

**REPUBLIC OF NORTH MACEDONIA** 

"Ss. CYRIL AND METHODIUS" UNIVERSITY IN SKOPJE FACULTY OF MECHANICAL ENGINEERING - SKOPJE



# AN ELABORATE

## FOR ACCREDITATION OF STUDY PROGRAM, SECOND CYCLE OF UNIVERSITY ACADEMIC STUDIES (ONE-YEAR STUDIES)

## STUDY PROGRAM

## "SUSTAINABLE ENERGY AND ENVIRONMENT"

## "ОДРЖЛИВА ЕНЕРГЕТИКА И ЕКОЛОГИЈА"

## NOMINATING INSTITUTION

## "Ss. CYRIL AND METHODIUS" UNIVERSITY IN SKOPJE FACULTY OF MECHANICAL ENGINEERING - SKOPJE

SKOPJE, AUGUST 2019

#### **TABLE OF CONTENT**

#### **REFERENCED LEGAL PROVISIONS** 4

## 1. HIGHER EDUCATION INSTITUTION MAP 5

1a. General classification descriptors for one-year university studies of second cycle comprising 60 ECTS, organised by the Faculty of Mechanical Engineering – Skopje, pursuant to the Decree on the National Framework for Higher Education Qualifications 8

1b. Specific qualification descriptors determining the learning outcomes for second cycle oneyear university academic studies 9

- Decision on adopting the study programmes by the Scientific and Educational Council of the Faculty (Faculty of Mechanical Engineering - Skopje), the Educational Council of the autonomous higher vocational school or the Scientific Council of the scientific institution 10
- 3. Decision on adopting the study programme by the Rector's Board, the University Senate, or the Council of the scientific Institution 10
- 4. Scientific and research area, field and domain of the study programme 10
- 5. Type of study programme (academic or vocational studies) 11
- 6. Degree of education (first or second cycle) 11
- 7. Objectives and rationale for the Virtual manufacturing engineering study programme 11
- 8. Duration of the study programme expressed in years and semesters 11
- 9. ECTS credits obtained by the student 12
- Manner of financing, and for private higher education and scientific institutions also a proof of secured a quality financial guarantee for the study programme 12
- 11. Enrollment requirements 12
- 12. Information on continuation of education 12
- Determined ratio between compulsory and elective courses with a list of compulsory courses, list of elective courses, and defined manner of choosing courses 12
- 14. Information on the premises foreseen for realization of the study programme 14
- 15. List of equipment foreseen for implementation of the study programme 14
- Course programmes, including information related to Article 4 of the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 25/2011) and the Rulebook on Changes and Amendments of the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 154/2011) 17
- 17. List of the teaching staff, including the data stated in Article 5 of the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 25/2011) and the Rulebook on Changes and Amendments of the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 154/2011) 43
- Statement by the teaching staff members on providing consent to participate in the instruction in the frames of certain courses of the study programme
   94
- Approval from the higher education institution for the participation of the teaching staff member in the realisation of the study programme
   94
- 20. Information on the number of students to be enrolled in the first year of the study programme 94
- 21. Information on the provided compulsory and additional literature **95**

- 22. Information on the web-site **95**
- 23. Professional or scientific title awarded to students upon completion of the study programme 95
- 24. Activities and mechanisms for developing and maintaining teaching quality 95

24.1 Study programme teaching methods **95** 

- 24.2 Methods of evaluation 96
- 24.3 Activities and mechanisms for developing and maintaining the quality of the study programme 96
- 24.4 Results of the performed self-evaluation according to the Guidelines on the Common Basis for Evaluation and Evaluation Procedures of Universities adopted by the Agency for Evaluation of Higher Education in the Republic of North Macedonia and the Inter-University Conference of the Republic of North Macedonia (Skopje-Bitola, September 2002). 97

ANNEX 1 Decision for adopting the study program by the Academic Council of Scientific unit (Faculty of Mechanical engineering – Skopje **at the end of the Elaborate** 

ANNEX 2 Decision for adopting the study program from Rector's Office or the University Senate Council or the Council of scientific institution **at the end of the Elaborate** 

ANNEX 3 Teachers statement of consent for participation in teaching specific subjects of the study program **at the end of the Elaborate** 

ANNEX 4 Consent from the higher educational institution for teacher participation in the realization of the study program **at the end of the Elaborate** 

ANNEX 5 Diploma supplement at the end of the Elaborate

Proposed by: Facult	tv's Board	Adopted by:	Educational-scie	entific Council
I Toposcu Dy. Paculi	y S Duaru	muopicu by.	L'uucational-sch	mune counch

## **REFERENCED LEGAL PROVISIONS**

The Accreditation Elaborate for Sustainable Energy and Environment study programme of second cycle was developed pursuant to the provisions of:

- the Law on Higher Education ("Official Gazette of the Republic of Macedonia" No. 82/2018),
- the Rulebook on the Organisation, Operation, Manner of Decision Making, Methodology for Accreditation and Evaluation, Standards for Accreditation and Evaluation and other issues related to the work of the Board for Accreditation of Higher Education ("Official Gazette of the Republic of Macedonia" No. 151/2012),
- the Decree on the Norms and Standards for Establishing Higher Education Institutions and Performing Higher Education Activities ("Official Gazette of Republic of Macedonia" No. 103/2010 and 168/2010, Appendix 1 – Classification of Scientific and Research Fields in Accordance with the Frascati Classification),
- the Law on the National Qualifications Framework ("Official Gazette of the Republic of Macedonia" No. 137/2013 and 30/2016),
- the Decree on the National Framework for Higher Education Qualifications ("Official Gazette of the Republic of Macedonia" No. 154/2010),
- the Rulebook on the Requirements, Criteria, and Regulations for Enrolment and Studying at the First and Second Cycle of University Studies ("University Herald" No. 254/2013),
- the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 25/2011 and 154/2011),
- the Rulebook on the Content and the Form of the Diploma, Guidelines for Preparation of the Diploma Supplement and Other Public Documents ("Official Gazette of the Republic of Macedonia" No. 102/2018).

Additional document consulted:

- Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), (2015). Brussels, Belgium.
- General Criteria for the Accreditation of Degree Programmes, ASIIN e.V.- Accreditation Agency for Degree Programmes in Engineering, Informatics/Computer Science, the Natural Sciences and Mathematics, 2015.
- Subject Specific Criteria for the Accreditation of Degree Programmes for Mechanical Engineering and Process Engineering, ASIIN e.V.- Accreditation Agency for Degree Programmes in Engineering, Informatics/Computer Science, the Natural Sciences and Mathematics, 2011.
- Assessment of Higher Education Learning Outcomes (AHELO), Organisation for Economic Co- operation and Development (OECD), 2009.
- International Standard Classification of Education: Fields of Education and Training 2013 (UNESCO).

# 1. HIGHER EDUCATION INSTITUTION MAP

Name of the high education	"Ss. Cyril and Methodius" University in Skopje		
institution	Faculty of Mechanical Engineering - Skopje		
Address	P.O.Box 464, 1000 Skopie		
Web page	http://www.mf.ukim.edu.mk/		
Type of the high education	University / Faculty		
institution (nublic private-			
nublic non-profit private non-			
profit private profit)			
Data for the founder (private	National assembly of Republic of North Macadonia		
higher education institution)	National assembly of Republic of North Maccuolia		
Data for the last accreditation	First evels year 2017		
Data for the last accreditation	First cycle – year 2017 Second cycle – ycar 2018		
	Second cycle – year 2010 Third cycle – year 2018		
Study and passarah areas for	Pagaarah fialda:		
Study and research areas for	Research helds: Machinery Energy Industrial Engineering and Management		
which accreditation has been	Quality Control Materials Environment Transport Transportation		
obtained	Construction and Water Management Regulation and management		
	of technological processes		
	Scientific research area:		
	Technical and Technological Sciences		
Faculty in the higher education	Faculty at "Ss. Cyril and Methodius" University in Skopje		
institution	28 members (23 faculties and 5 institutes)		
Study programs that are	First cycle:		
realized in the unit who requires	Four years academic study programs (240 ECTS):		
extension of the activity by	Production Engineering		
introducing new study program	Transport, Mechanization and Logistics		
	Hydraulic Energy Engineering		
	Thermal Engineering		
	Processes and inovations		
	Motor Vahiolos		
	Energy and environment		
	Mechatronics		
	Automation and Control Systems		
	Industrial design		
	Second cycle:		
	a)Study program for one year Master studies:		
	Automation and fluid engineering		
	Solid mechanics and mechanical systems		
	Energy and ecology		
	Modeling and simulation of plastic deformation technologies and		
	processes Industrial design and marketing		
	Motor vehicles		
	Industrial engineering and management		
	LEAN management		
	Industrial design		
	Materials, welding and structural engineering		
	Thermal engineering		
	Transport, mechanisation and logistics		
	Advanced manufacturing systems and technologies		
	Virtual manufacturing engineering		

	Mecha	tronics			
	Work	Safety			
	Sustai	nable energy and e	environment		
	Product lifecycle management				
	Management and Quality Control				
	b) Name of the study program for two year Master studies: Industrial design and marketing				
	Management and Quality Control				
	Third cycle: Study program in Mechanical Engineering				
	Study	program in Indust	rial engineerin	g and Manag	ement
Data for international	The Fa	aculty of Mechanic	cal Engineerin	g has internat	ional
cooperation in the field of	cooper	ation in the field o	of teaching, res	search and stu	dent mobility
teaching, research and student	within	the CEEPUS mot	oility program	of teaching a	nd student staff,
mobility	Erasm	us and Erasmus +	program (sign	ed several ag	reements with
	foreign	n universities, info	rmation availa	ble at http:	
	//www	ukim.edu.mk/dok/	cumenti_m/43	1_Erazmus+9	620dogovori.doc
	) and $\overline{a}$	other agreements o	n international	l cooperation.	
Information about area for	1. Tota	al area (gross area)	)		
teaching and research		e for teaching and $\mathbf{n}^2$	yard)		
	2 Tot	<b>μ</b> al teaching area (n	et snace)		
	2.100	$4840 \text{ m}^2$	et space)		
	3. Nu	mber of lecture the	eaters with tota	al number of o	chairs
	lecture theaters with total number of chairs 480				
	4. Number of classrooms with total number of chairs				
	24 clas	ssrooms with total	number of cha	airs 1111	
	no.	Types of	Number of	Area in	n Total
		didactic space	premises	square	seating
		numeration		metres	capacity
	1.	Lecture	2	426	480
		theaters			
		AMF	1	228	300
		225	1	198	180
	2.	Classrooms	25	1628,8	1113
		123		87	56
		124	1	8/	04
		123	1	13	40
		310	1	127	88
		310	1	76	48
		A1-1	1	88	88
		A1-2 left	1	38	38
		A1-2 right	1	43	28
		A1-3	1	43	28
		A1-5	1	43	28
		F1-2	1	54,5	22
		F2-4	1	60,4	32
		F2-5	1	42,3	18
		F2-6	1	53,3	22
		К2-6	1	44,7	28
		К2-7	1	44,7	25
		<b>TAA A -</b>		–	• •
		К2-15	1	44,7	20

		КЗ-1	1	55,1	36
		КЗ-18	1	55,1	36
Information about the equipment for teaching and	1. Nu workp	mber of classrooms blaces	with compute	er and capac	ity of computer
research		10 class	srooms with to	tal 274 work	places
	no.	Types of didactic	Number of	Area i	n Total
		space	premises	square	seating
		numeration	10	metres	capacity
	1	Computer	10	391	274
		Room 200	1	75	25
		Room 312	1	75	25
		Web Lab	1	15	2.5
		Computer center 1	1	79	30
		Computer center 2	1	84	44
		Room K1-2	1	47,4	24
		Room K1-3	1	47,4	24
		Room K2-8	1	48,3	40
		Room K3-18 Idea lab	1	44,7	12
		Room F1-1	1	35	22
		Room A1-4	1	43	28
	2. Nur 3. Equ Eq	mber of laboratories uipment for perform uipment value	for practical to	eaching cation activit 13.829.470,	21 ies 00 MKD
Number of students that a accreditation is obtained for	Num 450	ber of students			
Number of students (enrolled for the first time)	Num 209	ber of regular stu	dents on pos	tgraduate s	studies
Number of staff in teaching and	Struct	ure of the teaching s	staff in teachin	g science, res	search, teaching
research, scientific and teaching	and as	ssociate titles		-	-
positions		Full professor		36	
•		Associate profess	or	9	
	<u>C</u> .	Assistant professo	or	10	1 / 1' '
Number of staff with assistant	Struct	ure of associates aft	er teaching sci	ence, researc	ch, teaching and
positions	associ	ate titles		10	
		Research assista	nt	7	
Teacher:students ratio (number	209/5	$5 \approx 4$			
of students per teacher) for each	450/5	$5 \approx 8$			
unit separately					
Internal mechanisms that	•	Development of te	aching conten	ts	
ensure anglity control for the		Completion of the	teaching proc		
studios		Evaluation of stud	ents	600	
SIUUICS		Evaluation of stud	UIIIS		

	• Graduation paper,			
	• Rating the quality of teaching by students with surveys at the			
	end of each semester for each subject,			
	• Evaluate the quality of the study program by the students in			
	the award of the diploma and			
	• Other procedures relating to resources and logistics of the			
	teaching process.			
	• Report for the monitoring of the educational process of the			
	Faculty of Mechanical Engineering in Skopje, academic year			
	2013/2014			
	( <u>http://www.mf.edu.mk/sites/default/files/files/IZVESHTAJ</u>			
	<u>%202a%20samoevaluacija%20na%20NFS%202015.pdf</u> )			
Frequency of self-evaluation	in order to provide conditions for continuous			
process (every year, two years,	improvement of the quality of teaching (educational			
three years)	process) it is provided a self-evaluation in every three			
	years.			
Data of last conducted external	Report for the subsequent evaluation of Ss Cyril and			
evaluation of the institution	Methodius University in Skopje for the 2006-07 period to			
	the 2009-10 year. Issued by the European University			
	Association, 2011 and 2014.			
Other information that the				
institution wants to specify as an				
argument for its success				

1a. General classification descriptors for one-year university studies of second cycle comprising 60 ECTS, organised by the Faculty of Mechanical Engineering – Skopje, pursuant to the Decree on the National Framework for Higher Education Qualifications.

Level in the National Frame	work	Higher Education Level in the Euro	
for Higher Education			Framework for Higher
Qualifications			Education Qualifications
VIIA		Second cycle of university, academic Master studies, one-year studies, 60 ECTS	7
Knowledge and	Demo	onstrates knowledge and understandi	ng in the scientific and
understanding	resean engin traffic mana acqui of t persp metho Demo study the sc	rch fields of mechanical engineering, po- eering and management, quality contro- e and transport, civil and water ma- gement of technological processes, or gement, which build upon the previor red in the first cycle of studies, includin heoretical, practical, conceptual, c ectives in the scientific fields and bodology. onstrates understanding of the relevant fi of the second cycle and knowledge of the ientific research and new sources of knowledge.	ower engineering, industrial ol, materials, environment, nagement, regulation and rganisational sciences and ous education and training g knowledge in the domain omparative, and critical areas using appropriate elds that are subject of the ne current issues related to owledge.

Applying knowledge and understanding	Is able to apply the acquired knowledge and understanding to the field of the subject of the study programmes demonstrating an in-depth, professional, and competent approach to solving tasks at work or in the profession. Demonstrates competencies for identification, analysis, and problem solving in the scientific subject areas from the second cycle of studies. Is capable of finding and supporting arguments within the study field of the second cycle of studies.
Making judgments	Possesses the ability to collect, analyse, evaluate, and present information, ideas, and concepts in the frames of the conducted scientific and research activities, using relevant data. Is able to make appropriate assessments taking into account personal, social, scientific and research, developmental, and ethical aspects. Is able to evaluate theoretical and practical issues, to formulate opinion and provide explanation of the causes that give rise to certain phenomena and to choose an appropriate solution.
Communication skills	Is able to establish contacts, develop arguments and discuss with both specialist and non-specialist audience on issues and about information, ideas, problems, tasks, and solutions when the criteria for decision making and the scope of the task are clearly defined. Takes over a divided, separate responsibility for issues arising from teamwork and related to collective results. Is capable to participate independently in specific, scientific, and interdisciplinary discussions while demonstrating a professional and comprehensive approach.
Learning skills	Takes initiative to identify the needs for acquiring further knowledge and learning with a high degree of autonomy.

