studies
11.	DAU005	Selected Chapters in Optimization Methods	(M00) Mechanical Engineering, Doctoral Academic Studies
12.	DAU011	Selected Chapters in Geographic Information Systems and Technologies	(E20) Computing and Control Engineering, Doctoral Academic Studies
13.	DGI004	Selected Chapters in Underground Infrastructure Utility Detection	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
14.	DGI010	Selected Chapters in Landscape Arrangement	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
15.	DGI016	Selected Chapters in Systems and Signals	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
16.	DGI018	Selected Chapters of Automatic Control Systems	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
17.	DAU005	Selected Chapters in Optimization Methods	(E20) Computing and Control Engineering, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1. D. Petrovački: "Optimal Control of a Heat Conduction Problem" Journal of Applied Mathematics and Physics, Vol. 26; 463-480, Basel, Switzerland, 1975.
2. D. Petrovački: "The Minimum Time Problem for a Class of Nonlinear Distributed Parameter Systems", International Journal of Control, Vol. 32, No. 1, 51-62, London, United Kingdom., 1980

Representative refferences (minimum 5, not more than 10)

3.	S. Odri, D. Petrovački, G. Krstonošić: "Evolutional Development of a Multi Level Neural Networks", INNS Neural Networks, Pergamon Press, Volume 6, Number 4, 1993.
4.	V.Pavlica, D.Petrovački: "About simple fuzzy control and fuzzy control based on fuzzy relational equations", International Journal FUZZY SETS AND SYSTEMS, Elsevier-Science, Amsterdam
5.	Ristić A., Petrovački D., Govedarica M.: A New Method to Simultaneously Estimate the Radius of a Cylindrical Object and the Wave Propagation Velocity from GPR Data (SCI 2010 IF=1.416), Computers & Geosciences, 2009. Vol.35, No 8, p 1620-1630, ISSN 0098-3004
6.	Govedarica M., Petrovački D., Sladić D., Ristić A., Jovanović D., Pajić V., Vrtunski M., Ristić A.: ENVIRONMENTAL DATA IN SERBIAN SPATIAL DATA INFRASTRUCTURE - GEOPORTAL OF ECOLOGY (IF 2010 0.178) positively evaluated and accepted for publication in JEPE 2011, Journal of Environmental Protection and Ecology, 2012, ISSN 1311-5065
7.	Ristić A., Abolmasov B., Govedarica M., Petrovački D., Ristić A.: Shallow-landslide spatial structure interpretation using a multi-geophysical approach (IF2011 0.100), Acta Geotechnica Slovenica, 2012, Vol. 9, No 1/2012, pp. 47-59, ISSN 1854-0171
8.	Govedarica M., Sladić D., Petrovački D., Ninkov T., Ristić A.: Metadata Catalogues in Spatial Information Systems (2009 IF = 0.167), Geodetski list, 2010, Vol. 64, No 4, pp. 313-334, ISSN 0016-710X, UDK: 528
9.	Ristić A., Govedarica M., Petrovački D.: GNSS-Status and Perspective, Časopis za procesnu tehniku i energetiku u poljoprivredi (PTEP), 2010, Vol. 14, No 1, pp. 6-10, ISSN 1821-4487, UDK: 63:004(497.11)
10.	Ristić A., Petrovački D., Govedarica M.: Radar Remote Sensing Technologies - the Usage in Agriculture, Časopis za procesnu tehniku i energetiku u poljoprivredi (PTEP), 2010, Vol. 14, No 2, pp. 76-80, ISSN 1821-4487, UDK: 621.396.96(075.8)

Summary data for teacher's scientific or art and professional activity:

Quotation total :	45			
Total of SCI(SSCI) list papers :	5			
Current projects :	Domestic :	9	International :	1

Science, arts and professional qualifications

Name and last name:	Petrovački Lj. Nebojša
Academic title:	Assistant Professor
Name of the institution where the teacher works full time and starting date:	-
Scientific or art field:	Automatic Control and System Engineering

Academic carieer	Year	Institution	Field
Academic title election:	2009	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering
PhD thesis	2008	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering
Magister thesis	2005	University of California, Los Angeles - Los Angeles	Automatic Control and System Engineering
Bachelor's thesis	2000	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	E226	Automatic Control Systems	(E20) Computing and Control Engineering, Undergraduate Academic Studies (H00) Mechatronics, Undergraduate Academic Studies (MR0) Measurement and Control Engineering, Undergraduate Academic Studies (SEL) Software Engineering and Information Technologies - Loznica, Undergraduate Academic Studies
2.	E238A	Control Systems Technology	(BM0) Biomedical Engineering, Undergraduate Academic Studies (E20) Computing and Control Engineering, Undergraduate Academic Studies (MR0) Measurement and Control Engineering, Undergraduate Academic Studies
3.	M3408	Automatic Control Systems	(M40) Technical Mechanics and Technical Design, Undergraduate Academic Studies
4.	BMI125	Biological Control Systems	(BM0) Biomedical Engineering, Undergraduate Academic Studies
5.	EMSAU 1	Automatic Control Systems in Electronics	(E10) Power, Electronic and Telecommunication Engineering, Undergraduate Academic Studies
6.	GG226	Automatic control systems in geomatics	(GI0) Geodesy and Geomatics, Undergraduate Academic Studies
7.	GG99	Geospatial technologies - basics	(ZP0) Disaster Risk Management and Fire Safety, Undergraduate Academic Studies
8.	M3409	Automatic control systems	(M30) Energy and Process Engineering, Undergraduate Academic Studies
9.	AU509	Nonlinear Control Systems	(E20) Computing and Control Engineering, Master Academic Studies (MR0) Measurement and Control Engineering, Master Academic Studies
10.	GIAU01	Geosensor networks	(E20) Computing and Control Engineering, Master Academic Studies (MR0) Measurement and Control Engineering, Master Academic Studies (E10) Power, Electronic and Telecommunication Engineering, Master Academic Studies
11.	M3417	Applied industrial automatization	(M30) Energy and Process Engineering, Master Academic Studies
12.	DGI018	Selected Chapters of Automatic Control Systems	(GI0) Geodesy and Geomatics, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	2.Zoran D. Jeličić, Nebojša Petrovački: Optimality Conditions and a Solution Scheme For Fractional Optimal Control Problems, accepted for publication on July 29th, 2008 in Journal of Structural And Multidisciplinary Optimization, Springer, Berlin-Heidelberg
2.	1.Nebojša Petrovački: Identifikacija, simulacija i upravljanje klasom EDFA pojačavača, Doktorska disertacija, Fakultet tehničkih nauka u Novom Sadu, Novi Sad, decembar 2008. godine.