1b. Specific qualification descriptors determining the learning outcomes for second cycle oneyear university academic studies comprising 60 ECTS, Sustainable Energy and Environment (SEE) study programme, pursuant to the Decree on the National Framework for Higher Education Qualifications

Knowledge and	Shows the thorough knowledge and understanding in scientific research fields and				
understanding	areas acquired in the second cycle and relate to:				
	• Knowledge of energy sources, ways of transformation and its efficient use				
	Operation and maintenance of power plants				
	• Regulations and testing of machines and power plants				
	• Technical control, supervision and inspection during the construction of				
	power plants and systems				
	• Development of expert reports on energy machinery and equipment				
	Knowledge of techniques, rules and measures to protect the environment				

Applying knowledge and understanding	Is capable of studying tasks that are subject to analysis as a complex, demonstrating elements of discernment, and can apply the knowledge and understanding in a manner indicating a professional approach to the job or the profession. Demonstrates competencies for identification, analysis, and problem solving in the relevant scientific areas studied in the second cycle of studies. Is capable of finding and supporting arguments within the field and areas of study.
Making judgments	Possesses the ability to collect, analyse, evaluate, and present information, ideas, and concepts using relevant data. Makes appropriate assessments taking into account personal, social, scientific and ethical aspects. Is able to evaluate theoretical and practical issues from the area of Sustainable Energy and Environment, to provide well-supported explanations of the causes of certain phenomena, to explain the laws behind them, and to choose an appropriate solution.
Communication skills	Develops the ability to establish communication and to discuss with both specialist and non-specialist audience about information, ideas, problems, and solutions when the decision criteria and the scope of the task are clearly defined. Takes a divided, separate responsibility for collective results. Is capable to participate independently, taking a professional approach, in specific, scientific, and interdisciplinary discussions.
Learning skills	Undertakes initiative to identify the needs for acquiring further knowledge and learning with a high degree of autonomy, i.e. the student evaluates the need for continuous enhancement of their knowledge and skills.

2. Decision on adopting the study programmes by the Scientific and Educational Council of the Faculty (Faculty of Mechanical Engineering - Skopje), the Educational Council of the autonomous higher vocational school or the Scientific Council of the scientific institution.

The Decision is enclosed as Appendix 1 near at the end of the Elaborate.

**3.** Decision on adopting the study programme by the Rector's Board, the University Senate, or the Council of the scientific Institution

The Decision is attached as Appendix 2 near the end of the Elaborate.

4. Scientific and research area, field and domain of the study programme

## Study programme: Sustainable Energy and Environment

Scientific and research	Technical and technological sciences
area	
~	
Scientific and research	Mechanical Engineering, Energy, Environment
Scientific and research field	Mechanical Engineering, Energy, Environment

Scientific and research	Branches of the stated research fields in accordance with the subjects
branch	covered by the study programme, as well as the areas that correspond with
	the subjects studied in the study programme that belong to the scientific
	and research fields that are not listed.

#### 5. Type of study programme (academic or vocational studies)

Sustainable Energy and Environment study programme, organised by the Faculty of Mechanical Engineering - Skopje is an academic university study programme.

#### 6. Degree of education (first or second cycle)

Sustainable Energy and Environment study programme at the Faculty of Mechanical Engineering - Skopje is an academic university study programme of second cycle, organised as a year-long programme of 60 ECTS.

#### 7. Objectives and rationale for the Sustainable Energy and Environment study programme

The Faculty of Mechanical Engineering of the Ss. Cyril and Methodius University in Skopje is the leading institution in educating mechanical engineers in this country. In order to satisfy the requirements deriving from foreign investors, but also from domestic manufacturing companies, it is needed constantly educating personnel who have new interdisciplinary knowledge, and successfully responding to global trends. The Institute of Thermal technology and thermal power and the Institute for Hydraulic Engineering and Automation at the Faculty of Mechanical Engineering in Skopje, suggests study program which results from the previously derived comprehensive analysis and identification of needs and employment opportunities for university graduates in: Research and optimization of energy systems and installations, management of energy facilities and systems, energy management systems and systems design, construction and operation of power plants, design and construction of thermal machines and plants, technical inspection and control of the design and construction of energy plants and systems, protection of environment. Recognizing the basic profile competencies and acquired qualifications, this study program justifies expectations for analysis, exploration of energy sources, ways of transformation and its efficient use, design and construction of thermal machines and facilities, design and construction of hydropower and hydro-technical installations and machinery, management and exploitation of thermal and hydraulic plants and systems, regulations and testing of thermal and hydraulic machines and plants, technical control and inspection during construction of thermal and hydraulic plants and systems, expertise in the field of thermal and hydraulic machines and plants, regulations and measures to protect the environment.

Another very important fact of such a study program in English are the provisions of the Law for Higher education which stipulates the minimum necessary study programs at higher education institution.

The abovementioned reasons give rise to the basic elements of the social justification and benefits from this study programme, as well as its sustainability in the future.

#### 8. Duration of the study programme expressed in years and semesters

The Sustainable Energy and Environment study programme is implemented in one year, two semesters, in accordance with the 4+1 model.

#### 9. ECTS credits obtained by the student

By completion of one-year long university studies of second cycle in Sustainable Energy and Environment study programme organised by the Faculty of Mechanical Engineering – Skopje, the student acquires 60 ECTS credits.

# **10.** Financing, and for private higher education and scientific institutions also a proof of secured a quality financial guarantee for the study programme

The expenses for conducting the graduate studies in **Sustainable Energy and Environment** study programme will be covered by the students in the form of self-financing or co-financing. The sum, the manner of payment, as well as all the other requirements are regulated by the Rulebook on the Requirements, Criteria, and Regulations for Enrolment and Studying at the First and Second Cycle of University Studies of the Ss. Cyril and Methodius University in Skopje. In case of future participation in financing by the State, the amount of participation shall be taken into account in defining the amount for co-financing.

The expenses for conducting the graduate studies for students who are not citizens of Republic of North Macedonia is dubled then the expenses for the students who are citizens of Republic of North Macedonia,

#### 11. Enrollment requirements

The right to be enrolled in this study program belongs to candidates with completed university academic studies with acquired 240 ECTS, or candidates with completed undergraduate studies pursuant to the Law on Higher Education in force prior to implementation of ECTS system pursuant to the Bologna Declaration.

Enrollment of students in all the study programmes of the studies of second cycle shall be done pursuant to the provisions of the 'Call for Enrollment of Students at Studies of Second Cycle at the Ss. Cyril and Methodius University in Skopje'. The Educational and Scientific Committee of the study programme shall be deciding on the fulfillment of the criteria of compatibility of the previous education with the study programme.

Students who are not citizens of Republic of North Macedonia should submit documents for nostrification of their diploma for undergraduate studies from the Ministry of education and science of Republic of North Macedonia.

#### 12. Information on continuation of education

After completing university studies of second cycle, **Sustainable Energy and Environment** study programme at the Faculty of Mechanical Engineering – Skopje, the students can continue their education at third cycle of studies.

# 13. Determined ratio between compulsory and elective courses with a list of compulsory courses, list of elective courses, and defined manner of choosing courses

**Sustainable Energy and Environment** study programme of university academic studies of second cycle is organised as full-time one-year (two semesters) studies. The study programme represents a continuation – enhancement of knowledge acquired in the first cycle of university academic studies of 4-year duration. These one-year university studies of second cycle encompass a certain number of subject programmes (courses) which are expressed in a number of credits defined in the course programmes.

The structure of the **Sustainable Energy and Environment** study programme, one-year academic university studies of second cycle, is presented in Table 1, and the ratio between the compulsory and elective courses are presented in Table 2.

Ta	able 1.			
Ord.	Courses	ECTS	Winter	Summer
no.			semester	semester
1.	Selected Topics in Mathematics and Informatics	6	6	
2.	Modeling and Simulations of Energy Systems	6	6	
3.	Advanced Course in Energy Transformation	6	6	
4.	Basic Elective Course	6	6	
5.	Basic Elective Course	6	6	
6.	Experts in Teamwork	6		6
7.	Specific Elective Course	6		6
8.	Master's Thesis	18		18
	Total credits	60	30	30

### Table 2.

Ord. no.	Study programme	Duration of studies (years)/ ECTS	Total Number/ ECTS Percentage	Number/ Percentage of the compulsory courses in ECTS	Number/ Percentage of elective courses in ECTS
1	Sustainable Energy and Environment	1 year/ 60 ECTS	60 /100%	42 / 70%	18 / 30%

The programme subjects for the compulsory courses, basic elective courses and specific elective courses are presented in Table 3, Table 4 and Table 5, respectively.

Ord.	Code	Course	ECTS	Year /
no.				Semester
1.	20MI01	Selected Topics in Mathematics and Informatics	6	I/winter
2.	2EE05	Modeling and Simulations of Energy Systems	6	I/winter
3.	2SEE01	Advanced Course in Energy Transformation	6	I/winter
4.	2SEE02	Experts in Teamwork	6	I/ summer

## Table 3. Compulsory Courses

#### Table 4. Basic Elective Courses

Ord.	Code	Course	ECTS	Year /
no.				Semester
1.	2SEE03	Modern Thermal Plants	6	I/winter
2.	2SEE04	Advanced thermodynamics – selected chapters	6	I/winter
3.	2SEE05	Transport and the environment	6	I/winter
4.	2SEE06	Fluid mechanics in environmental engineering	6	I/winter
5.	2SEE07	Environmental measurement methods and monitoring systems	6	I/winter
6.	2SEE08	Environmental systems analysis	6	I/winter
7.	2SEE09	An introduction to eco-innovations	6	I/winter

Ord.	Code	Course	ECTS	Year /
no.				Semester
1.	2SEE10	Non-conventional power plants	6	I/summer
2.	2SEE11	Water and waste water treatment	6	I/summer
3.	2SEE12	Energy efficiency	6	I/summer
4.	2SEE13	Eco-engines	6	I/summer
5.	2SEE14	Design of fluid conveying and hydro power system	6	I/summer
6.	2SEE15	Waste management	6	I/summer
7.	2SEE16	Energy vs. sustainable development: Concepts and aspects	6	I/summer
8.	2SEE17	Automation of environmental processes	6	I/summer
9.	2SEE18	Clean fossil and alternative fuels energy	6	I/summer

Table 5. Specific Elective Courses

Regarding the elective courses, the student is allowed to choose courses offered by other accredited university studies which are 6 ECTS worth.

Students are allowed to attend and take examination for up to two courses offered by one same professor.

Compliant to the provision of Article 139 Paragraph 10 of the Law on Higher Education courses are delivered in English.

#### 14. Information on the premises foreseen for realization of the study programme

The graduate studies are organised as full-time studies with instruction.

The Faculty of Mechanical Engineering has on disposal sufficient special capacity for realisation of the educational process on the first, second, and third cycle of studies, noted in the Higher Education Institution Map.

The practical part of teaching is mostly performed in the laboratories of the Faculty of Mechanical Engineering, which are also listed in the Map of Higher Education Institution.

The course program envisages clinical teaching as well as recommended in the legislation, which is carried out in the workplace, the economy or the faculty by hiring prominent experts from practice.

### **15.** List of equipment foreseen for implementation of the study programme

The Faculty of Mechanical Engineering – Skopje has got the following pieces of equipment at its disposal for instruction:

- Hydraulic system for measurements of small turbine;
- System for laboratory tests of fluidized bed combustion (defining the flow and the temperature in the combustion of solid fuels in fluidized bed);
- System for testing turbopumps, model turbines, and pipeline armature (the system is composed of three-chamber reservoir, electric motor driven pump, vacuum pump, compressor, compressed air reservoir);
- Machines from the field of pneumatics, electro-pneumatics, hydraulics, electro-hydraulics, proportional hydraulics and application of computers in programmable memory control;
- Measuring Amplifier instrument for dynamical measurements HBM KWS/6A-5;
- Measuring Amplifier instrument for dynamical measurements HBM type KWS 673.D4. ;

- Multi-channel measurement instrument HBM type 3835A (6 x UM3301A);
- Instrumentation Data Acquisition Tape Recorder HP 3964A and HP 3968A;
- Two-channel Oscilloscope HBM type H2B.13A;
- Spectrum Analyzer HP 3582A;
- Six-channel electronic writer RIKADENKI type R65 with RS232 interface;
- Two-coordinate electronic writer HP type 7015B;
- Set for application of measure gauges HBM- DAK2;
- Measuring amplifier for no contact measure of torque HBM-BLM;
- Five-channel measure amplifier- acquisition system DMC- SHARP;
- PC computer with built-in A/D (D/A) cards NATIONAL INSTRUMENTS type AT -MIO-16;
- Interfaces for online signal processing and equipment control;
- XS Plotter ROLLAND- DXS.880;
- Six-channel measuring amplifier instrument for static and quasi static measurements HBM-UPM60;
- Junction box HBM-BT21 93;
- Strain gauges for tensometric testing (HBM и PHILIPS) of different types;
- Inductive transducers for displacement HBM type W20 (1), W50 (2) and W100 (4);
- Inductive transducer for acceleration HBM type B12 (8);
- Transmission system transducer registering pressure force;
- Fluid pressure transducer HBM type P11/10; P1/200;
- Force transducers HBM type 36X2/1t, 312/50 и 312/200;
- Press for inflicting force MF1;
- Transducers (of different types) for temperature measurement;
- Tensometric transducers for measuring torque;
- Collector rings and brushes HBM;
- Device for measuring the thickness of metal walls (metal sheets);
- Apparatuses and systems for determining physical and chemical characteristics of fuels, lubricantion olis, and water;
- Device for examination of surface cracks;
- Equipment for dimensional measurement, control of length and angular characteristics, quality of surface, mass and other controls;
- Devices for examination of harmful substances in exhaust gasses;
- Etalon gasses for comparison and control of gas analyzers;
- Tachometer (RPM gauge) ISKRA;
- Weighing scales with weight range 50 to 10,000 kg.;
- Aggregate HONDA 800 for charging the measure instruments when dynamic testing of vehicles are performed;
- Computers (DIGITAL, XP, PC), used as servers, graphics and autonomous workstations;
- Instruments and devices for vibration measurements (vibration analyser, vibrometer, calibration vibrator etc.)
- Devices for measurement of noise (noise analyser, filter, microphones and other aids)
- Testing stands for protective equipment and shelters (shock wave simulators, flow rate measurements with micromanometers);

- Device for measuring relative humidity and speed;
- Chamber for air conditioning on a certain temperature and relative humidity;
- Chamber of examination and testing of thermal devices;
- Instruments for measuring heat;
- Instructional cooling aggregate "Graco" with measurement and regulation devices for thermoenergetic balancing
- Cooling calorimetric aggregates as teaching resourse and for balancing;
- Forced draught cooling tower with water system, lamellate heat exchanger for water cooling for the air conditioning chamber and thermal testing;
- Heat pump model plant;
- "Vaporax" steam boiler for fast steam production and burners;
- Device for chemical preparation of water, supply reservoir, etc.;
- Instruments for exhaust gases analysis;
- Motor octane number determining (IT9-2M) using the motor method;
- Professional Software ADAMS, CAD, FLUENT, LAB WINDOWS Ideas, Nisa, Algor, Delphi, Matlab, CATIA, SOLID, SIEMENS (NX, Technomatix, Teamcenter, ...), Solidworks, Autodesk Inventor, ArtCAM, X3 Medical V6, RapidWorks and other;
- Hand-held devices for water quality measuring Eureka Environmental Manta Multiprobe Logger3.0, Cond Graphite, 4 electrode, Amphibian Display Package;
- Ultrasonic flowmeter EESIFLO PORTALOK 7S;
- Hiperspectral process photometer spectro::lyser:
- Data acquisition system con::stat industrial process control terminal (900/1800 MHz GSM);
- Laboratory measuring equipment Laboratory Conductivity Meter, Laboratory Oxygen Meter;
- Set for soil testing;
- GPS Global Positioning Unit, One Frequency R3 GPS system (base+rover) with postprocessing software Trimble Recon;
- Zeta-Meter System 3.0+ with Unitron FSB 4X Microscope;
- M-CAM 40 CNC wood processing machine;
- XSensors pressure mapping system;
- NextEngine 3D Scanner;
- Styrocut thermo cutter.

•	Control block, Mitutoyo, type: 515 - 500, No. 009400 Control block, Mitutoyo, type: 515 - 742, No. 022036	Measuring range: 0 - 300 mm, Accuracy: 2.5 µm Measuring range: 0 - 600 mm, Accuracy: 3.5 µm
•	Control ring Ø 10 mm, Mitutoyo, Tip: 177 - 126, No. 881078 Control ring Ø 14 mm, Einst, Kp-01	Nominal diameter: 10 mm, Cylindricity: 1 μm, Nominal diameter: 14 mm, Cylindricity: 1 μm
•	Control stick L= 25 mm, Mitutoyo, No. 167 - 101 Control stick L= 50 mm, Mitutoyo, No.167 - 102	Nominal length: 25 mm, Tolerance: (1+L/50), L in mm Nominal length: 50 mm, Tolerance: (1+L/50), L in mm
•	Control stick L= 75 mm, Mitutoyo, No. 167 - 103 Control stick L = 100 mm, Mitutoyo, No. 167 - 104	Nominal length: 75 mm, Tolerance: (1+L/50), L in mm Nominal length: 100 mm, Tolerance: (1+L/50), L in mm

- Control stick L =125 mm, Mitutoyo, No.167
   105
- Control stick L = 150 mm, Mitutoyo, No. 167 106
- Control ring Ø 50 mm, Einst, Kp-02
- Control glass for flatness testing 12 mm, Mitutoyo, No. 157 – 101
- Set of plane-parallel control glasses for inspection of parallelism (4 pieces) Mitutoyo, No. 157 - 903
- Set of plane-parallel bordering scales (10 pieces), Mitutoyo, Code No: 516 107, Serial No. 219652
- Universal length measuring machine, Carl Zeiss Jena, No. 2492
- Universal length measuring machine, Carl Zeiss Jena, No. 1591
- Universal length measuring machine, SIP, Type: MUL-300, No. 556
- Universal measuring microscope, Carl Zeiss Jena, No. 10344
- Universal measuring microscope, UIM-21, No. 610978
- Granite measuring plate, Hommel dura, No. 11043

Nominal length: 125 mm, Tolerance: (1+L/50), L in mm Nominal length: 150 mm, Tolerance: (1+L/50), L in mm

Nominal diameter: 50 mm, Cylindricity: 1 µm, Thickness: 12 mm Flatness: 0.1 µm Parallelism: 0.2 µm Thickness: 12,00; 12,12; 12,25; 12,37, Flatness: 0.1 µm Parallelism: 0.2 µm Measuring range: 2,5-25,0 mm, Class I (in accordance with DIN 863)

Measuring range: to 600 mm, Resolution: 1  $\mu$ m Measuring range: to 600 mm, Resolution: 1  $\mu$ m Measuring range: to 300 mm, Resolution: 0.5  $\mu$ m With possibility of coil profile measuring Measuring range: 25 x 25 (50 x 150) mm Resolution: 0.01 mm Measuring range:: 100 x 250 mm Resolution: 0.01 mm Dimensions: 1000x630x150 mm, Accuracy class: 1

16. Course programmes, including information related to Article 4 of the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 25/2011) and the Rulebook on Changes and Amendments of the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 154/2011)

Add. 3 Course program for the sec			econd level (second cycle - postgraduate) of studies				
1.	Course title		Selected topics in Mathematics and Informatics				
2.	Code		20MI01				
3.	Study group(	s)	SEE				
4.	The organize	r of the study program (unit,	"Ss. Cyril and Met	hodiı	is" University in Skop	je,	
	institute, depa	artment)	Faculty of Mechanical Engineering - Skopje				
5.	Level (first, s	econd, third degree)	Second				
6.	Academic year	ar / semester	I / winter	7.	ECTS credits	6	
8.	Professor(s)		Prof. dr. Dushan Chakmakov				
			Prof. dr. Aleksa Malcheski				
			Prof. dr. Nikola Tuneski				
			Assoc. prof. dr. En	nilija	Celakoska		

					A	ssoc. prof. dr. Bojan	Prangoski	
9.	Prerequisites for enrolling the course None							
10.	Course	course objectives (competences):						
	Introduc	ction to selected topics in applied mathematics, probability and statistics and selected software for						
11	solving	engine	ering problems.					
11.	Selected	d tonics in linear algebra, numerical methods, ontimization methods, complex analysis						
	probabil	litv and	statistics with emphasis or	n solvir	ng	technical problems.	Using specific pro-	gramming
	techniqu	ues, sof	tware and basics of organiz	ing da	ta	and intelligent system	ms.	6 6
12.	Study m	nethods	: lectures, lab, project assig	nment	<b>s</b> , :	individual assignmer	nts, self-study.	
13.	Total ho	ours				6 ECTS x 30 = 180	hours	
14.	Hours a	llocatio	on per activity:			30+30+30+30+60 =	180 hours	
15.	Lectures	s/Lab		15.1.		Lectures (15 weeks	x 2)	30 hours
16	Duciest	<b>XX</b> 1_ / /	A	15.2.		Lab (student work)		30 hours
16.	Project	WOrk/A	Assignments	16.1.		Project assignments		30 hours
				16.2.		Individual assignme	ents	30 hours
				16.3.		Self-study		60 hours
17.	Points/N	Aarks:						
	17.1.	E	Exams					50
	17.2.	P	Projects					40
	17.3.	A	Attendance					10
18.	Grading	g scale		_		Under	50	5 (five) (F)
						$51 - 64 \text{ points} \qquad 6 (\text{six}) ($		
				_		$\begin{array}{c c} 65 - 74 \text{ points} & 7 \text{ (seven)} (\\ \hline 75 - 84 \text{ points} & 8 \text{ (sight)} \end{array}$		
				-		$\begin{array}{c c} \hline 75 - 84 \text{ points} \\ \hline 85 - 94 \text{ points} \\ \hline 9 \hline$		
				F		05 - 94 poi	nts	9 (IIIIe) (B) 10 (top) (A)
19	Prerequi	isites fo	or taking the final exam		95 - 100 points 10 (tell) (A)			
20.	Languas	pe			English			
21	Course	ə- evaluat	ion		St	udent questionnaire		
21.	Tarthaa	1-2				tudent questionnane		
22.		JKS	ation motorials					
	22.1	Instru		I			<b>D</b> 111 1	
		No.	Author			Title	Publisher	Year
		1.	Mendenhal W., Sincich T	<b>`</b> .	St	tatistics for	Maxwell	1992
					E	ngineering and the	Macmillan Int.	
		2	D. Elatabar		50 D	ciences	Ed., New York	2000
		Ζ.	K. Fletcher		PI Or	ractical methods of	and Sons	2000
					<u></u>	- millari Oli		
	22.2	Supp	lemental Instruction Materi	als			1	
		No.	Author			Title	Publisher	Year
		1.	Connolly T., Begg C.		D	atabase systems	Ars Lamina	2010
		2.	Hari V., Rogina M., Singe	er S.	N	umerical analysis	University of Zagreb	2003

Add. 3		Course program for the	second level (second cycle - postgraduate) of studies
1.	Course title		Modeling and Simulations of Energy Systems
2.	Code		2EE05
3.	Study group(s)		SEE
4.	The organizer of	the study program (unit,	"Ss. Cyril and Methodius" University in Skopje,

					19			
	institute, dep	partment)		Faculty of Mechanical Eng	ineering - Skopje			
5.	Level (first,	second, third degree)		Second				
6.	Academic y	ear / semester		I/winter 7. E	CTS credits 6			
8.	Professor(s)			Prof. dr. Done Tashevski				
				Prof. dr. Risto Filkoski				
				Prof. dr. Laze Trajkovski				
				Prof. dr. Atanasko Tuneski Prof. dr. Valantino Stoikov	alzi			
				Prof dr Zoran Markov	SKI			
				Assoc prof dr Dame Dim	itrovski			
				Assoc. prof. dr. Ana Lazare	evska			
				Assoc. prof. dr. Darko Bab	unski			
				Assoc. prof. dr. Emil Zaev				
9.	Prerequisites	s for enrolling the course		None				
10.	Course obje	ctives (competences):						
	Advanced k	nowledge of methods for en	ergy pl	anning and modeling energ	y systems. Advanced level of			
	numerical m	odeling, engineering approa	ich tow	ards modern techniques of	modeling and simulations.			
	training for	creating and using software	applica	ations for design, analysis a	nd solving steady, unsteady			
	and dynamic	systems in the field therma	del engin	eering and energetics.	ot on process, applying suitable			
	techniques f	making a mainematical mo	del OI	ions, analysis and interpret	ation of results, accuracy			
	stability and	reliability of the model	siniurai	nons, analysis and interpret	ation of results, accuracy,			
11	Course cont	ent.						
11.	Introduction	to modeling energy system	s. Num	erical thermal analysis. Ma	thematical modeling of			
	thermal proc	cesses - in general. Approach	h in mo	deling. Basic equations of	dynamic processes and fluid			
	flow. Basic	equations for heat transfer a	nd defy	ning boundary conditions a	and types of boundary			
	conditions. I	Nethod of finite volumes, so	olving o	liscrete equations. Computa	ational domain, geometry and			
	numerical m	esh. Validating mathematic	al mod	els and solutions. Methods	for modeling unsteady			
	processes. N	Iodeling, simulations and op	otimiza	tion of thermal processes an	nd systems using computer			
	tools. Using	software tools for improvin	g energ	gy efficiency. Modeling pro	cesses related to emission and			
	concentratio	n of harmful substances from	m therr	nal processes. Specific func	ctions and models for modeling			
12	Study mothe	esses.	ianma	ate individual assignments	solf study			
12.	Total hours	us. lectures, lab, project ass	igninei	6  FCTS x  30 - 180  hour	sen-study.			
13.	Hours alloca	tion per activity.		30+30+10+10+100 = 18	n hours			
15.	Lectures/La	h	15.1.	Lectures (15 weeks x 2)	30 hours			
10.	Looturos, Lu	0	15.2.	Lab (student work)	30 hours			
16.	Project Wor	k/Assignments	16.1.	Project assignments	10 hours			
			16.2.	Individual assignments	10 hours			
			16.2	0.10 / 1	100			
			16.3.	Self-study	100			
17	Points/Mark	e.			nouis			
17.	17 1	S. Exame			80			
	17.1.	Dailis			80			
	17.2.	Projects			10			
	17.3.	Attendance			10			
18.	Grading scal	le		Under 50	5 (five) (F)			
				51 - 64 points	6 (six) (E)			
				65 - 74 points	7 (seven) (D)			
				75 - 84 points	8 (eight) (C)			
				85 - 94 points	9 (nine) (B)			
				95 - 100 points	10 (ten) (A)			
19.	Prerequisites	s for taking the final exam		Activity 17.2 and 17.3				
20.	Language			English				
21.	Course evalu	uation		Student questionnaire				
	1							

Textbo	Textbooks								
22.1	Instr	Instruction materials							
	No.	Author	Title	Publisher	Year				
	1.	Kitto J. B., Stultz S. C., editors	Steam, its generation and use, 41st Edition	Babcock&Wilcox, a McDermott comp.	2005				
	2.	Baukal C. E. et al.	CFD in Industrial Combustion	CRC Press	2001				
		C. Pozrikidis	Numerical Computation in Science and Engineering	Oxford University Press	1998				
22.2	Supp	Supplemental Instruction Materials							
	No.	Author	Title	Publisher	Year				
	1.	Doty S., Turner W. C.	Energy Management Handbook, 7th Edition	Fairmont press Inc., CRC Press	2009				
	2.	Shepherd W., Shepherd D. W.,	Energy Studies, Second Edition	Imperial College press, London	2005				
	3.	Patankar S. V.	Numerical Heat Transfer and Fluid Flow	Hemisphere Publ. Corp.	1980				

Add	dd. 3 Course program for the second level (second cycle - postgraduate) of studies						
1.	Course title		Advanced Course in Energy Transformation				
2.	Code		2SEE01				
3.	Study group(s)		SEE				
4.	The organizer o	f the study program (unit,	"Ss. Cyril and Metl	hodiu	ıs" University in Skoj	pje, Faculty	
	institute, depart	ment)	of Mechanical Eng	ineer	ing - Skopje		
5.	Level (first, sec	ond, third degree)	Second	-			
6.	Academic year	/ semester	I / winter	7.	ECTS credits	6	
8.	Professor		Prof. dr. Done Tash	hevsk	ti		
			Prof. dr. Risto Filke	oski			
			Prof. dr. Atanasko '	Tune	eski		
			Prof. dr. Valentino	Stojl	kovski		
			Prof. dr. Zoran Mar	rkov			
			Assoc. prof. dr. Dame Dimitrovski				
			Ass. prof. Igor Shesho				
			Ass. prof. Viktor Iliev				
			_				
9.	Prerequisites for	r enrolling the course	None				
10.	Course objectiv	es (competences):					
	Learning advan	ced methods for renewable ener	gy usage. Specific ki	nowe	dge of small hydro, v	vind, tidal,	
	wave, solar, geo	othermal and biomass energy tra	insformation				
11.	Course content:						
	Overview of ad	vanced renewable energy resour	rces. Energy of inland	d wa	ter bodies. Tidal energ	gy	
	development. M	ction and design of w	vind t	urbines. Numerical m	nodeling.		
	State-of-the-art	e energy. Production	price				
	Solar energy par	nels with and without radiation	concentration. Types	s of g	eothermal energy sou	irces,	
	Technologies ar	nd drilling equipment. Low tem	perature energy source	ces. I	Biomass sources. Fore	ests,	
	agriculture, mur	nicipal and industrial waste. End	ergy potential. Biogas	s fue	ls.		
	-	_					

12.	Study methods: team work on project assignments, selfrunning assignments								
13.	Total ho	ours		purs = 300 hours					
14.	Hours allocation per activity: 45+45+45+					20=300			
15.	Lectures	s/Lab		15.1.	Lectures		45 hours		
				15.2.	Lab (student work)	1	45 hours		
16.	Project '	Work/A	Assignments	16.1.	Project assignment	s	45 hours		
				16.2.	Individual assignm	ents	45 hours		
				16.3.	Self-study		120 hours		
17.	Points/N	Aarks:							
	17.1.	E	Exams				40		
	17.2.	P	Projects				50		
	17.3.	A	Attendance				10		
18.	Grading	scale			Under	r 50	5 (five) (F)		
	-				51 - 60 po	ints	6 (six) (E)		
					61 - 70 po	7 (seven) (D)			
					71 - 80 po	8 (eight) (C)			
				_	81 - 90 points 9 (nine)				
10	Drorogui	initan fr	or taking the final arom		91 - 100 po	ints	10 (ten) (A)		
19.	Longue	isites it			Znalich				
20.	Languaş				English Student exectionneire				
21.	Course	evaluat	10 <b>n</b>		Student questionnaire				
22.	Textboo	oks							
	22.1	Instru	iction materials			-			
		No.	Author		Title	Publisher	Year		
		1.	Aubrecht G. J.		Energy: Physical, Environmental and Social Impact	Pearson	2006		
		2.		]	Renewable Energy	OECD/IEA	2004		
		3.							
	22.2   Supplemental Instruction Materials								
		No.	Author		Title	Publisher	Year		
		1.	Pilic-Rabadan L.	1	Vodne turbine, pumpe i /jetroturbine	Sveuciliste u Splitu	2000		
		2.							