Representative refferences (minimum 5, not more than 10)	
3.	3.Zoran D. Jeličić, Nebojša Petrovački: On The Fractional Order Model of EDFA With ASE, in The Proceedings of IEEE Conference on Numerical Simulation of Optical Devices, University of Nottingham, Great Britain, September 2008.
4.	4.Zoran D. Jeličić, Nebojša Petrovački: Fractional Derivative Model of Erbium-Doped Fiber Amplifiers With Asynchronous Spontaneous Emission, in Book of Abstracts of 2007 SIAM Conference on Control and Its Applications, June 29th - July 1st, 2007, San Francisco, California
5.	5.Nebojša Petrovački, Zoran D. Jeličić: Specific Optimal Control of Erbium-Doped Fiber Amplifiers, in The Proceedings of IFAC Workshop: Technology Transfer In Developing Countries: Automation in Infrastructure Creation, May 17-18, 2007 Izmir-Cesme, Turkey
6.	6.Nebojša Petrovački, Zoran D. Jeličić: Modeling, Simulation, And Control of Erbium-Doped Fiber Amplifiers, in The Proceedings of 7th Portuguese Conference on Automatic Control, Lisbon, Portugal, September 11-13th 2006
7.	7.Nebojša Petrovački, Zoran D. Jeličić: Optimal Transient Response of Erbium-Doped Fiber Amplifiers, in The Proceedings of The 6th IEEE International Conference on Numerical Simulation of Optoelectronic Devices, Nanyang Technological University, Singapore, September 11-14th 2006
8.	8.Nebojša Petrovački: Stationary Simulation of The Gas Pipeline Using Neural Networks - Case Study of Vojvodina, in The Proceedings of The 10th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2006, July 16-19, 2006, Orlando, Florida (co-chair of the session)
9.	9.Nebojša Petrovački: Erbium-Doped Fiber Amplifiers, invited talk at Department of Electrical and Computer Engineering of University of California, San Diego, April 14th, 2006.
10.	11.Nebojša Petrovački: Gain Regulation In Erbium-Doped Fiber Amplifiers, in The Proceedings of The IEEE EUROCON 2005: The International Conference on Computer As A Tool, November 21-24, 2005, Belgrade, Serbia

Summary data for teacher's scientific or art and professional activity:				
Quotation total :	0			
Total of SCI(SSCI) list papers :	1			
Current projects :	Domestic :	0	International :	3

Science, arts and professional qualifications

Name and last name:	Petrović R. Jovan
Academic title:	Associate Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.01.1982
Scientific or art field:	Thermal Energetics

Academic carieer	Year	Institution	Field
Academic title election:	2012	Faculty of Technical Sciences - Novi Sad	Thermal Energetics
PhD thesis	2007	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics
Magister thesis	2002	Faculty of Agriculture - Novi Sad	Process Technics
Bachelor's thesis	1978	Faculty of Technical Sciences - Novi Sad	Thermal Energetics and Thermotechnics

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	I079	Modern Energy Technologies	(M50) Energy Management, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
2.	M3304	Boiler Plants	(M30) Energy and Process Engineering, Undergraduate Academic Studies
3.	M3406	Heat Apparatus	(M30) Energy and Process Engineering, Undergraduate Academic Studies
4.	M3409A	Modern Energy Technologies	(M30) Energy and Process Engineering, Undergraduate Academic Studies
5.	Z306	Process Engineering	(Z20) Environmental Engineering, Undergraduate Academic Studies
6.	Z306A	Process Engineering	(Z01) Safety at Work, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
7.	Z412A	Process apparatus for protecting the environment	(Z20) Environmental Engineering, Undergraduate Academic Studies
8.	Z412	Procesni aparati za zaštitu okoline(uneti naziv na engleskom)	(Z20) Environmental Engineering, Undergraduate Academic Studies
9.	M211	Measurement and Regulation	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
10.	M3041	Cogeneration facilities	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
11.	M3494	Energy efficiency	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
12.	M3497	Energy audits	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
13.	M3518	Energy Management	(M30) Energy and Process Engineering, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
14.	I079	Modern Energy Technologies	(M50) Energy Management, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
15.	I916	Energy Management in Industry	(M50) Energy Management, Master Academic Studies
16.	I917	Energy Management in Buildings	(M50) Energy Management, Master Academic Studies
17.	I078	Energetska politika	(M50) Energy Management, Master Academic Studies