Add	. 3	Course program for the	second level (second	d cyc	le - postgraduate) of	studies		
1.	Course title		Experts in Teamwo	ork (l	EiT)			
2.	Code		2SEE02					
3.	Study group(s)		SEE					
4.	The organizer of	f the study program (unit,	"Ss. Cyril and Met	hodi	us" University in Skop	je, Faculty		
	institute, departi	ment)	of Mechanical Engineering - Skopje					
5.	Level (first, seco	ond, third degree)	Second					
6.	Academic year	/ semester	I / winter	7.	ECTS credits	10		
8.	Professor		Assoc. prof. dr. Dame Dimitrovski					
			Assoc. prof. dr. Ana Frichand					
			Ass. prof. dr. Igor Shesho					
9.	Prerequisites for	enrolling the course	None					

10.	<ul> <li>Experts in Teamwork is a course in which students apply their academic competence in interdisciplinary project work to learn cooperative skills that can be transferred to the workplace. Relevant issues from society and working life form the basis for the project work, and the student teams should work together with external partners. The student team must adapt the project that the team members choose, to suit their combined competence and the theme of the group.</li> <li>Students develop teamwork skills by reflecting on and learning from specific cooperative situations in their project work. Reflections are shared by the team and are stimulated by facilitation, reflection writings, interaction exercises, and feedback to each other.</li> <li>Course content:</li> <li>Students in FiT are divided into groups of students, and each group is divided into interdisciplinary.</li> </ul>											
11.	Students in EiT are divided into groups of students, and each group is divided into interdisciplinary teams of five to six students. Each group is headed by a professor, called the group supervisor. Each group has a broad overall academic theme related to societal issues or challenges from working life. This theme forms the basis for the student team's project work. The group may have external partners that represent the theme, and that may be advisers and recipients of the students' work. The desired combination of academic competencies in the group is specified as a guide to help students choose a group.											
12.	Study methods: team work on project assignments, selfrunning assignments											
13.	Total hours10 ECTS x 30 hours = $300$ hoursHours allocation per activity: $45 \pm 45 \pm 45 \pm 45 \pm 120 = 200$											
14.	Hours a	UOCATIO	on per activity:	15 1		43+43+43+45+12	20=300		15 hours			
15.	Lectures	s/Lab		15.1.		Lectures Lab (student work)			45 hours			
16.	Project V	Work/A	Assignments	16.1.		Project assignments			45 hours			
				16.2.		Individual assignme	ents	45 hours				
				16.3.		Self-study			120 hours			
17.	Points/N	larks:										
	17.1.	E	xams						40			
	17.2.	Р	rojects						50			
	17.3.	A	ttendance						10			
18.	Grading	scale				Under	50		5 (five) (F)			
						51 - 60 poi	nts		$\frac{6(s_1x)(E)}{7(s_2s_2s_2s_2)(D)}$			
						71 80 poi	nts		$\frac{7}{(\text{seven})}$ (D)			
						81 - 90 poi	nts		9 (nine) (B)			
						91 - 100 poi	nts		10 (ten) (A)			
19.	Prerequi	sites fo	or taking the final exam		A	ctivity 16.1 and 16.2						
20.	Languag	ge of In	struction		Er	nglish						
21.	Course e	evaluati	ion		St	udent questionnaire		_				
22.	Textboo	ks										
	22.1	Instru	ction materials									
		No.	Author			Title	Publis	her	Year			
		1.	Bjørn Sortland, http://www.ntnu.edu/eit		Co 20 No	ourse materials 014, NTNU, orway	NTNU		2014			
		2.										
		3										
	22.2	Summ <sup>1</sup>	emental Instruction Matari	ale								
	<i>LL</i> .L	Supp		a15		T:41-	D. 1.1'	h av:	V			
		INO.	Author			1 itle	Publis	ner	Year			
		1.										

Add	. 3		Course program for	the s	the second level (second cycle - postgraduate) of studies					
1.	Course t	itle		Μ	odern thermal power p	olants				
2.	Code			28	SEE03					
3.	Study gr	coup(s)		SE	EE					
4.	The orga	anizer	of the study program (unit	, "S	s. Cyril and Methodiu	s" University	in Skopj	e, Faculty of		
	institute	, depar	tment)	– M	echanical Engineering	– Skopje				
5.	Level (fi	irst, see	cond, third)	Se	cond	ECTE	1.			
6.	Academ	ic year	/ semester	1/	winter /.	ECTS crea	dits	6		
8.	Professo	or Saites		Pr	of. dr. Done Tashevsk	1				
9.	Course	isites	une (compation and);	INC	one					
10.	Profound	d know	ves (competences).	that	analyze design analys	is and selection	on of adv	anced		
	equipme	ent. tec	hnical control, supervision	n and i	inspection during cons	truction. explo	oitation a	and		
	mainten	ance, e	environmental protection		section coming come	a decion, enpre				
11.	Course of	content								
	Moderni	ization	of plants with increased e	nergy	efficiency; combined	cycle cogener	ation pla	ants; plants		
	with trip	ole loop	o-three generation; plants I	MHD	G; hydrogen as fuel; th	ermal balance	es; efficie	ency		
	coefficie	ent; equ	uipment; economic and en	vironi	mental aspects					
12.	Study m	ethods	:							
13.	Total ho	ours			6  ECTS x  30 = 180	) hours				
14.	Hours a	llocatio	on per activity:	1 7 1	30+45+40+30+35=	= 180 hours		201		
15.	Lectures	s/Lab		15.1	15.1. Lectures (15 week x 2) 30 h					
16	Ducient	Vouls/	A	15.2	Lab (student work)	)		45 hours		
10.	Project	W OFK/ A	Assignments	10.1	. Project assignment	.S		40 nours		
				16.2	. Individual assignm	ents		30 hours		
				16.3	. Self-study			35 hours		
17	Doints/N	Iarka								
17.	17 1		Pests					50 points		
	17.1.							50 points		
	17.2.	P	rojects					50 points		
	17.3.	A	Attendance					-		
18.	Grading	scale			Unde	er 50		5 (five) (F)		
					51 - 60 p	oints		6 (six) (E)		
					61 - 70 p	oints		7 (seven) (D)		
				-	71 - 80 p	oints		8 (eight) (C)		
					<u>81 - 90 p</u>	oints		9 (nine) (B)		
10	Prerequi	isites fr	or taking the final evan		91 - 100 p Accomplished 16 1 a	oints nd 16 2		10 (ten) (A)		
20	Languag				Fnglish	10.2				
20.		<u>so</u> valuat	ion		Student questionnaire	<u> </u>				
21.	Textboo	ks	1011		Stadent questionnant	, 				
	101000	Inctm	uction materials							
		M-		I	T: 11 -	D-11! 1		Varia		
		INO.	Author		I itie	Publish	ier	r ear		
		1.	L. Drbal et al.		Power Plant	Black&Vea	tch,	1996		
	22.1				Engineering	New York	Haal,			
	22.1.	2	Klas Jonhagen.		Modern Thermal	Lund Unive	ersity	January		
					Power Plant-			2011.		
					Aspects on			Sweden		
					Modelling and					
					Evaluation"					

	Supp	lemental Instruction Materials			
	No.	Author	Title	Publisher	Year
22.2.	1.	B.W.Wilkinson,	Cogeneration of	CRC Press, Inc,	
		R.W.Barnes	Electricity and	Boca Raton,	
			Useful Heat	Florida	

Add	. 3 Course program for the sec	cond level (second cycle - postgraduate) of studies								
1.	Course title	Advanced thermodynamics - selected chapters								
2.	Code	2SEE04								
3.	Study group(s)	SEE								
4.	The organizer of the study program (unit,	"Ss. Cyril and Methodius" University in Skopje,								
	institute, department)	Faculty of Mechanical Engineering - Skopje								
5.	Level (first, second, third degree)	Second								
6.	Academic year / semester	I/winter 7. ECTS credits 6								
8.	Professor	Prof. d-r Risto Filkoski								
9.	Prerequisites for enrolling the course	None								
10.	Course objectives (competences):									
	<ul> <li>To obtain knowledge of the advanced topics in applied thermodynamics and heat transfer related to mechanical engineering, with emphasize to thermal power engineering and environmental protection. The course includes additional thermodynamics relations, including advanced thermodynamic cycles, two- and three-component systems and their applications. The course also covers advanced topics in conduction, convection and radiation heat transfer and related industrial applications.</li> <li>Advanced methods of modelling techniques of fluid flow, turbulence, combustion and heat transfer in engineering applications, with emphasize on numerical modelling. Engineering and scientific approach to the advanced techniques of modelling and simulation of thermal processes. Ability to create and use software applications for design, energy efficiency analysis and operating problems solution of steady-</li> </ul>									
	rherhodynamics of intevensible processes, seed processes. Entropy. Thermodynamic potentials, Maxwell relations. Multi-phase systems Real gases, Van der Waals equation of state of re equations. Liquid state. Internal pressure, surface Third law of classical thermodynamics, extensive Mixtures and mixing. Binary solutions. Thermody plants. Advanced thermodynamic cycles. Thermodynamic efficiency of the processes, ma balance, energy analysis, Grassmann diagram for Mass and energy balance of combustion process solid, liquid and gaseous fuels. Heat transfer top different applications in power engineering and Selected chapters on fluid flow, turbulence, con dynamics (CFD) and computational thermal ana the governing equations and numerical solution its evaluation. Modelling of flow processes with Modelling of heat transfer with CFD/CTA. Con energy transfer. Modelling of thermal radiation modelling, modelling of transitional processes. CFD technique as a tool for modelling operation plants, industrial furnaces (ovens), other industry reduction of an epidemody.	Helmholtz energy, Gibbs energy, chemical potential, changes. Chemical equilibrium. Energy and exergy real gases, equation of corresponding states and other ce stress and capillary phenomenon. vity, entropy.Flow of compressible fluids. odynamics of two- and three component systems. vnamic processes in thermal machines, facilities and aximal work, maximal technical work - exergy, exergy or exergy flow s. Kinetics and dynamics of the combustion process of pics and efficiency. Theory of similarity. Heat transfer in process industry. nbustion and heat transfer processes. Computational fluid alysis (CTA). The finite volume method. Discretisation of . Numerical domain, object geometry, numerical grid and n chemical reactions. Modelling of combustion. wection. Radiation energy transfer. Equation for radiation heat transfer by different methods. Time-dependant flow n of burners, combustors, combustion chambers, boiler rial facilities and devices. Modelling of the formation and								
12.	Study methods: Interactive lectures, auditory ar	d/or laboratory practice, selfrunning and/or team work								

13.	Total ho	ours			6 ECTS x 30 hours	= 180 hours		
14.	Hours a	llocatio	on per activity:	1	30+30+35+15+60 =	= 180 hours		
15.	Lectures	s/Lab		15.1.	Lectures (15 week >	(2)	30 hours	
				15.2.	Lab (student work)		30 hours	
16.	Project	Work/	Assignments	16.1.	Project assignments		35 hours	
				16.2.	Individual assignme	ents	15 hours	
				16.3.	Self-study		60 hours	
17.	Points/N	Aarks:		1				
	17.1.	I	Exams				50 points	
	17.2.	I	Projects				45 points	
	17.3.	A	Attendance				5 points	
18	Grading	scale			Under	50	5 (five) (F)	
10.	Orading	, scale		-	51 - 60 poi	nts	$\frac{5(\text{IVe})(\Gamma)}{6(\text{six})(\Gamma)}$	
				_	61 - 70 poi	nts	7 (seven) (D)	
					71 - 80 poi	nts	$\frac{(\text{seven})(D)}{8 \text{ (eight)}(C)}$	
				_	81 - 90 poi	9 (nine) (B)		
				_	91 - 100 poi	nts	10 (ten) (A)	
19.	Prerequi	isites f	or taking the final exam		Activities 15.2 and 16	.1		
20.	Languag	ge			English			
21.	Course	evaluat	tion		Student questionnaire			
22.	Textboo	oks		I				
	22.1	Instr	uction materials					
		No.	Author		Title	Publisher	Year	
		1.	K. Annamalai, I. K. Puri.	M.	Advanced	CRC Press.	2011	
			A. Jog,		Thermodynamics	2nd edition		
		2	I D Holclaitner Antunov	ric	General course of	ZUNS	2000	
		2.	1. D. Holeiajulei Antunov	ic .	physical chemistry	University in Belgrade	2000	
		3.	Baukal C.E. et al.		CFD in Industrial Combustion	CRC Press	2001	
	22.2	Supp	lemental Instruction Materi	als				
		No.	Author		Title	Publisher	Year	
		1.	Baukal C.E. et al.		Heat Transfer in Industrial	CRC Press	2000	
		2.	Filkoski R.		Modelling of energy conversion processes	Faculty of Mechanical Eng., Skopie	2011	
		3.	Petrovski K.		Termodinamics, 3rd edition		1999	

Add. 3		Course program for the second level (second cycle - postgraduate) of studies					
1.	Course titl	e	Transport and the environment				
2.	2. Code		2SEE05				
3.	Study grou	גענ(s)	SEE				
4.	The organizer of the study program (unit,		"Ss. Cyril and Methodius" University in Skopje,				
	institute, d	lepartment)	Faculty of Mechanical Engineering - Skopje				

r								20
5.	Level (f	irst, s	econd, third degree)		Second			
6.	Academ	nc yea	ar / semester		I/winter 7	. <u>E</u>	CTS credits	6
8.	Professo	or iaitaa	for oncelling the course		Assoc. prof. d-r Dam	e Din	htrovski	
9.	Course	object	tives (competences): A palvti	cal an	none proach to combustion	in IC	anginas mode	ling IC engines
10.	and tech	nolog	vies for reduction of exhaust	emiss	ions Calculation of re-	al cvc	eles measuring	performance
	and poll	ution		CHH55		ui eye	ies, measuring	, performance
11.	Course	conte	nt: Learning the real process	es in l	IC engines, forming po	ollutar	nts in the chan	ber of the
	engine,	pollut	tant behavior after combustic	on, tec	hnologies for pollution	n redu	ction in vehic	les etc.
12.	Study m	nethoo	ls: Interactive lectures, audite	ory an	d/or laboratory practic	e, sel:	frunning and/o	or team
	work on	i proje	ect assignments, selfrunning	assign	iments			
13.	Total ho	ours			6  ECTS x  30 = 180	) hou	rs	
14.	Hours a	llocat	ion per activity:	1 7 1	30+30+30+30+60	= 180	) hours	20.1
15.	Lecture	s/Lab		15.1	Lectures (15week)	x 2)		30 hours
16	Drojact	Work	(A coionmonto	15.2	. Lab (student work)	)		30 hours
10.	Project	WOIK	Assignments	10.1	. Project assignment	.8		50 hours
				16.2	. Individual assignm	ents		30 hours
				16.3	. Self-study			60 hours
17	Points/N	Iarks						
17.	17.1.	nai KS	Exams					50
	17.2		Drojacta					45
	17.2.		Projects					43
	17.3.		Attendance					
18.	Grading	scale			Unde	r 50		5 (five) (F)
					51 - 60 pc	oints		6 (six) (E)
					<u>61 - 70 pc</u>	ints		7 (seven) (D)
					/1 - 80 pc	oints		$\frac{8 \text{ (eight) (C)}}{2 \text{ (cinc) (D)}}$
					<u>81 - 90 pc</u>	into		9 (nine) (B) 10 (top) (A)
19	Prerequi	isites	for taking the final exam		Presented projects	mits		10 (tell) (A)
17.	Ticicqu	131103						
20.	Languag	ge or	Instruction		English			
21.	Course	evalu	ation		Student questionnaire	•		
22.	Textboo	oks						
	22.1	Inst	ruction materials					
		No	Author		Title		Publisher	Year
		1	Mile Dimitrovski Dame		ECOGAS software	Int	arnal issue	2010
		1.	Dimitrovski		LCOOAS software	IIIt	ernar issue	2010
		2.	Jeremy Colls		Air polution	I	SBN 0203-	2007
					r in Polanon		4762-6	
	22.2	Sup	plemental Instruction Materi	ials				
		No.	Author		Title		Publisher	Year
		1	Handbook of Air Pollutio	m	Eran Sher	+	Academic	1998
	1. Handbook of Alf Polluli from Internal Combustic		from Internal Combustion	1	Lian Shei		Press	1770
	Engines: Pollutant Formation			tion				
			and Control					
		2.	Transport and the		R. E. Hester, R. M.	RS	S.C advanced	2006
			environment		Harrison		chenical	
							science	

Add	. 3		Course progra	m for the	second lev	vel (secon	d cycle - po	stgr	aduate) o	of stu	dies
1.	Course	title			Fluid	Mechani	cs in Enviro	nmei	ntal Engir	neerin	ng
2.	Code				2SEE	06					
3.	Study g	group(s)		<i>,</i> .	SEE	~ 11 1			<u> </u>	<u></u>	
4.	The or	ganizer (	of the study program	(unit,	"Ss. (	Cyril and	Methodius"	Univ	versity in	Skop	oje,
5	Institut	e, depar	tment)		Facul	ty of Mec	chanical Eng	inee	ring - Sko	opje	
<i>J</i> .	Acade	nic vear	/ semester			I / winter 7					6
0.	Acader	ine year	/ semester		1 / W1.	inter		/.	credits		0
8.	Profess	sor(s)			Prof. dr. Valentino Stojkovski						
		. ,			Prof.	dr. Zoran	Markov				
9.	Prerequ	uisites			None						
10.	Course	objectiv	ves (competences):				1 7				
	Learn I	how to a	nalyze fluid flows in	environme	ental engin	eering, Si	mulate flow:	s and	l investig	ate	
11	Course	ence and	boundary layer probl	ems							
11.	Concer	ots of flu	ud properties viscous	s flow anal	vsis turbu	lence boi	ındary laver	s co	mnutatio	nal fl	nid
	dynam	ics	ila properties, viseou	, iio ,, uiiui	<i>J</i> 515, <i>t</i> 4104	101100, 000	andar y hayon	<b>, .</b>	inputation	iiui ii	uiu
12.	Study 1	methods	: lectures, lab, project	nts, individ	lual assig	nments, self-	stud	ly.			
13.	Total h	ours				6 ECTS	x 30 hours	= 18	0 hours		
14.	Hours	allocatio	on per activity:			30 + 15	+ 40 + 30 +	65 =	= 180 hou	Irs	
15.	Lecture	es/Lab			15.1.	Lecture	s (15weeks z	x 2)			30 hours
16	D	XX7 1 / /	· · /		15.2.	Lab (stu	ident work)				15 hours
16.	Project	WORK/A	Assignments		16.1.	Project	assignments			2	40 hours
					16.2.	Individu	ual assignme	nts		2	30 hours
					16.2	Calf ata	.1				<b>65</b> h
17	Points	Marke			10.3.	Sen-stu	dy			(	55 nours
17.	17 1	Exams									40
	17.2	Droject	e e								50
	17.2.	Attend	5								10
10	17.5.	Attenda	ance						0	_ /	10
18.	Gradin	g scale					Unc	ler 5	0	5 (	$f_1ve)(F)$
							<u>51 - 60</u>	oin	ts	0 7 (so)	(SIX)(E)
							71 - 80 1	noin	ts	$\frac{7}{8}$ (ei	(D)
							81 - 90 1	oin	ts	9 (n	(B)
							91 - 100	ooin	ts	10 (	(ten)(A)
19.	Prereq	uisites fo	or taking the final exa	m	Activit	y 16.1				,	
20.	Langua	age			English	1					
21.	Course	- evaluat	ion		Studen	t question	naire				
22.	Textbo	oks				-					
	22.1.	Instruc	tion materials								
		No.	Author			Title			Publishe	r	Year
		1	Rubin H Atkinso	n Envire	onmental F	Inid Mee	hanics	M	arcel Deb	ker	2001
		1.	J.		Environmental Fluid Mechanics				исст Dek С.	AUI	2001
		2.	Hirsch C.	Nume	rical Comp	outation o	f Internal	Bu	itterworth	1-	2007
				and External Flows: The Heinemann							
				Funda	mentals of	Computa	ational	1			
	22.2	C	montol Instruction N	Fluid	Dynamics			1			
	<i>LL</i> . <i>L</i> .	Supple	mental instruction M	aterials							
		No.	Author		Title		Pub	lishe	er		Year
		1.	White F. M.	Fluid Me	chanics		Mc-Gi	aw l	Hill		2008

Add	.3	Course program for th	e secor	ond level (second cycle - postgraduate) of studies					
1.	Course title	e	Environmental Measurement methods and Monitoring						
				Systems					
2.	Code		2	2SEE07					
3.	Study grou	ıp(s)		SEE					
4.	The organi	zer of the study program (unit,	د	'Ss. Cyril and Met	thodius" U	niversit	y in Skopj	e,	
	institute, d	epartment)	]	Faculty of Mechar	ical Engin	eering -	- Skopje		
5.	Level (first	t, second, third)		Second	Γ_		T T		
6.	Academic	year / semester		/ winter	7.		ECTS credits	6	
8.	Professor(s	5)		Prof. dr. Valentino Assoc. prof dr. Da	o Stojkovsł rko Babun	ci Iski			
9.	Prerequisit	es	l	None					
10.	Course obj	ectives (competences):							
	Learn to in of the mea Methods a movement Data acqui Software p	nplement of the dimensional ana surement instrumentation, accura nd instrumentation for the pressu , force and power. sition hardware & software syste packages for monitoring and cont	lysis an acy of r re, flov ems in e rol of e	Id theory of simila neasurements, pre v direction and vel environmental eng nvironmental eng	rity, to imp sentation of locity, disc ineering ineering pr	plement of the re charge, t rocesses	sults, temperatur	e,	
11.	Course cor	ntent:							
	<ul> <li>of the measurement instrumentation. Accuracy of the measurements and presentation of the results. Pressure measurement. Measurement of the fluid flow direction and flow velocity. Discharge measurement. Temperature measurement. Measurement of concentration and particle size distribution of granular materials, force and power.</li> <li>Analysis of the advantages and disadvantages of continuous environmental monitoring. Comparison of sensors and instruments for continuous monitoring and field measurement. Analysis of the systems for continuous monitoring and control of environmental pollution.</li> <li>Monitoring of municipal and industrial wastewater. Measurement data analysis and techniques. Automatic monitoring stations for municipal and industrial wastewater.</li> <li>Air monitoring: air pollution monitoring and testing equipment, ambient air monitoring, and automatic air pollution monitoring systems</li> </ul>								
12.	Study meth	hods: lectures, lab, project assign	ments,	individual assignr	nents, self	-study.			
13.	Total hour	<u>s</u>		6 ECTS x 30 = 180 hours					
14.	Hours allo	cation per activity:	1 - 1	30+15+40+3	0+65=180	) hours		20.1	
15.	Lectures/L	ab	15.1.	Lectures (15	weeks x 2	)		30 hours	
16	Droiget W/	rls/Accionments	15.2.	Droject easign	WOFK)			15 nours	
10.		nk/rassignments	10.1.		ments				
			16.2.	Individual as	signments			30 hours	
			16.3.	Self-study				65 hours	
17.	Points/Mar	rks:	·			I			
	17.1.	Exams						40	
	17.2.	Projects						50	
	17.3.	Attendance						10	
18.	Grading sc	ale		Und	er 50		5	(five) (F)	
				51 - 60 p	oints		(	5 (six) (E)	
				61 - 70 p	oints		7 (s	even) (D)	
				71 - 80 p	oints		8 (	eight) (C)	
				81 - 90 p	oints		9	(nine) (B)	
				91 - 100 p	oints		10	(ten) (A)	
19.	Prerequisit	es for taking the final exam		Activity 16.1					

20.	Langu	age			English		
21.	Course	e evalu	ation		Student questionnat	ire	
22.	Textbo	ooks					
	22.1.	Instru	action materials				
		No.	Author		Title	Publisher	Year
		1.	Randy D. Down, Jay H. Lehr	Environ Instrum Analysis	mental entation and s Handbook	Wiley Interscience, Hoboken, NJ	2005
		2.	Doebelin E. O.:	Measure Applica	ement Systems - tion and Design	McGraw-Hill, NY	2002
		3.	F. R. Bourden, D. Donnert, T. Godish. I. McKelvie	Environ Handbo	mental Monitoring ok	McGraw Hill	2004
	22.2.	Supp	lemental Instruction Materia	als			
		No.	Author		Title	Publisher	Year
		1.	G. Bruce Wiersma	Envi Mon	ronmental itoring	CRC Press	2004
		2.	Janick Artiola, Ian Pepper Mark Brusseau	, Envi Mon Chai	ronmental itoring and cacterization	Elsevier Academic Press	2004

Add	. 3	Course program for the sec	ond level (second cy	cle ·	- postgraduate) of stud	lies			
1.	Course tit	le	Environmental Syst	ems	s Analysis				
2.	Code		2SEE08						
3.	Study grou	up(s)	SEE						
4.	The organ	izer of the study program (unit,	"Ss. Cyril and Meth	odi	us" University in Skopj	e,			
	institute, c	lepartment)	Faculty of Mechani	cal l	Engineering – Skopje				
5.	Level (firs	st, second, third)	Second						
6.	Academic	year / semester	I / winter	7.	ECTS credits	6			
8.	Professor		Prof. dr. Atanasko 7	Гune	eski				
9.	Prerequisi	tes	None						
10.	Course ob	jectives (competences):							
	Acquire k	nowledge of:							
	<ul> <li>benefit analysis (CBA), material intensity per unit service (MIPS) analysis, total material requirement (TMR) analysis, ecological footprint (EF), exergy analysis, emergy analysis and risk assessment (RA) for chemicals.</li> <li>Case study where different environmental systems analysis tools are implemented.</li> </ul>								
11.	Course co	ntent:							
	DESCRIP and tools. Cycle Ass Unit Servi Emergy an CASE ST tools,LCA Discussion DISCUSS	TION OF THE ENVIRONMENTAL Environmental Impact Assessment (F essment (LCA). Positional Analysis ( ice (MIPS). Total Material Requirement halysis. Risk Assessment (RA) UDY. Introduction to the case study. calculations.MIPS calculations.Ecolor of the case study results ION AND CONCLUSION. Natural r	SYSTEMS ANALY EIA). Strategic Enviro (PA). Cost-Benefit A ent (TMR). Ecologica Inventory data.Envir ogical footprint calcu resource use. Environ	TSIS onm naly ll Fo conn llatio mer	TOOLS. Selecting que ental Assessment (SEA vsis (CBA).Material Inte potprint (EF).Exergy and nental systems analysis ons. Exergy calculation ntal impacts.Natural res	estions ).Life ensity per alysis. (Choice of s. ource use			

	T						30	
	and env	vironme	ntal impacts.Usability. Integr	ratior	.Conclusions			
12.	Study n	nethods	: lectures, lab, project assign	ment	s, individual assignmer	nts, self-study.		
13.	Total he	ours			6  ECTS x  30 = 180	hours		
14.	Hours a	$\frac{110catio}{a/L}$	on per activity:	15 1	30 + 15 + 40 + 30 +	65 = 180 hours	20 hours	
15.	Lecture	8/Lau	_	$\frac{15.1}{15.2}$	Lectures (15 weeks	X 2)	15 hours	
16.	Project	Work/A	Assignments	15.2.	Project assignments	,	40 hours	
	5		Č					
				16.2.	Individual assignme	ents	30 hours	
			-	16.3.	Self-study		65 hours	
17	Points/	Marks						
17.	17.1.	E	Exams				40	
	17.2.	P	Projects				50	
	17.3.	A	Attendance				10	
18	Grading	z scale			Under	50	5 (five) (F)	
•				F	51 - 60 poi	nts	6 (six) (E)	
				61 - 70 poi	nts	7 (seven) (D)		
				71 - 80 poi	nts	8 (eight) (C)		
				_	81 - 90 poi	nts	9 (nine) (B)	
10	Duanagu	isites f	an talving the final around		91 - 100 poi	nts	10 (ten) (A)	
19.	Frerequ		or taking the final exam		Exalish			
20.	Langua	ge			English			
21.	Course	evaluat	10n		Student questionnaire			
22.	Textboo	oks						
	22.1	Instru	action materials					
		No.	Author		Title	Publisher	Year	
		1.	Charles H. Eclleston		Environmental	CRC Press	2011	
					Impact Assessment:			
					A Guide to Best			
					Practices			
		2.	John Glasson, Riki Therive	el,	Introduction To	Routledge	2012	
			Andrew Chadwick	,	Environmental	C		
					Impact Assessment			
					(Natural and Built			
		3	Walter Klonffer Birgit Gre	bl	Environment Series)	Wilov VCH	2014	
		5.	watter Klopher, blight Gra		Assessment (LCA)	whey-ven	2014	
	22.2	Supp	lemental Instruction Materia	ls		L.		
		No.	Author		Title	Publisher	Year	
		1.	Glasson J., Therivel R.		Introduction to	The Natural	1999	
			and Chadwick A.		Environmental	and Built		
					Impact Assessment.	Environment		
					procedures process	Series. 1.J.		
					procedures, process,	Ltd. Padstow.		
					prospects.	UK		
		2.	Odum, H.T.		Environmental	John Wiley &	1996	
					Accounting -	Sons, Inc.,		
					Emergy and	New York.		
					decision making			
	L	1			accision maxing			

Add	.3	Course program for th	ne seco	nd level (second cycle - po	ostgraduate) of studies			
1.	Course title		1	An Introduction to Eco-inne	ovation			
2.	Code		2	2SEE09				
3.	Study group	(s)	5	SEE				
4.	The organize	er of the study program (unit,	•	'Ss. Cyril and Methodius"	University in Skopje,			
	institute, dep	partment)	I	Faculty of Mechanical Engl	ineering - Skopje			
5.	Level (first,	second, third degree)	e e	Second				
6.	Academic ye	ear / semester	I	/ winter 7. EC	CTS credits 6			
8.	Professor		I	Prof. dr Atanas Kochov				
9.	Prerequisites	s for enrolling the course	1	None				
10.	Course obje	ctives (competences):						
	technologies about enviro studies, lear studying an implementat developing t	which will contribute toward ret which will contribute toward comment and economic develo ming outcomes, chapter sum ad analyzing models of cle tion, this course will provide a projects and case studies for su	ains the l the su opment. nmaries an tec in esser ustainah	Invaluable core messa Istainable development, ha Containing a substantial , discussion questions, fu hnologies, resource effici- ntial introduction for studen ole development.	ge that eco-innovation and ve become central to debates number of new boxed case in ther reading and websites, iency, business models for nts and their competences for			
11.	Course conte	ent:	staniae					
	This course places stronger emphasis on the global challenges of eco-innovation, clean technologies, resource efficiency and proper usage of resources. The models and tools for eco-innovation approach, business models that should apply will be presented. The course provoke students toward new consideration to the challenge of achieving sustainable development by introducing eco-innovation technologies in to the production processes, and contribute toward the lower carbon growth, climate adaptation and development of rapidly expanding economies.							
12.	Study metho	ods: Interactive lectures, audito	orv and	or laboratory practice, self	running and/or team			
	work on project assignments, selfrunning assignments							
13.	Total hours	<u> </u>		6 ECTS x 30 = 180 hour	s			
14.	Hours alloca	ation per activity:		30+30+30+30+60=180 h	iours			
15.	Lectures/La	b	15.1.	Lectures (15 weeks x 2)	30 hours			
			15.2.	Lab (student work)	30 hours			
16.	Project Wor	k/Assignments	16.1.	Project assignments	30 hours			
			16.0	<b>T</b> 1 1 1 1	20.1			
			16.2.	Individual assignments	30 hours			
			16.3.	Self-study	60 hours			
17.	Points/Mark	s:						
	17.1.	Exams			60 points			
	17.2.	Projects			30 points			
	17.3.	Attendance			10 points			
18.	Grading scal	le		Under 50	5 (five) (F)			
				51 - 60 points	6 (six) (E)			
				61 - 70 points	7 (seven) (D)			
				71 - 80 points	8 (eight) (C)			
				81 - 90 points	9 (nine) (B)			
1.0				91 - 100 points	10 (ten) (A)			
19.	Prerequisites	s for taking the final exam	, in the second s	Seminar work delivered and	d approved			
20.	Language		I	English				
21.	Course evalu	uation	5	Student questionnaire				
22.	Textbooks							
	22.1 Ins	struction materials						