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
18.	M3515	Energy Systems	(M30) Energy and Process Engineering, Master Academic Studies (M50) Energy Management, Master Academic Studies
19.	M3518	Energy Management	(M30) Energy and Process Engineering, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
20.	M3M01	Implementation of Energy Management in Industry and Buildings	(ZC0) Clean Energy Technologies, Master Academic Studies
21.	M5025	Energy audits	(M50) Energy Management, Master Academic Studies
22.	DM216	Energy Systems	(M00) Mechanical Engineering, Doctoral Academic Studies
23.	DM217	Energy Management in Idustry	(M00) Mechanical Engineering, Doctoral Academic Studies
24.	DM218	Contemporary Energy Technologies	(M00) Mechanical Engineering, Doctoral Academic Studies
25.	DM219	Energy Politics	(M00) Mechanical Engineering, Doctoral Academic Studies
26.	DM332	Energy Management in Buildings	(M00) Mechanical Engineering, Doctoral Academic Studies
27.	DM333	Renewable Energy Resoruces	(M00) Mechanical Engineering, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Bojić M. at al: 24th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems - ECOSS 2011, Novi Sad, 2011, pages 3958, ISBN 978-86-6055-016-5 (member of editorial team)
2.	Ćosić I. at al: 4th Internationa Conference on Engineering Technologies ICET 2009, Novi Sad, 2009, pages 523, ISBN 978-86-7892-227-5 (member of editorial team)
3.	Gvozdenac, D., Menke, C., Vallikul, P., Petrović, J., Gvozdenac, B.: Assessment of potential for natural gas/based cogeneration in Thailand, Energy, Vol. 34, No.4, pp. 465–475.
4.	JOVAN R. PETROVIĆ, BRANKA GVOZDENAC – UROŠEVIĆ, JOSIP J. POLC: Reasons for heat demand changes and effects on planning and development of heating systems, Thermal Sciences, Year 2112, Vol. 16, Suppl. 1, pp S63-S77, ISSN 0354-9836, UDC 621
5.	MIROSLAV V. KLJAJIĆ, JOVAN R. PETROVIĆ: Applicability assessment of central and solar hot water system integration in Serbia, Thermal Sciences, Year 2012, Vol. 16, Suppl. 1, pp S63-S77, ISSN 0354-9836, UDC 621
6.	GVOZDENAC D, PETROVIC J, GVOZDENAC B.: Industrial Gas Turbine Operation Procedure Improvement, Thermal Science, Vol. 15 (2011), pages 17-28, UDC: 662.76.035/.036, DOI: 10.2298/TSCI100516012G
7.	GVOZDENAC D., PETROVIC J.: Survey of Activities in the Subnetwork in Food Processing Industry; ENCONET NEWSLETTER, Prague, Czechoslovakia, 1989, No 2, pp. 32-35.
8.	PETROVIĆ Lj., MANOJLOVIĆ D., PETROVIĆ M., GVOZDENAC D., PETROVIĆ J.: Uticaj brzine hlađenja na kvalitet svinjskog mesa; "Tehnologija mesa", Beorad, 1990., br. 4, str. 128-135
9.	GRKOVIĆ V., PETROVIĆ J.: Pokazatelji energetske efikasnosti kod postrojenja za spregnutu proizvodnju električne i toplotne energije (SPETE), "Termotehnika", Beograd, 1991., br. 1-2, str. 27-39
10.	PETROVIC J., GVOZDENAC D., PERUNOVIC P.: Monitoring of the Operating Thermal Performances in a Water Heating Boiler - Case Study; ENCONET NEWSLETTER, Prague, Czechoslovakia, No. 4, 1991

Summary data for teacher's scientific or art and professional activity:

Quotation total :	7			
Total of SCI(SSCI) list papers :	4			
Current projects :	Domestic :	3	International :	0

Science, arts and professional qualifications

Name and last name:	Ristić V. Aleksandar
Academic title:	Assistant Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.02.2000
Scientific or art field:	Automatic Control and System Engineering

Academic carieer	Year	Institution	Field
Academic title election:	2009	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering
PhD thesis	2009	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering
Magister thesis	2001	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering
Bachelor's thesis	1999	Faculty of Technical Sciences - Novi Sad	Automatic Control and System Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	E226	Automatic Control Systems	(E20) Computing and Control Engineering, Undergraduate Academic Studies (H00) Mechatronics, Undergraduate Academic Studies (MR0) Measurement and Control Engineering, Undergraduate Academic Studies (SEL) Software Engineering and Information Technologies - Loznica, Undergraduate Academic Studies
2.	GI014	Celestial Mechanics	(GI0) Geodesy and Geomatics, Undergraduate Academic Studies
3.	GI016	Physical Geodesy	(GI0) Geodesy and Geomatics, Undergraduate Academic Studies
4.	GI025B	Geodetic Metrology	(GI0) Geodesy and Geomatics, Undergraduate Academic Studies
5.	GI404A	Digital Terrain Models	(GI0) Geodesy and Geomatics, Undergraduate Academic Studies
6.	GI409A	Underground Infrastructure Detection	(GI0) Geodesy and Geomatics, Undergraduate Academic Studies
7.	M3408	Automatic Control Systems	(M40) Technical Mechanics and Technical Design, Undergraduate Academic Studies
8.	BM119A	The application of geoinformation technologies and systems in medicine	(BM0) Biomedical Engineering, Undergraduate Academic Studies
9.	GG226	Automatic control systems in geomatics	(GI0) Geodesy and Geomatics, Undergraduate Academic Studies
10.	GG99	Geospatial technologies - basics	(ZP0) Disaster Risk Management and Fire Safety, Undergraduate Academic Studies
11.	M3409	Automatic control systems	(M30) Energy and Process Engineering, Undergraduate Academic Studies
12.	ZC037	Automation applied in the industry and buildings	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
13.	GI600	Applied Geophysics in Geomatics	(GI0) Geodesy and Geomatics, Master Academic Studies
14.	GI532	Advanced Remote Sensing Technologies	(GI0) Geodesy and Geomatics, Master Academic Studies
15.	GI537	Geosensor networks	(GI0) Geodesy and Geomatics, Master Academic Studies
16.	M3417	Applied industrial automatization	(M30) Energy and Process Engineering, Master Academic Studies
17.	SDGI01	Selected topics in geoinformation systems	(GI0) Geodesy and Geomatics, Specialised Academic Studies
18.	SDGI04	Selected Chapters in Underground Infrastructure Detection	(GI0) Geodesy and Geomatics, Specialised Academic Studies
19.	SDGI13	Selected topics in spatial data infrastructure	(GI0) Geodesy and Geomatics, Specialised Academic Studies
20.	DGI001	Selected Chapters in Geoinformation Systems	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
21.	DGI004	Selected Chapters in Underground Infrastructure Utility Detection	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
22.	DGI006	Selected Chapters in Real Estate Cadastre	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
23.	DGI009	Selected Chapters in GNSS Systems	(GI0) Geodesy and Geomatics, Doctoral Academic Studies

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
24.	DGI010	Selected Chapters in Landscape Arrangement	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
25.	DGI016	Selected Chapters in Systems and Signals	(GI0) Geodesy and Geomatics, Doctoral Academic Studies
26.	DGI018	Selected Chapters of Automatic Control Systems	(GI0) Geodesy and Geomatics, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Aleksandar Ristić, Dušan Petrovački, Miro Govedarica: A New Method to Simultaneously Estimate the Radius of a Cylindrical Object and the Wave Propagation Velocity from GPR Data, Computers & Geosciences, 2009, Vol. 35, Broj 8, str. 1620-1630, ISSN 0098-3004, (IF2010 1.416)
2.	Govedarica Miro, Boskovic Dubravka, Petrovacki Dusan, Ninkov Tosa, Ristic Aleksandar: Metadata Catalogues in Spatial Information Systems (Review), GEODETSKI LIST, (2010), vol. 64 br. 4, str. 313-334 (IF 2009 0.167)
3.	Aleksandar Ristić, Biljana Abolmasov, Miro Govedarica, Dušan Petrovački, Aleksandra Ristić: Shallow-landslide spatial structure interpretation using a multi-geophysical approach, Acta geotechnica slovenica, (2012), vol. 9, issue 1, pp 46-59, (IF 2011, 0.100)
4.	Miro Govedarica, Dušan Petrovački, Dubravka Sladić, Aleksandra Ristić, Dušan Jovanović, Vladimir Pajić, Milan Vrtunski, Aleksandar Ristic: ENVIRONMENTAL DATA IN SERBIAN SPATIAL DATA INFRASTRUCTURE - GEOPORTAL OF ECOLOGY, Journal of Environmental Protection and Ecology JEPE 2011 (IF 2010 0.178)
5.	Ristić Aleksandar, Govedarica Miro, Petrovački Dušan: GNSS status and perspective, Časopis za procesnu tehniku i energetiku u poljoprivredi (PTEP) 2010, ISSN: 1821-4487, Vol. 14, No. 1, Str. 6-10, UDK 63:004(497.11)
6.	Ristić Aleksandar, Petrovački Dušan, Govedarica Miro: Radar Remote Sensing Technologies - the Usage in Agriculture, Časopis za procesnu tehniku i energetiku u poljoprivredi (PTEP) 2010, ISSN: 1821-4487, Vol. 14, No. 2, Str. 76-80, UDK 621.396.96(075.8)
7.	Ristić A., Petrovački D., Govedarica M., Popov S.: Detekcija podzemnih voda i tokova Georadarom, Vodoprivreda, 2007, Vol. 39, Broj 229-230, str. 344-349, ISSN 0350-0519, UDK: 551.491.5
8.	Ristić A., Petrovački D., Govedarica M. : Flooding bank structure modelling using GPR, GNSS and airborne laser scanning technologies, 3. The International Symposium on Global Navigation Satellite Systems, Space-Based and Ground-Based Augmentation Systems and Applications, Berlin: Senate Department for Urban Development Berlin, 30-2 Novembar, 2009, str. 99-103, ISBN 978-3-938373-93-4
9.	Ristić A., Govedarica M., Petrovački D. : Landslide analysis using GPR, GNSS and terrestrial laser scanning technologies, 3. The International Symposium on Global Navigation Satellite Systems, Space- Based and Ground-Based Augmentation Systems and Applications, Berlin: Senate Department for Urban Development Berlin, 30-2 Novembar, 2009, str. 90-94, ISBN 978-3-938373-93-4
10.	Govedarica M., Petrovački D., Ristić A:GNSS - Based Ground Penetration Radar Applications, 2. The International Symposium on Global Navigation Satellite Systems, Space-Based and Ground-Based Augmentation Systems and Applications, Berlin: Senate Department for Urban Development Berlin, EUPOS ISC, UN OOSA, ICG, 11-14 Novembar, 2008, str. 93-94

Summary data for teacher's scientific or art and professional activity:

Quotation total :	2			
Total of SCI(SSCI) list papers :	3			
Current projects :	Domestic :	1	International :	1

Science, arts and professional qualifications

Name and last name:	Sokolović S. Dunja
Academic title:	Assistant Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.11.2012
Scientific or art field:	Process Technics