	No.	Author	Title	Publisher	Year
	1.	Sperber B.	Environmental Sound Technologies for Sustainable Development	Springer- Verlag	2008
	2.	Luken R., Rompaey F.	Environment and Industry in Developing Countries: Assessing the Adoption of Environmentally Sound Technology	Unido Press	2007
	3.	Hermiosilla J., Gonzales P.	Eco-innovation: Sustainability and Competitiveness	MacMillan Bubl.	2009
22.2	Supp	lemental Instruction Materials			
	No.	Author	Title	Publisher	Year
	1.	David R. Godschalk	Sustainable Development Projects: Integrating Design, Development, and Regulation	APA Planners Press;	1 edition (April 7, 2014)

Add	. 3	Course progr	am for	the first, second and	third leve	el (cycle) of s	tudies	
1.	Course tit	le	No	on-conventional power	<sup>•</sup> plants			
2.	Code		28	SEE10	•			
3.	Study gro	up(s)	SE	EE				
4.	The organ	izer of the study program	"S	s. Cyril and Methodiu	s" Univer	sity in Skopj	e,	
	(unit, insti	tute, department)	Fa	culty of Mechanical E	ngineerin	g – Skopje		
5.	Level (first	st, second, third)	Se	Second				
6.	Academic	year / semester	Ι/	Summer 7.	ECTS c	redits	6	
8.	Professor		As	Ass. prof. Igor Shesho				
9.	Prerequisi	tes	No	one				
10.	Course ob	jectives (competences):						
	Profound	knowledge about unconve	ntional	- modern plants to ana	lyze, desig	gn, analysis a	and selection of	
	advanced	equipment, technical contr	ol, supe	ervision and inspection	during co	onstruction, e	exploitation and	
	maintenar	ice, environmental protecti	on					
11.	Course co	ntent:	_					
	Introducing the unconventional modern plants for electricity (solar, geothermal, biomass, solid municipal							
	waste); ga	seous fuel plants: thermal	cycling	: heat balance and heat	processe	s: efficiency	coefficient:	
10	Equipmen	t: economic and environm	ental as	pects				
12.	Study met	hods:		( DOTE 20.1	1001			
13.	I otal hou	rs		$6 ECTS \times 30$ hours =	$\frac{180 \text{ hour}}{100 1}$	Ϋ́S		
14.	Hours allo	cation per activity:	1 7 1	30+45+40+30+35 =	$\frac{180 \text{ hours}}{2}$	5	20.1	
15.	Lectures/I	Lab	15.1.	Lectures (15 weeks x	(2)		30 hours	
10	Duele of W		15.2.	Lab (student work)			45 nours	
10.	Project w	ork/Assignments	10.1.	Project assignments			40 nours	
	16.			Individual assignmen	nts		30 hours	
		-	16.3.	Self study			35 hours	
17.	Points/Ma	irks:						
	17.1. Te	ests					50 points	
	17.2. Pr	ojects					50 points	
	17.3. A	ttendance						

18.	Gradin	g scale		Under 50	5 (	five) (F)		
		-		51 - 60 points	6	(six) (E)		
				61 - 70 points	7 (se	ven) (D)		
				71 - 80 points	8 (ei	ight) (C)		
				81 - 90 points	9 (nine) (B)			
				91 - 100 points	10 (	(ten) (A)		
19.	Prerequ	uisites fo	or taking the final exam	Accomplished 16.1 and 16.2				
20.	Langua	nge		English				
21.	Course evaluation			Student questionnaire				
22.	Textbo	oks						
	22.1.	No.	Author	Title	Publisher	Year		
		1.	B.W.Wilkinson,	Cogeneration of Electricity	CRC Press, Inc,			
			R.W.Barnes	and	Boca Raton, Florida			
				Useful Heat"				
	22.2.	Supple	emental Instruction Materia	ls				
	No. Author		Author	Title	Publisher	Year		
	1. P.K.Nag		P.K.Nag	"Power Plant Engineering",	Tata McGray-Hill	2008		
				Third Edition	Publishing Company			
					Limited, New Delhi			

Add	. 3	Course program for the	second	l level (second cycle - postgradu	ate) of studies			
1.	Course tit	tle	W	Vater and Waste Water Treatment				
2.	Code		23	SEE11				
3.	Study gro	oup(s)	S	EE				
4.	The organ	nizer of the study program	"	Ss. Cyril and Methodius" University	sity in Skopje,			
	(unit, inst	itute, department)	F	Eaculty of Mechanical Engineering	g - Skopje			
5.	Level (fir	st, second, third)	S	Second				
6.	Academic year / semester			I / summer 7. ECTS credits 6				
8.	Professor		P	Prof. dr. Zoran Markov				
9.	Prerequis	ites	N	Vone				
10.	Course of	ojectives (competences):						
11	Learn hov	w to water treatment works,	operati	ion in municipal and industrial tre	atment plant			
11.	Course co	ontent:	1.					
	water tre	atment technologies, water of	quality j	parameters, waste water treatmen	t, activated sludge			
12	processes Study mo	, water quanty laws and reg		s nonte individual accientmente col	f study			
12.	2. Total hours							
13.	Hours all	ocation per activity.		30 + 15 + 40 + 30 + 65 - 180	hours			
15	Lectures/	Lab	15.1	Lectures (15 weeks x 2)	30 hours			
10.	Loctaros		15.2.	Lab (student work)	15 hours			
16.	Project W	ork/Assignments	16.1.	Project assignments	40 hours			
	5	e		, <i>C</i>				
			16.2.	Individual assignments	30 hours			
			16.3.	Self-study	65 hours			
17.	Points/Ma	arks:						
	17.1.	Exams			40			
	17.2. Projects				50			
	17.3.	Attendance			10			
18.	Grading s	scale		Under 50	5 (five) (F)			
				51 - 60 points	6 (six) (E)			
				61 - 70 points	7 (seven) (D)			

									34
						71 - 80	points		8 (eight) (C)
						81 - 90	points		9 (nine) (B)
						91 - 100	points		10 (ten) (A)
19.	Prerequ	isites for	taking the final exa	am	Activity 16.1				
20.	Langua	ge			English				
21.	Course	Course evaluation			Student questionnaire				
22.	Textboo	oks			I				
	22.1.	Instruct	ion materials						
		No.	Author	Title		Publisher		Year	
		1.	Lee C.C.	Handb Enviro Engino Calcul	book of conmental eering lations	Mc-Graw Hill	2007		
		2.	Kemer F.N.	The Nalco Water Handbook		Mc-Graw Hill			
	22.2.	Suppler	nental Instruction	Materia	ls	L	1		
		No.	Author		Title	Publisher		Year	
		1.	WEF Manual of Practice No. FD-3	Industrial waste water managment, treatment and disposal		WEF Press		2008	

Add	. 3	Course program for t	he secoi	econd level (second cycle - postgraduate) of studies					
1.	Course title		E	Energy efficiency					
2.	Code		2	SEE12					
3.	Study group	<b>b</b> (s)	S	EE					
4.	The organiz	er of the study program (unit,	"	Ss. Cyril and Met	hodiı	us" University in Sko	opje,		
	institute, de	partment)	F	Faculty of Mechanical Engineering - Skopje					
5.	Level (first,	second, third)	S	Second					
6.	Academic y	vear / semester	Ι	I / winter 7. ECTS credits 6					
8.	Professor		P	rof. dr. Done Tasl	hevsl	ĸi			
9.	Prerequisite	es	Ν	lone					
10.	Course obje	ectives (competences):							
	Candidates	are competent for analysis, mo	deling,	optimization and i	imple	ementation of differe	nt systems		
	for energy e	efficiency in different areas suc	h as bui	ldings, industry, a	Igricu	ulture and forestry, a	nd transport		
	with introdu	icing a complete energy manag	gement i	n these areas.					
11.	Course cont	tent:							
	Methods for	r analyzing modern systems for	r energy	efficiency.					
	Introdusing	the existing models for the cal	culation	of processes and	syste	ems for energy effici	ency.		
	Ways for op	ptimization and selection of participation of participation and selection of participation of the participation of	rameters	s in which optimiz	es th	e system in order to	meet the		
	energy effic	ciency criteria.							
	Implementa	tion of analyzed, modeled and	optimiz	ed systems to spe	cific	examples.			
12.	Study meth	ods: lectures, lab, project assig	nments,	individual assign	ment	s, self-study.			
13.	Total hours			6  ECTS x  30 = 1	180 h	ours			
14.	Hours alloc	ation per activity:		30 + 15 + 40 + 3	80 + 6	65 = 180  hours			
15.	Lectures/La	ıb	15.1.	Lectures (15 we	eks x	(2)	30 hours		
			15.2.	Lab (student wo	rk)		15 hours		
16.	Project Wor	rk/Assignments	16.1.	Project assignme	ents		40 hours		
			160	<b>x</b> 1 1 1 .			201		
			16.2.	Individual assign	nmen	its	30 hours		

				16.3.	Self-study		65 hours	
17.	Points/N	Marks:			I			
	17.1.	]	Exams				40	
	17.2.	]	Projects				50	
	17.3.		Attendance				10	
18.	Grading	g scale			Unde	5 (five) (F)		
					51 - 60 points 6 (s			
					61 - 70 po	ints	7 (seven) (D)	
					71 - 80 po	ints	8 (eight) (C)	
					81 - 90 po	ints	9 (nine) (B)	
				91 - 100 po	ints	10 (ten) (A)		
19.	Prerequ	isites f	for taking the final exam	A	Activity 16.1			
20.	Languag	ge		E	English			
21.	Course	evalua	tion	S	tudent questionnaire	;		
22.	Textboo	oks						
	22.1	Instr	uction materials					
		No.	Author		Title	Publisher	Year	
		1.	D. Tashevski	E	Energy efficiency	Selected lectures and handouts	2014	
		2.	D.R. Wulfinghoff	E	Energy efficiency	Energy institute press	1999	
		3.	P. Bertoldi	E	Energy efficiency	Springer	2007	
	22.2 Supplemental Instruction Materials			als				
		No.	Author		Title	Publisher	Year	
		1.	D.R. Wulfinghoff	E N	Energy Efficiency Manual	Energy institute press	2000	

Add	.3	Course program for t	the seco	econd level (second cycle - postgraduate) of studies				
1.	Course title		E	co-engines				
2.	Code		2	SEE13				
3.	Study group(s	s)	S	EE				
4.	The organizer	r of the study program (unit,	"	"Ss. Cyril and Methodius" University in Skopje,				
	institute, depa	artment)	F	faculty of Mechanical Eng	gineering - Skopje			
5.	5. Level (first, second, third degree)			econd				
6.	Academic yea	ar / semester	Ι	/ summer 7. E	ECTS credits	6		
8.	Professor		A	ssoc. prof. d-r Dame Din	nitrovski			
9.	Prerequisites	for enrolling the course	Ν	None				
10.	10. Course objectives (competences): Analytical a			oach to combustion in IC	engines improving			
	performances of engines, measuring in engines			nderstanding hybrid tech	nologies, alternative	fuels for		
	IC engines en	d characteristics.						
11.	Course conten	nt: Learning the contemporar	y mode	ls of eco engines, hybrid 1	motor system, engin	es on		
	gaseous fuels	, bio fuels and new fuels. Inte	eraction	ion between engine construction and alternative fuels.				
12.	Study method	ls: Interactive lectures, audito	ory and/	or laboratory practice, sel	frunning and/or tear	n work on		
	project assign	ments, selfrunning assignme	nts	ſ				
13.	Total hours			6  ECTS x  30 = 180  hou	rs			
14.	Hours allocat	ion per activity:		30 + 30 + 30 + 30 + 60	=180 hours			
15.	Lectures/Lab		15.1.	Lectures (15 weeks x 2)	)	30		
			15.2.	Lab (student work)		30		
16.	Project Work	/Assignments	16.1.	Project assignments		30		

				16.2.	Individual assignme	ents	30		
			-	16.3.	Self-study		60		
17.	Points/N	Aarks:				I			
	17.1.		Exams				50		
	17.2.		Projects				45		
	17.3.		Attendance				5		
18.	Grading	scale			U	Jnder 50	5 (five) (F)		
		,			51 - 6	50 points	6 (six) (E)		
					61 - 7	70 points	7 (seven) (D)		
					71 - 8	30 points	8 (eight) (C)		
					81 - 9	90 points	9 (nine) (B)		
					91 - 10	00 points	10 (ten) (A)		
19.	Prerequisites for taking the final exam				Presented projects				
20.	Languag	ge		Ε	English				
21.	Course	evalua	tion	S	Student questionnaire				
22.	Textboo	ks		•					
	22.1	Instr	ruction materials						
		No.	Author		Title	Publisher	Year		
		1.	Mile Dimitrovski	E	ECO Engines	Internal issue	2008		
		2.	Handbook of Air Pollution from Internal Combustion Engines: Pollutant Formati and Control	on	Eran Sher	Academic Press	1998		
		3.	Transport and the environment	F	R. E. Hester, R. M. Iarrison	RS.C advanced chenical science	2006		
	22.2	Sup	olemental Instruction Materia	ls					
		No.	Author		Title	Publisher	Year		
		1.	The biodiesel handbook	V a	an Gerpen, Knothe and others	AOCS Press, Illinois	2005		

Add	. 3	Course program for the s	econd level (second cycle - postgraduate) of studies							
1.	Course title		Design of fluid conveying	g and h	ydro power system					
2.	Code		2SEE14							
3.	Study group(	s)	SEE							
4.	The organize	r of the study program	"Ss. Cyril and Methodius"	" Unive	ersity in Skopje,					
	(unit, institut	e, department)	Faculty of Mechanical En	igineeri	ng - Skopje					
5.	Level (first, s	second, third)	Second							
6.	Academic ye	ar / semester	I / summer 7. ECTS credits							
8.	Professor(s) Prof. dr. Valentino Stojkovski									
			Prof. dr. Zoran Markov							
9.	Prerequisites		None							
10.	Course objec	tives (competences):								
	Introduction	to systems for hydraulic and	pneumatic convey of fluids	. Devel	oping mathematica	l models				
	for hydraulic	calculation of the systems an	nd their components. Introd	uction	to systems for hydro	o power.				
	Developing r	nathematical models for hyd	raulic calculation of the sys	tems ar	nd their components	s. 🗆				
11.	Course conte	nt:								
	Physical properties of fluids, water, oil, gas and mixtures of fluid - solid particles.									
	Hydraulic an	d Pneumatic Conveying: cal	culation, devices and equipr	nent,						
	Hydro power	systems: pump stations and	hydro power plants: calcula	ation, d	evices and equipme	ent				
	Techno	-econo	omical calculation a	nd eco	ono	mic parameterisation				
-----	------------	-----------	--------------------------	---------	-----------------------	----------------------------------	--------	--------------------------	----------	--
12.	Study m	ethods	: lectures, lab, project	assig	nme	ents, individual assignments, s	elf-st	udy.		
13.	Total ho	ours				6 ECTS x 30 = 180 hours				
14.	Hours a	llocatio	on per activity:	_		30 + 15 + 40 + 30 + 65 = 18	30 hoi	urs		
15.	Lectures	s/Lab		15.1	•	Lectures (15 weeks x 2)	30	) hours		
				15.2	2. Lab (student work)			15 hours		
16.	Project	Work/A	Assignments	16.1	•	Project assignments		40 hours		
				16.2	•	Individual assignments		30 hours		
				16.3	•	Self-study		65	5 hours	
17.	Points/N	/larks:				1		1		
	17.1.	E	Exams						40	
	17.2.	Р	rojects						50	
	17.3.	A	Attendance						10	
18.	Grading	scale				Under	50	5 (fi	ve) (F)	
						51 - 60 poi	nts	6 (s	six) (E)	
						61 - 70 poi	nts	7 (seve	en) (D)	
						<u>71 - 80 points</u> 8 (				
						81 - 90 poi	nts	<u> </u>	(B)	
19.	Prerequi	isites fo	or taking the final exa	m	Ac	91 - 100 poi	nts	10 (16	en) (A)	
20.	Languag	ge			En	glish				
21.	Course e	evaluat	ion		Stu	ident questionnaire				
22.	Textboo	ks								
	22.1	Instru	action materials							
		No.	Author			Title		Publisher	Year	
		1.	Speight J.G.			Natural	Gul	f Publishing	2007	
						Gas – A	Con	npany, Houston		
						Basic				
						Handbook				
		2.	Oneil A. Williams		Pn Co	eumatic and Hydraulic	CRO	C Press	1983	
		3.	G.I.Krivcenko		Hy and	draulic machines-turbiner	Lew	vis publisher	1994	
	22.2	Supp	lemental Instruction N	Materia	als					
	No. Author					Title		Publisher	Year	
		1.	Wang X., Economic	les	Ad	lvanced Natural Gas	G	ulf Publishing	2009	
			M.		En	gineering	Cor	npany, Houston, Texas		
		2.	David Mills,		Pn Gu	eumatic Conveying Design iide		ELSEVIER	2004	
		3.	Frank Yeaple		Flu	uid Power Design Handbook		CRC Press	1995	