Academic carieer	Year	Institution	Field
Academic title election:	2012	Faculty of Technical Sciences - Novi Sad	Process Technics
PhD thesis	2012	Faculty of Technology - Novi Sad	Technological Engineering
Bachelor's thesis	2007	Faculty of Technology - Novi Sad	Technological Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	M3301	Pumping and Compression Stations	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
2.	M3303	Fundamentals of Process Engineering	(M30) Energy and Process Engineering, Undergraduate Academic Studies
3.	M3315	Fundamentals in Ecological Oil Analysis and Gas Industry	(M30) Energy and Process Engineering, Undergraduate Academic Studies
4.	M3403	Fluid Machines	(M30) Energy and Process Engineering, Undergraduate Academic Studies
5.	M3498	Industrial Process Technology	(M30) Energy and Process Engineering, Undergraduate Academic Studies
6.	M3517	Construction in energy and process engineering	(M30) Energy and Process Engineering, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
7.	M3517	Construction in energy and process engineering	(M30) Energy and Process Engineering, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
8.	M3599	Energy efficient separation process	(M30) Energy and Process Engineering, Master Academic Studies
9.	DM313	Process Kinetics	(M00) Mechanical Engineering, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Sokolović D., Höflinger W., Zavargo Z., Šećerov Sokolović R.: Uticaj ventilacije komore mašine alatke na osobine SHP aerosola, Hemijska industrija, 2012, Vol. 66, No. 1, pp. 67-77, ISSN 0367-598X
2.	Sokolović D., Šećerov Sokolović R., Sokolović S.: Proučavanje reoloških osobina nestabilnih emulzija mineralnog porekla , Hemijska industrija, 2012, DOI:10.2298/HEMIND120216070S, ISSN 0367-598X.
3.	Šećerov Sokolović R., Govedarica D., Sokolović D.: Separation of oil-in-water emulsion using two coalescers of different geometry, Journal of Hazardous Materials, 2010, Vol. 175, No. 1-3, pp. 1001-1006, ISSN: 0304-3894.
4.	Govedarica D., Šećerov Sokolović R., Sokolović D., Sokolović S.: Evaluation of the Separation of Liquid-Liquid Dispersions by Flow through Fiber Beds, Industrial & Engineering Chemistry Research, 2012, dx.doi.org/10.1021/ie3026967, ISSN: 0888-5885.
5.	Govedarica D., Šećerov Sokolović R., Sokolović D., Sokolović S.: A Novel Approach for the Estimation of the Efficiency of Steady-State Fiber Bed Coalescence, Separation and Purification Technology, 2012, ISSN 1383-5866, UDK: http://dx.doi.org/10.1016/j.seppur.2012.11.034
6.	Sokolović S., Zavargo Z., Sokolović D.: SUSTAINABLE DEVELOPMENT, CLEAN TECHNOLOGY AND KNOWLEDGE FROM INDUSTRY, Thermal Science, 2012, Vol. 16, Suppl. 1, pp. S131-S139, ISSN 0354-9836
7.	Sokolović D., Govedarica D.: Sustainable waste management and petroleum sludge, 1. ISWA Beacon Conference, Novi Sad: Internacional Solid Waste Association-ISWA, 10-11 Decembar, 2009, pp. 176-183
8.	Šećerov Sokolović R., Sokolović S., Sokolović D.: Waste polymer fibrous as filter media for oily water separation, 11. World Filtration Congress, Graz: 11th World Filtration Congress - Session PL03 - Solid-Liquid Separation III, 17-20 April, 2012
9.	Sokolović D., Šećerov Sokolović R., Govedarica D.: INFLUENCE OF INLET OIL CONCENTRATION ON OILY WATER SEPARATION BY STEADY-STATE BED COALESCERS TWO DIFFERENT GEOMETRY, 1. International Congress of Chemical Engineering of the ANQUE, Seville, 24-27 Jun, 2012, ISBN ISBN: 988-84-695-353, UDK: T132-T133
10.	Sokolović D., Šećerov Sokolović R.: NEW TECHNOLOGY FOR HIGH ORGANIC LOAD WASTEWATER TREATMENT, 1. International Congress of Chemical Engineering of the ANQUE, Seville, 24-27 Jun, 2012, ISBN ISBN: 978-84-695-353, UDK: str.T742-T743

Summary data for teacher's scientific or art and professional activity:				
Quotation total :	4			
Total of SCI(SSCI) list papers :	5			
Current projects :	Domestic :	1	International :	1

Science, arts and professional qualifications

Name and last name:	Spasojević Đ. Momčilo
Academic title:	Assistant Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	11.03.1981
Scientific or art field:	Process Technics

Academic carieer	Year	Institution	Field
Academic title election:	2010		Process Technics
PhD thesis	2010	Faculty of Technical Sciences - Novi Sad	Process Technics
Magister thesis	2004	Faculty of Technology - Novi Sad	Technological Engineering
Bachelor's thesis	1978	Faculty of Technical Sciences - Novi Sad	Process Technics

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	M210	Thermodynamics	(M30) Energy and Process Engineering, Undergraduate Academic Studies (M40) Technical Mechanics and Technical Design, Undergraduate Academic Studies
2.	Z304A	Propagation of disturbances	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
3.	Z306	Process Engineering	(Z20) Environmental Engineering, Undergraduate Academic Studies
4.	Z306A	Process Engineering	(Z01) Safety at Work, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
5.	Z311	Process Systems and Equipment	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies (Z20) Environmental Engineering, Undergraduate Academic Studies
6.	ZOI312	Thermal Power Plants	(Z20) Environmental Engineering, Undergraduate Academic Studies
7.	ZOI31A	Thermal power plants	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
8.	M3203	Technology of machinery	(M30) Energy and Process Engineering, Undergraduate Academic Studies
9.	M3498	Industrial Process Technology	(M30) Energy and Process Engineering, Undergraduate Academic Studies
10.	M3517	Construction in energy and process engineering	(M30) Energy and Process Engineering, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
11.	Z501	21BProtection System Design	(Z20) Environmental Engineering, Master Academic Studies
12.	Z501	Projektovanje sistema zaštite(uneti naziv na engleskom)	(Z20) Environmental Engineering, Master Academic Studies
13.	M3506	Drying Technique	(M30) Energy and Process Engineering, Master Academic Studies
14.	M3511	Diffusion apparatus	(M30) Energy and Process Engineering, Master Academic Studies
15.	M3517	Construction in energy and process engineering	(M30) Energy and Process Engineering, Master Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Sovilj, M., Spasojević, M.: „Production and application of essential oils from the domestic medicinal plant“, Journal of proceess technics and energetics, 5 , 34-38, 2001.
2.	Đaković, D., Dimić, M., Spasojević, M.: „Possibility of exergy analysis application on thin-layer drying process“ – 4th International Conference on Engineering Technologies ICET 2009, Novi Sad - rad je prihvaćen.
3.	Spasojević, M.: „Realizacija Vrelovodnog energetskog postrojenja, Novosadska toplana, Novi Sad“, u skladu sa Zakon o planiranju izgradnji. Objekat je od izuzetnog međunarodnog značaja jer je to najveće vrelovodno energetsko postrojenje u Evropi, 2007.god, R51a

Representative refferences (minimum 5, not more than 10)	
4.	Spasojević, M.: „Realizacija Poluindustrijskog rektifikacionog postrojenje, Laboratorija Tehnološkog fakulteta u Novom Sadu“, u skladu sa Zakon o planiranju izgradnji. Objekat je od izuzetnog značaja jer je jedinstven u ovom delu Evrope, 1992.god, R51b
5.	2.Đaković, D., Spasojević, M., Štrbac, D., Dimić, M., Primena eksergijske analize na proces sušenja kukuruza u tankom sloju, Časopis za procesnu tehniku i energetiku u poljoprivredi / PTEP, Časopis za procesnu tehniku i energetiku u poljoprivredi / PTEP, vol. 12, br. 4, str. 233-235, (2008),
6.	Spasojević, M., Janković, M., Djaković, D., A new approach to entropy production minimization in diabatic distillation column with trays, is accepted for publication in the journal Thermal Science. Paper will be printed in Vol. 14, No. 4, (2010)
7.	Sovilj, M., Nikolovski, B., Spasojecić, M., Supercritical carbon dioxide extraction of the selected spice plant materials, 37th International Conference of SSCHE, May 24 - 28, 2010 , Tatranské Matliare, Slovak Republic
8.	Sovilj, M., Nikolovski, B., Spasojecić, M., Nadkritična ekstrakcija nekih začinskih biljaka sa ugljendioksidom, XLVIII savetovanje Srpskog hemijskog društva, Novi Sad 17-18 april 2010
9.	Damir Đaković, Jovan Petrović, Momčilo Spasojević, Some thermodynamic properties of water during corn drying
10.	Aleksandar Anđelković, Momčilo Spasojević, Heat supply safety in district heating systems of Vojvodina province

Summary data for teacher's scientific or art and professional activity:				
Quotation total :				
Total of SCI(SSCI) list papers :				
Current projects :	Domestic :		International :	

Science, arts and professional qualifications

Name and last name:	Švenda S. Goran
Academic title:	Associate Professor
Name of the institution where the teacher works full time and starting date:	-
Scientific or art field:	Electroenergetics

Academic carieer	Year	Institution	Field
Academic title election:	2012	Faculty of Technical Sciences - Novi Sad	Electroenergetics
PhD thesis	2001	School of Electrical Engineering - Beograd	Electroenergetics
Magister thesis	1994	School of Electrical Engineering - Beograd	Electroenergetics
Bachelor's thesis	1988	Faculty of Technical Sciences - Novi Sad	Electroenergetics

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	EE401	Application of Computers in Power Systems 1	(E10) Power, Electronic and Telecommunication Engineering, Undergraduate Academic Studies
2.	ESI003	Electric power software development	(ES0) Power Software Engineering, Undergraduate Academic Studies
3.	ESI043	Optimization Methods in Power Engineering	(ES0) Power Software Engineering, Undergraduate Academic Studies
4.	SEI002	Architecture of Distributed Systems in Power Systems	(ES0) Power Software Engineering, Undergraduate Academic Studies
5.	DE207S	Prelazni procesi i stabilnost u EES	(E11) Power, Electronic and Telecommunication Engineering, Specialised Academic Studies
6.	DE216S	Computational Intelligence in Power Systems	(E11) Power, Electronic and Telecommunication Engineering, Specialised Academic Studies
7.	EE501	Numerika i algoritmi	(M30) Energy and Process Engineering, Master Academic Studies
8.	EE506	Analysis of PES 3	(E10) Power, Electronic and Telecommunication Engineering, Master Academic Studies
9.	EE560	Planiranje elektroenergetskih sistema	(E10) Power, Electronic and Telecommunication Engineering, Master Academic Studies
10.	DE105S	Optimization Methods in Power Engineering - II	(E11) Power, Electronic and Telecommunication Engineering, Specialised Academic Studies
11.	DE217S	PES Analysis 4	(E11) Power, Electronic and Telecommunication Engineering, Specialised Academic Studies
12.	EE0501	Optimization Methods in Power Systems - 1	(E10) Power, Electronic and Telecommunication Engineering, Master Academic Studies
13.	EE0516	Specialized Software in Power Systems	(ES0) Power Software Engineering, Master Academic Studies (E10) Power, Electronic and Telecommunication Engineering, Master Academic Studies
14.	DE216	Computational Intelligence in Power Systems	(E10) Power, Electronic and Telecommunication Engineering, Doctoral Academic Studies
15.	DE105	Optimization Methods in Power Engineering - II	(E10) Power, Electronic and Telecommunication Engineering, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1. Čapko D., Erdeljan A., Popović M., Švenda G.: An Optimal Relationship-Based Partitioning of Large Datasets, LNCS, Springer Verlag, 2010, str. 555-558, ISBN 978-3-642-15575-8
2. Švenda G., Simendić Z., Strezoski V.: Advanced Voltage Control Integrated in DMS, INT J ELEC POWER, 2012, Vol. 43, pp. 333-343, ISSN 0142-0615
3. Švenda G., Nahman J.: Transformer Phase Coordinate Models Extended for Grounding System Analysis, IEEE Trans. on Power Delivery, 2002, Vol. 17, No 4, pp. 1023-1029
4. Čapko D., Erdeljan A., Švenda G., Popović M.: A Dynamic Repartitioning of Large Data Model in Distribution Management Systems, Electronics and electrical engineering, 2012, Vol. 5, No 121, pp. 1392-1215, ISSN 1392-1215
5. Strezoski V., Popović D., Bekut D., Švenda G.: DMS – Basis for Increasing of Green Distributed Generation Penetration in Distribution Networks, Thermal Science, 2012, Vol. 1, No 16, pp. 189-203, ISSN 0354-9836
6. Čapko D., Erdeljan A., Popović M., Švenda G.: An Optimal Initial Partitioning of Large Datasets in Utility Management Systems, Journal of Advances in Electrical and Computer Engineering, 2011, Vol. 11, No 4, pp. 41-46, ISSN 1582-7445