Add. 3		Course program for the second leve	l (second cycle - postgraduate) of studies			
1.	Course t	itle	Waste management			
2.	Code		2SEE15			
3.	Study gr	oup(s)	SEE			
4.	The orga	nizer of the study program (unit,	"Ss. Cyril and Methodius" University in Skopje,			

	institute	e, depar	tment)		Faculty of Mechanical	l Engineering	g - Sko	pje		
5.	Level (	first, see	cond, third degree)		Second					
6.	Acaden	nic year	/ semester		I / summer 7.	ECTS cre	edits	6		
8.	Profess	or			Assoc. prof. d-r Dame Dimitrovski					
9.	Prerequ	usites fo	or enrolling the course		None					
10.	Course	objectiv	ves (competences): Able to	organi	ganize and run efficient (environmental, energy and					
	manage	ement sy	system of a product or a solu	tion fo	or the industry or com	nunity Unde	erstand	ing the		
	applica	ble tech	nologies for reducing waste	e. reus	ing waste or turning wa	aste in to a ra	aw mat	terial for further		
	process	es.	6	,	8					
11.	Course	content	: Exploring technical mode	ls, equ	ipment and units, regu	lations for et	fficien	twaste		
	manage	ement. S	Systems for waste managem	ent in	communities and indu	stry. Cain of	action	is in waste		
	manage	ement. E	Examples for waste reduction	on. Exa	amples for reusing was	te, turning w	aste in	to energy etc.		
12.	Study n	nethods	: Interactive lectures, audito	ory and	d/or laboratory practice	e, selfrunning	g and/c	or team		
12	Work Of	n projec	t assignments, selfrunning	assign	$\frac{\text{ments}}{6 \text{ ECTS} = 20 - 180}$	<b>1</b>				
13.	I otal no	ours	1000000000000000000000000000000000000	110						
14.	Lecture	nocano	ni per activity.	30 + 13 + 43 + 43 + 43 + 43 + 43 + 43 + 43	$\frac{-43-160100}{x(2)}$	uis	30			
15.	Lecture	5/ Lau		15.1	Lab (student work)	<u>x 2)</u>		<u> </u>		
16	Project	Work/A	Assignments	16.1	Project assignments	3		45		
101	110,000		19918-1991	1011	110jeet ussignment					
				16.2	. Individual assignme	ents		45		
				16.2	Calf starlar			15		
				10.3.	3. Self-study			45		
17.	Points/I	Marks:								
	17.1.	E	Exams					30		
	17.2.	Р	Projects					60		
	17.2	-	ttandanaa					10		
10	17.5.		Attenuance					10		
18.	Grading	g scale		-	<b>5</b> 1	Under 50		5 (five) (F)		
				-	51 -	60 points		$\frac{6(\text{S1X})(\text{E})}{7(\text{second})(\text{D})}$		
				ŀ		70 points		$\frac{7}{(\text{seven})}$ (D)		
				F		90 points		$\frac{0}{9}$ (nine) (B)		
				-	91 - 1	100 points		10 (ten) (A)		
19.	Prerequ	isites fo	or taking the final exam		Presented projects	too points				
20	Langua	<u>ae</u>	0		English					
20.	Langua	<u>gc</u>								
21.	Course	evaluat	10 <b>n</b>		Student questionnaire					
22.	Textbo	oks								
	22.1	Instru	action materials							
		No.	Author		Title	Publish	er	Year		
		1	Furopean commission		Waste management	FC		2001		
		1.			options					
		2.	Nicholas P. Chermisinoff		Handbook of solid	Butterwort	th	2003		
					waste management	Heineman	n			
					and waste					
					minimization					
				1	technologies					
	22.2	Supp	Iemental Instruction Materi	als		I				
		No.	Author		Title	Publish	er	Year		
		1.	George Tchobanoglous,		Handbook of solid	McGraw H	Hill	2002		
			Frank Kraith		waste management					

Add.	. 3 Course program for the second level (second cycle - postgraduate) of studies											
1.	Course	e title		E	nergy	vs.	Sustainable Dev	velopme	nt: Concepts and A	spects		
2.	Code			25	SEE16	5						
3.	Study	group(s	)	SI	EE							
4.	The or	ganizer	of the study program	"	Ss. Cy	ril a	and Methodius"	Univers	ity in Skopje,			
~	(unit, 1	Institute	, department)	Fa	aculty	of	Mechanical Eng	ineering	- Skopje			
5.	Level	(first, se	econd, third degree)						OTO and life			
0. o	Acade	mic yea	r / semester	1/	sumr	ner	Edn Ano M. Lo	/. E	CIS credits	0		
8. 0	Profes	SOF	for appolling the course	A	ssoc. ]	proi	. dr. Ana M. La	Zarevska	1			
9.	Course	uisites i	or enroning the course		one							
10.	Introdu	uction to	the sustainability con	cent an	d asne	octe	implemented or	enerov	systems both on t	he		
	deman	d and th	e supply side	cept an	u aspe	LIS	implemented of	renergy	systems, both on t	iii.		
11.	Course	e conten	t:									
	Introd	uction to	the concept of Sustain	nable D	Develo <sup>*</sup>	pme	ent (SD), Indicat	ors of S	D			
	Implei	nenting	the SD concept to ener	rgy sys	tems.	Mo	deling and asses	sment.				
12.	Study	method	s: Interactive lectures,	guest le	ecturer	rs, a	uditory practice	, work o	n project assignme	ents/case		
	studies	s (team	work), selfrunning assi	gnmen	ts							
13.	Total l	nours					6 ECTS x 30 =	180 ho	urs			
14.	Hours	allocati	on per activity:				30 + 15 + 40 + 3	$30 + \overline{65} =$	=180 hours			
15.	Lectur	es/Lab			15.1		Lectures (15 w	eeks x 2	2)	30		
					15.2	•	Lab (student w	ork)		15		
16.	Projec	t Work/	Assignments		16.1. Project assignments					40		
					16.0		To dividual and an arrange			20		
					10.2. Individual assignments				50			
					16.3		Self-study			65		
							5					
17.	Points	/Marks:	Γ									
	17.1.		Exams							40		
	17.2.		Projects							50		
	17.3.		Attendance							10		
18	Gradir	ng scale					IJn	der 50	5	(five)(F)		
10.	Oraun	ig scale			-		51 - 60	noints		6 (six) (F)		
					-		61 - 70	points	7 (5	(SIX)(D)		
							71 - 80	points	8 (	(eight) (C)		
							81 - 90	points	9	(nine) (B)		
					ŀ		91 - 100	points	1(	(ten)(A)		
19.	Prereq	uisites f	for taking the final example	m		Co	mpleted activity	15.2, 1	6.1. and 16.2 (17.2	& 17.3)		
20.	Langu	age of I	nstruction			En	glish					
21	Course		tion			St1	v Ident questionna	ire				
21.	Tant					Su	acin questionna					
22.	rextbo	JOKS										
	22.1	Instruc	ction materials									
		No.	Author			Ti	tle		Publisher	Year		
		1.	S. Bell, S. Morse	Sustai	nabili	tv I	ndicators:	EarthS	can Publications.	2000		
			,	Measu	uring t	the i	immeasurable	Ltd.				
		2.	T.E. Graedel, B. R.	Indust	trial E	colo	ogy	Pearso	n Education Inc.	2003		
			Allenby									
	22.2	Supple	emental Instruction Ma	terials								
		No.	Author			Ti	tle		Publisher	Year		
		1	UN CSD	Sustai	nable	De	velonment		UN			
				Know	ledge	pla	tform					

2	Organisation of Economic Co– operation and Development (OECD)	"Core Set of Indicators for Environmental Performance Reviews". A synthesis report by the Group on the State of the Environment.	Paris: 39	1993
3	Golay, M., Field, R., Green, Jr. W., Wright, J.C.	Introduction to Sustainable Energy (Online open course- materials)	MIT (http://ocw.mit.edu/cou rses/nuclear- engineering/22-081j- introduction-to- sustainable-energy-fall- 2010/)	2010
4	D. A. Vallero, P. A. Vesilind	Socially Responsible Engineering: Justice in Risk Management	John Wiley & Sons Inc.,	2007

Add	Add. 3         Course program for the second level (second cycle - postgraduate) of studies										
1.	Course title		Automation of environmental processes								
2.	Code		2	SEE17							
3.	Study group(s)		S	EE							
4.	The organizer of	f the study program (unit	, "	Ss. Cyril and Met	thodius" Univers	sity in Skopje	,				
	institute, departi	ment)	F	Faculty of Mechanical Engineering – Skopje							
5.	Level (first, seco	ond, third)	S	Second							
6.	Academic year	/ semester	Ι	/ summer	7. ECTS cr	edits	6				
8.	Professor(s)		A	ssoc. prof. dr. Er	nil Zaev						
			A	ssoc. prof. dr. Da	arko Babunski						
9.	Prerequisites		N	lone							
10.	Course objective	es (competences):									
	Acquire knowle	dge of:									
	Analysis and de processes. Acqu SCADA system (PLC). Function environmental p	sign of automation system tire programming skills in s – Supervisory Control a hality and characteristics processes;	ems for river monitoring and water and wastewater treatment in the Matlab platform. Analysis, design and implementation of and Data Acquisition and Programmable Logic Controllers of environmental measurement systems to monitor and control								
11.	Course content: Introduction to t Feedforward con nonlinear, mode - Examples of in plant model: Co chlorination) pla and general com - Control system (Introduction, S - Programming) - Basic instrume instrumentation)	the most commonly used ntrol, feedback (P, PI and el control) nplementation of control ntrol of pumps, coagulati ants for wastewater treatr trol algorithms in the plan n architecture. Supervisor CADA / DCS software, h and configure the Program entation (instrumentation ).	types of algorith ion dosi- nent (Co nt, ry Contr nardward mmable for mea	Control algorithm ontrol) Advanced ams in facilities for ng, pH, purification ontrol of dissolved ol and Data Acque e management syst Logic Controller suring flow, temp	ns (sequential, c control algorith or treatment of d on and sediment d oxygen, depth tisition (SCADA stem (PLC, RTU s (PLC) control perature, level, p	continuous, O ms: adaptive, rinking water ation, filtratic of the sludge a) and DCS sy J, Networks), subsystem (P ressure and a	n-Off and (Basic on and e refiner) ystems OPC), PLC nalytical				
12.	Study methods:	lectures, lab, project assi	gnments	nments, individual assignments, self-study.							
13.	Total hours			6  ECTS x  30 = 180  hours							
14.	Hours allocation	n per activity:		30 + 15 + 40 + 30 + 65 = 180 hours							
15.	Lectures/Lab		15.1.	Lectures (15 we	eeks x 2)	ļ	30 hours				
			15.2.	Lab (student wo	ork)		15 hours				
16.	Project Work/A	ssignments	16.1.	Project assignm	ents		40 hours				

				160	T 1 1 1 .		20.1
				16.2.	Individual assignme	ents	30 hours
				16.3.	Self-study		65 hours
17.	Points/N	Marks					
	17.1.		Exams				40
	17.2.		Projects				50
	17.3.		Attendance				10
18.	Grading	g scal	e		Unde	er 50	5 (five) (F)
					51 - 60 pc	oints	6 (six) (E)
					61 - 70 pc	oints	7 (seven) (D)
					71 - 80 pc	oints	8 (eight) (C)
					81 - 90 pc	oints	9 (nine) (B)
					91 - 100 pc	oints	10 (ten) (A)
19.	Prerequ	isites	for taking the final exam		Activity 16.1		
20.	Langua	ge			English		
21.	Course	evalu	ation		Student questionnaire		
22.	Textboo	oks					
	22.1	Ins	truction materials				
		No	. Author		Title	Publisher	Year
		1.	AWWA		Water treatment plant design	McGraw-Hill	1990
		2.	G. Tchobanoblous		Wastewater Engineering Treatment and Reuse	McGraw-Hill	2003
		3.	M.L. Davis		Water and Wastewater Engineering	McGraw Hill	2010.
	22.2	Sup	oplemental Instruction Mate	erials			
		No	. Author		Title	Publisher	Year
		1.	S.A.Boyer		SCADA: Supervisory Control and Data Acquisition	ISA - The Instrumentation, Systems, and Automation Society	1999
		2.	W. Bolton		Programmable Logic Controllers	Elsevier	2009

Add	. 3	Course program for the secon	d level (second cycle	e - po	stgraduate) of studie	S	
1.	Course title		Clean fossil and al	terna	tive fuels energy		
2.	Code		2SEE18				
3.	Study group(	s)	SEE				
4.	The organize	r of the study program (unit,	"Ss. Cyril and Met	hodi	us" University in Skop	je,	
	institute, depa	artment)	Faculty of Mechan	ical I	Engineering - Skopje		
5.	. Level (first, second, third degree) Second						
6.	Academic ye	ar / semester	I / summer	7.	ECTS credits	6	
8.	Professor		Prof. dr. Risto Filkoski				
9.	Prerequisites	for enrolling the course	None				
10.	Course object	tives (competences):					
	Acquiring kn fuels. Acquir	owledge about the methods and t	echniques for efficier echnologies for envir	nt util ronm	isation of fossil and al ental protection that ap	ternative oply to	

	combust and simu (boilers,	ion pla ilation combi	nts. Analysis, calculation a techniques of aerodynamic ustors, furnaces, heat excha	nd opti s, comb ngers e	mal performance of co bustion and heat transition.	ombustion sy fer in therma	ystems al energ	. Modelling gy systems			
11.	Course of Propertie gasificat fuels con	content es of fo ion, lic nbustio	: ossil and alternative fuels. E quefaction. Mass and energ on.	Energy t y balance	ransformations of fue ce of combustion proc	ls: combusti ess. Kinetic	ion, py s and d	rolysis, lynamics of			
	Processi of applic	ng and cation.	handling of solid fuels. Me	ethods a	and techniques for con	nbustion of s	solid fu	iels, examples			
	Processi fuels, ex	ng and amples	handling of liquid and gases s of application.	eous fue	els. Methods and tech	niques for co	ombust	tion of solid			
	Environt Air pollt of SO <sub>2</sub> for NO <sub>x</sub> for combine techniqu	mental ution cormation mation ed deSC les for	considerations. Classification ontrol. Techniques for redu on. Methods and techniques . Methods and techniques for D <sub>2</sub> /deNO <sub>x</sub> . Methods for CO reduction of GHG emission	ion of p ction of s for SC or NO <sub>x</sub> emission.	f solid particles emission $D_2$ emission reduction. emission reduction. Non reduction. Greenho	olant emissio ion. Thermo Thermodyn Aethods and ouse gases er	ons and dynam namics techni- missior	discharges. ics and kinetics and kinetics of ques for h. Methods and			
	furnaces	ng, sım , thern	ulation and optimisation ten al energy facilities. Modell	chnique	es of burners, combust the pollutants formation	tion chambe	rs, boil	er plants,			
12.	Study m	ethods	: Interactive lectures, audito	ory and	/or laboratory practice	e, selfrunning	g and/c	or team work			
13.	Total hours     6 ECTS x 30 hours = 180 hours										
14.	Hours allocation per activity: $30+30+40+30+50 = 180$ hours										
15.	Lectures	/Lab		15.1.	Lectures			30 hours			
				15.2.	Lab (student work)			30 hours			
16.	Project V	Work/A	Assignments	16.1.	Project assignments	5		40 hours			
				16.2.	Individual assignme	ents		30 hours			
				16.3.	Self-study			50 hours			
17.	Points/N	larks:									
	17.1.	E	Exams					50 points			
	17.2.	Р	rojects					45 points			
	17.3.	A	Attendance					5 points			
18.	Grading	scale			Under	50		5 (five) (F)			
	-				51 - 60 poi	nts		6 (six) (E)			
					<u>61 - 70 poi</u>	nts		7 (seven) (D)			
					71 - 80 poi	nts		8 (eight) (C)			
				_	90 poi 91 - 100 poi	nts		$\frac{9 \text{ (IIIIe) (B)}}{10 \text{ (ten) (A)}}$			
19.	Prerequi	sites fo	or taking the final exam	1	Activities 15.2 and 16	.1					
20.	Languag	ge		]	English						
21.	Course e	evaluat	ion	2	Student questionnaire						
22.	. Textbooks										
	22.1	Instru	action materials								
		No.	Author		Title	Publish	ner	Year			
		1.	Edited by J.B. Kitto and S Stultz	S.C. S	Steam, It's generation and use, Ed. 41	The Babco & Wilcox Company	ock	2005			
		2.	Baukal C.E. et al.	(	CFD in Industrial Combustion	CRC Press	s	2001			