Representative refferences (minimum 5, not more than 10)	
7.	Strezoski V., Švenda G., Bekut D.: Extension of the Canonical Model Application for Calculation on Power Systems Under Fault Conditions, Electrical Power
8.	Nahman J., Švenda G.: Power and Earthing System Modeling in Natural Coordinates, Electrical Power
9.	Bekut D., Švenda G., Strezoski V.: Dead Zone Phenomenon in Distance Relaying of Overhead Transmission Lines, Electrical Power System Research, 2000, No 56, pp. 1-8
10.	Nahman J., G. Svenda: Power and Earthing System Modeling in Natural Coordinates, Electrical Power And Energy Systems, ELSEVIER, 2002, No.24, pp. 541-549, ISSN 0142-0615.,

Summary data for teacher's scientific or art and professional activity:				
Quotation total :	5			
Total of SCI(SSCI) list papers :	8			
Current projects :	Domestic :	6	International :	14

Science, arts and professional qualifications

Name and last name:	Uzelac N. Dušan
Academic title:	Full Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	09.11.1973
Scientific or art field:	Applied Fluid Mechanics - Hydro Pneumatic Technics

Academic carieer	Year	Institution	Field
Academic title election:	2002	Faculty of Technical Sciences - Novi Sad	Applied Fluid Mechanics - Hydro Pneumatic Technics
PhD thesis	1991	Faculty of Technical Sciences - Novi Sad	Mechanical Engineering
Magister thesis	1981	Faculty of Technical Sciences - Novi Sad	Mechanical Engineering
Bachelor's thesis	1973	Faculty of Technical Sciences - Novi Sad	Mechanical Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	M3301	Pumping and Compression Stations	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
2.	M3306	Devices for Mechanical Purification	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
3.	M3403	Fluid Machines	(M30) Energy and Process Engineering, Undergraduate Academic Studies
4.	M3404	Hydropneumatic Components	(M30) Energy and Process Engineering, Undergraduate Academic Studies
5.	M3452	Gas equipment	(M30) Energy and Process Engineering, Undergraduate Academic Studies
6.	M3496	Pipeline Transportation	(M30) Energy and Process Engineering, Undergraduate Academic Studies
7.	GH503	Hydro Mechanical Machinery	(G00) Civil Engineering, Master Academic Studies
8.	M3516	Hidropneumatic systems	(M30) Energy and Process Engineering, Master Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Univerzitetski udžbenik HIDROPNEUMATSKE KOMPONENTE, godina izdanja 1995, izdavač STYLOS, Novi Sad
2.	Priručnik KURS ZA RUKOVOĐENjE I ODRŽAVANjE CEVOVODA, UREĐAJA I POSTROJENjA ZA PRIRODNI GAS, FTN, Novi Sad, 2002
3.	Skripta PUMPNE I KOMPRESORSKE STANICE, (autorizovana predavanja), FTN, Novi Sad, 2000
4.	D. Uzelac, S. Tašin, Solving Flow Field in Centrifugal Impellers of Flow Machines by Applying Boundaru Elements Methods, Facta Universitatis, Vol 1, No3, Niš, 1996
5.	Uzelac D., Šostakov R., Milisavljević B., Tašin S., Boundaru Elements Method Applied in Analysis of Flow Field in Turbomachines, Applied&Computing Mathematics, Vol 1, Košice,1997
6.	Uzelac D., Šostakov R., Tašin S., Starting of an Electric Motor Drive with Hydrodinamic Coupling, Facta Universitatis, Vol 1, No5, Niš, 1998
7.	Šostakov R., Uzelac D., Časnji F., Surveying The Transsient Operating Egimes of a Driving Mechanism Wiht a Hydrodynamic Coupling, Mobility&Vehicles Mechanics, Kragujevac, 1999
8.	Uzelac, D., Tašin, S.: Delimična automatizacija dvolinijske gasne stanice, Termotehnika 1-4, Beograd, 1998
9.	Šostakov R., Uzelac D., Brkljač N., ON A METHOD FOR REPRESENTING THE MACHINE DRIVING SYSTEMS OPERATION IN TRANSIENT REGIMES IN AN EASY-TO-SURVEY MANNER FOR PRACTICE AND EDUCATION, Machine Desing, Novi Sad, 2007

Summary data for teacher's scientific or art and professional activity:

Quotation total :	0			
Total of SCI(SSCI) list papers :	0			
Current projects :	Domestic :	0	International :	0

Science, arts and professional qualifications

Name and last name:	Vićević D. Marija
Academic title:	Assistant Professor
Name of the institution where the teacher works full time and starting date:	Faculty of Technical Sciences - Novi Sad
	01.09.2009
Scientific or art field:	Gas and Petroleum Technics

Academic carieer	Year	Institution	Field
Academic title election:	2009	Faculty of Technical Sciences - Novi Sad	Gas and Petroleum Technics
PhD thesis	2004	Essex university - Nepoznato	Technological Engineering
Bachelor's thesis	1997	Faculty of Technology and Metallurgy - Beograd	Technological Engineering
Magister thesis	-		Technological Engineering

List of courses being held by the teacher in the accredited study programmes

	ID	Course name	Study programme name, study type
1.	M3451	Natural Gas and Oil Preparation Equipment	(M30) Energy and Process Engineering, Undergraduate Academic Studies (ZC0) Clean Energy Technologies, Undergraduate Academic Studies
2.	M3507	Combustion Technology	(ZC0) Clean Energy Technologies, Undergraduate Academic Studies
3.	M3201	Fuels and lubricants	(M30) Energy and Process Engineering, Undergraduate Academic Studies
4.	M3507	Combustion technology	(M30) Energy and Process Engineering, Undergraduate Academic Studies
5.	M3555	Bioenergy Fuels and Alternative Processes	(ZC0) Clean Energy Technologies, Master Academic Studies
6.	M3512	Combustion	(M30) Energy and Process Engineering, Master Academic Studies
7.	M3514	Engineering application programmes	(M30) Energy and Process Engineering, Master Academic Studies
8.	M3555	Bioenergy Fuels and Alternative Processes	(M30) Energy and Process Engineering, Master Academic Studies
9.	DM313	Process Kinetics	(M00) Mechanical Engineering, Doctoral Academic Studies

Representative refferences (minimum 5, not more than 10)

1.	Boodhoo K., Cartwright C., Vićević M., Prieto M., Tortajada M.: Development of a Higee bioreactor (HBR) for production of polyhydroxyalkanoate: Hydrodynamics, gas–liquid mass transfer and fermentation studies, CHEMICAL ENGINEERING AND PROCESSING, 2010, Vol. 49, No 7, pp. 748-758, ISSN 0255-2701
2.	Vićević M., Novaković K., Boodhoo K., Morris J.: Kinetics of Styrene Free Radical Polymerisation in the Spinning Disc Reactor , Chem. Eng. J., 2008, Vol. 135, No 1-2, pp. 78-82, ISSN 1385-8947
3.	Boodhoo K., Vićević M., Boodhoo C., Ndlovu T., Toogood E.: Intensification of gas–liquid mass transfer using a rotating bed of porous packings for application to an E. coli batch fermentation process, Chem. Eng. J., 2008, Vol. 135, No 1-2, pp. 141-150, ISSN 1385-8947
4.	Vićević M., Boodhoo K., Scott K.: Catalytic Isomerisation of alpha-pinene oxide to campholenic aldehyde using silica supported zinc triflate catalysts: II. Performance of immobilised catalysts in a continuous Spinning Disc Reactor, Chem. Eng. J., 2007, Vol. 133, pp. 43-57, ISSN 1385-8947
5.	Vićević M., Boodhoo K., Scott K.: Catalytic isomerisation of alpha-pinene oxide to campholenic aldehyde using silica supported zinc triflate catalysts: I. Kinetic and thermodynamic studies , Chem. Eng. J., 2007, Vol. 133, pp. 31-41, ISSN 1385-8947
6.	Boodhoo K., Dunk W., Vićević M., Jachuck R., Sage V., Macquarrie D., Clark J.: Classical cationic polymerization of styrene in a spinning disc reactor using silica-supported BF3 catalyst , Journal of Applied Polymer Science, 2006, Vol. 101, No 1, pp. 8-19
7.	Vićević M., Jachuck R., Scott K., Clark J., Wilson K.: Rearrangement of alpha-pinene oxide using supported catalyst in a spinning disc reactor, Green Chem., 2004, Vol. 6, No 10, pp. 533-537, ISSN 1463-9262
8.	Milojević Z., Navalušić S., Zeljković M., Vićević M., Beju L.: Haptic interaction program systems development as a part of virtual environment, Academic Journal of Manufacturing Engineering – AJME, 2011, Vol. 9, No 2/2011, pp. 61-66, ISSN 1583-7904
9.	Milojević Z., Navalušić S., Zeljković M., Vićević M., Beju L.: EXAMPLES OF DEVELOPMENT OF PROGRAM SYSTEMS WITH HAPTIC INTERACTION, 5. International Conference on Manufacturing Science and Education - MSE, Sibiu, 2-5 Jun, 2011
10.	Vićević M., Novaković K., Boodhoo K., Morris J.: Autori: M. Vicevic, K. Novakovic, K.V.K. Boodhoo and J. Morris Naziv: Kinetics of Styrene Free Radical Polymerisation in the Spinning Disc Reactor Naziv skupa: Process Intensification and Innovation Process (PI)2 Conference II, Christchurch, New Zealand

Summary data for teacher's scientific or art and professional activity:

Quotation total :	14

Total of SCI(SSCI) list papers :	7			
Current projects :	Domestic :	1	International :	0

Standard 10. Organizational and Material Resources

To perform a study programme, the adequate human, spatial, technical and technological, library and other resources suitable to the study programme features and predicted students` number are to be provided. Lectures at this study programme is realized in two shifts, so the required minimum of space 2m2 per student is met.

There is also an adequate equipment of all courses with the appropriate textbook literature, devices and supplementary equipment available on time and in a sufficient number for normal performance of the teaching process. Likewise, the Faculty of Technical Sciences has its own library, with well equipped and for this study programme adequate library funds. The adequate information technology is also available for performing the study programme.

Standard 11. Quality Control

The quality control of the study programme is performed regularly and systematically through self-evaluation and external quality control.
The quality control process comprises the continual monitoring of the quality of lecturing and the quality of resources necessary for the successful efficiency of undergraduate studies. Quality control bodies are the following: Board for Quality and Self-Evaluation, Committee for Quality and Committee for Undergraduate Studies Quality with undergraduate studies study programme executives-in-charge.
The study programme quality is evaluated on the basis of lecturers` competence, students` participation and involvement in scientific and research projects, resource wealth (contemporariness of equipment, contemporariness of available literature in libraries and bases), and the number of scientific publications realized during studies.
During the quality control of a study programme, the active role of students and their evaluation of the programme quality are also provided.