	3.	Group of authors	IPPC, Ref.	European	2006
			Document on BAT	Commission,	
			for Large	Seville	
			<b>Combustion Plants</b>		
22.2	Supp	lemental Instruction Materials			
	No.	Author	Title	Publisher	Year
	1.	Warner, Davis and Wark	Air Pollution: Its	Addison-	2003
			Origin and Control,	Wesley-	
			3 <sup>rd</sup> Edition	Longman	
	2.	Petrovski I. J.	Steam Boilers, 2nd	UKIM	2009
			ed.		
	3.	Baukal C.E. et al.	Heat Transfer in	CRC Press	2000
			Industrial		
			Combustion		

17. List of the teaching staff, including the data stated in Article 5 of the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 25/2011) and the Rulebook on Changes and Amendments of the Rulebook on the Mandatory Components of the Study Programmes of the First, Second, and Third Cycle ("Official Gazette of the Republic of Macedonia" No. 154/2011)

The following professors participate in the realisation of the Sustainable Energy and Environment study programme:

- 1. Professor Dusan Chakmakov, PhD
- 2. Professor Atanasko Tuneski, PhD
- 3. Professor Aleksa Malcheski, PhD
- 4. Professor Valentino Stojkovski, PhD
- 5. Professor Nikola Tuneski, PhD
- 6. Professor Atanas Kochov, PhD
- 7. Professor Done Tashevski, PhD
- 8. Professor Risto Filkoski, PhD
- 9. Professor Zoran Markov, PhD
- 10. Prof. dr. Laze Trajkovski
- 11. Associate Professor Ana Lazarevska, PhD
- 12. Associate Professor Emilija Celakoska, PhD
- 13. Associate Professor Ana Frichand, PhD, Faculty of Phylosophy-Skopje
- 14. Associate Professor Dame Dimitrovski, PhD
- 15. Associate Professor Darko Babunski, PhD
- 16. Associate Professor Emil Zaev, PhD
- 17. Associate Professor Bojan Prangoski, PhD
- 18. Assistant Professor Igor Shesho, PhD
- 19. Assistant Professor Viktor Iliev, PhD

When needed, teaching staff members from other organisational units (institutes, departments) of the Faculty of Mechanical Engineering in Skopje, as well as from other higher education institutions, take part in the realization of the instruction, pursuant to the legal procedure for election of course programmes and engagement of teaching staff in the instruction process. The Educational and Scientific Board of the Faculty pays special attention to securing that the provisions of the Law on Higher Education regarding the workload of the teaching staff members are met.

Add	. 4	In	nformation about	t the teache	ers that lec	ture at the first, see	cond and third study program		
				and	are mento	rs on the doctoral t	hesis		
1.	Name (I	First, l	Last)	Dushan C	hakmakov				
2.	Date of	birth		18.02.195	9				
3.	Scientif	ic deg	ree / Title	Ph.D.					
4.	Title of	the sc	ientific degree	Ph.D. in T	echnical Sc	ciences/Computer So	r Science		
5.	Year an	d insti	itution of the	Education		Year	Institution		
	scientifi	ic degi	ree	B.S. in Ma and Inform	athematics natics	1982	Faculty of Mathematics, University Ss. Cyril and Methodius, Skopje		
				M.S. in Computer Science		1988	Faculty of Electrical Engineering and Computer Science, Skopje		
				Ph.D. in Computer Science		1992	Faculty of Electrical Engineering and Computer Science, Skopje		
6.	Area, fie	eld an	d particular	Area		Field	Specialty		
	specialt degree	y of m	naster of science	Informatics		Programming Languages	Compilers		
7.	Area, fie	eld an	d area of	Area		Field	Specialty		
	doctoral	l degre	ee	Informatics		Information	Searching in Multimedia		
						Systems	Information		
8.	If emplo	byed, s	state the	Institution			Title and area		
	instituti	on wh	ere he/she	Faculty of	Mechanica	1 Engineering	Professor		
	works a	nd the	e title and area	Dept of $\Lambda$	Internation	and Informatics	110103501		
	in which	h is na	umed	University	"Ss. Cvril	and Methodius"			
9.	List of c	course	s that the teacher	is lecturing	separately	for first, second and	third cycle		
	9.1.	List o	of courses that the	teacher is l	ecturing in	the first cycle	2		
		No.	Course			Study program/inst	titution		
		1.	Data Bases			Production Informatics/Fac. of Mechanical En			
		2.	Probability and	l Statistics		Industrial Engineering and Management/ Fac. of Mechanical Eng			
		3.	Programming 1	Languages		Production Information	atics/Fac. of Mechanical Eng.		
	9.2.	List o	of courses that the	teacher is l	ecturing in	the second cycle	C		
		No.	Course			Study program/inst	titution		
		1.	Selected Topic	s in Inform	atics	All/ Fac. of Mecha	nical Eng.		
		2.	System Softwa	re		Mechatronics/ Fac.	of Mechanical Eng.		
	9.3.	List o	of courses that the	teacher is l	ecturing in	the third cycle			
		No.	Course			Study program/inst	titution		
		1.	Advanced Con	nputer Prog	ramming	All/ Fac. of Mecha	nical Eng.		
		2.	Artificial Intell	igence and		All/ Fac. of Mecha	nical Eng.		
10.	Selected	l work	in the past five y	ears					
	10.1.	Relev	ant scientific prir	ited paper (i	up to 5)				
	_	No.	Author		Title		Publisher/year		
		1.	Celakoska E., C	akmakov	Lorentz L	ink Problem and	Proceedings of the Fourth Int.		
			D.		Solutions		Scientific Conference FMNS,		
							Blagoevgrad, Vol.1, 2011, 16-21.		
	10.2.	Partic	cipation in scienti	fic national	and interna	ational projects (up t			
	[	No.	Author		Title		Publisher/year		

		1.							
	10.3.	Printe	d books in the last five y	ears (	(up to 5)				
		No.	Author		Title		Publisher/year		
		1.	Chakmakov D.		Probability and Statistics	for	University Ss. Cy.	ril and	
					Engineers		Methodius, Skopj	e, (in Print)	
	10.4.	Printe	d professional papers in	the la	st 5 years (up to 5)				
		No.	Author	1	Title		Publisher/year		
		1.							
11.	Superv	vision (n	nentorship) of undergrad	rship) of undergraduate, master and doctoral studies students					
	11.1.	Underg	graduate		/				
	11.2.	Master	•		/				
	11.3.	Doctor	al						
12.	For me	ntors of	doctoral thesis, selected	ars					
	12.1.	Proof	of printed scientific pape	ers in	international scientific jou	urnal	s or international p	ublications	
		in the	related field (up to 6) in	the p	ast five years				
		No.	Author		Title		Publisher/year		
		1.							
	12.2.	Proof	of at least two printed sc	ientif	fic papers in international	scier	ntific journals that h	ave impact	
		factor	in the related field in the	e past	five years				
		No.	Author		Title		Publisher/year		
		1.							
	12.3.	Proof	of at least three internati	ational meetings' participation in the past four years					
		No.	Author	Title	e	Inte	ernational	year	
						mee	eting/conference		
		1.							

Add	. 4	In	formation ab	out the teachers tha and are m	t lect	ture at the first, se rs on the doctoral	cond and third study program thesis		
1.	Name (Fi	irst, L	ast)	Atanasko Tuneski					
2.	Date of b	oirth	,	22.01.1965					
3.	Scientific	c degr	ee / Title	Ph.D./ Professor					
4.	Title of the scientific		entific	Ph.D. in Technical	Scier	ices			
5.	Year and institution of the		ution of the	Education	Yea	r	Institution		
	scientific degree		e	Ph.D	199	7	Faculty of Mechanical Engineering - Skopje		
				M.Sc	1993	3	Faculty of Mechanical Engineering - Skopje		
				B.Sc	198	9	Faculty of Mechanical Engineering - Skopje		
6.	Area, fiel	ld and	particular	Area	Fiel	d	Specialty		
	specialty	of ma	ster of	Technical	Med	chanical	Control Systems		
	science d	legree		Sciences	Eng	ineering			
7.	Area, fiel	ld and	area of	Area	Fiel	d	Specialty		
	doctoral	degree	e	Technical	Mec	chanical	Control Systems		
				Sciences	Eng	ineering			
8.	If employ	yed, st	ate the	Institution			Title and area		
	institution where he/she works and the title and area in which is named		re he/she title and area ned	Faculty of Mechanical Engineering – Skopje		Engineering –	Full Professor, Automation		
9.	List of courses that the teach		that the teach	er is lecturing separa	tely f	or first, second and	third cycle		
	9.1. List of courses that		courses that t	he teacher is lecturin	ig in t	he first cycle			
	Ν	No.	Course			Study program/ins	stitution		
	1	•	Systems and	Control		All programs at th	e Faculty of Mechanical		
						Engineering – Sko	opje		

						46
		2.	Optimal Energetic Syst	tems	Energetics and Ec Engineering – Sko	ology/ Faculty of Mechanical
		3.	Environmental Monitor Control	ring and	Environmental an	d Resources Engineering Studies
		4.	Automatic Control Sys	tems	Automatics and C Mechanical Engin	ontrol Systems, Faculty of eering – Skopje
		5.	Digital Control System	S	Automatics and C Mechanical Engin	ontrol Systems, Faculty of evering – Skopie
	9.2.	List o	of courses that the teacher	is lecturing in	the second cycle	<u> </u>
		No.	Course	U	Study program/ins	stitution
		1.	Control of Dynamic Sy	stems	Automatics and C Mechanical Engin	ontrol Systems, Faculty of evering – Skopie
		2.	Environmental Systems	s Analysis	Environmental an	d Resources Engineering Studies
	9.3.	List o	of courses that the teacher	is lecturing in	the third cycle	CC
		No.	Course	U	Study program/ins	stitution
		1.	Advanced Control of D Systems	ynamic	Mechanical engin Engineering	eering/Faculty of Mechanical
		2.	Advanced Computer C Systems and Processes	ontrol of	Mechanical engin Engineering	eering/Faculty of Mechanical
10.	Selecte	ed work	in the past five years			
	10.1.	Relev	ant scientific printed pape	er (up to 5)		
		No.	Author	Title		Publisher/year
		1.	Babunski D, Tuneski A., Zaev E.		Simulation of load	IEEE Conference on Embedded Computing
					rejection on a	(MECO), June 2012, Bar, Monte Negro
					nonlinear Hydro	
					Power	
					Plant	
					model	
					with	
					mixed	
					mode	
					nonlinear	
					controller	
					controller	
		2	A Tuneski et al	Development	t of an	SEFI 42 <sup>nd</sup> Annual Conference
		2.	The function of un	Environment	al and Resources	September 2014 Birmingham
				Engineering		United Kingdom
				Learning		
		3	A.Tuneski et al	Environment	al engineering	SEFI 41 <sup>st</sup> Annual Conference
		5.		curricula dev	elopment	September 2013, Leuven, Belgium
		4	Emil Zaev, Gerhard	HPP Simulat	or for Real-Time	6th Annual SEE Conference
		ч.	Path Atapasko	Simulation a	nd SCADA	Infusing Research and
			Tuposki at al	Software Tes	sting	Knowledge in South-East
			Tuneski et al.			Europe, September, 2011, Thessaloniki, Greece
		5.	A.Tuneski et al.	Development Environment Engineering	t of an al and Resources	SEFI 40 <sup>th</sup> Annual Conference, September 2012, Thessaloniki, Greece

ID2.         Patricipation in scientific national and international projects (up to 5)         Publisher/year           1.         A. Tuneski         Development of Environmental (Coordinator)         Publisher/year           2.         A. Tuneski         Monitoring and Improving Rivers in Vardar/Axios         NATO Science, TEMPUS IV           10.3.         Printed books in the last five years (up to 5)         NATO Science for Peace Project, 2006-2010, StP           10.3.         Printed books in the last five years (up to 5)         Publisher/year           10.4.         Printed professional papers in the last 5 years (up to 5)           No.         Author         Title         Publisher/year           11.         Supervision (mentorship) of undergraduate, master and doctoral studies students         Title           11.1.         Undergraduate         more than 20         Primetors of doctoral thesis, selected work for the last fore years           12.         Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years         Publisher/year           12.         Proof of printed scientific papers in international scientific journal of Energetics, Journal of Association of Energy Scient, No. 2, year XIII, March 2011, ISSN 0354-8661, UDC: 621.224.011:62-5, pp.85-89.           12.         Proof of at least two printed scientific papers in intermational scientific journal of Energetics, Journal		10.0							4
No.         Author         Title         Publisher/year           1.         A.Tuneski         Development of Environment         EU Directorate for Education and Science, TEMPUS IV           2.         A.Tuneski         Monitoring and Improving (Coordinator)         NATO Science for Peace Project, 2006-2010, SfP           10.3.         Printed books in the last five years (up to 5)         No.         Author           11.         N. Tuneski,         E. Towards a New Curriculum: The DEREC Experience         Publisher/year           10.4.         Printed professional papers in the last 5 years (up to 5)         No.         Author           11.         Undergraduate, master and doctoral studics students         Firenze University Press, 2009           11.1.         Undergraduate, master and doctoral studics students         11.1           11.1         Undergraduate, master and doctoral studics students         11.1           11.1         Undergraduate         3 (three)         12.           12.         Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years         Journal of Energetics, Journal of Association of Energetics, Journal of Association of Energetics, Journal of Students of Technology, 2009           12.         Proof of at least two printed scientific papers in international scientific journals of Energetics, Journal of Students of Tec		10.2.	Partic	ipation in scientific r	ation	al and international projects	s (up to	<u>() 5)</u>	
1.         A.Tuneski (Coordinator)         Development of Environmental and Resources Engineering Learning.         Ist Directorate for Elducation and Science, TEMPUS IV           2.         A.Tuneski (Coordinator)         Monitoring and Improving Rivers in Vardat/Axios         NATO Science for Peace Project, 2006-2010, SfP 981877           10.3.         Printed books in the last five years (up to 5) No.         Tutles         Publisher/year           10.4.         Printed professional papers in the last 5 years (up to 5)         For the DEREC Experience         Publisher/year           10.4.         Printed professional papers in the last 5 years (up to 5)         For the DEREC Experience         For the DEREC Experience           11.1.         Master         3 (three)         1         1           11.2.         Master         3 (three)         1           12.1.         Proof of printed scientific papers in international scientific journal or international publications in the related field (up to 6) in the past five years         1           12.         Proof of printed scientific papers in international scientific journal of Energetics, Journal of Association of Energy Sector, No. 2, year XIII. March 2011, ISSN 0534-8651, UDCC- 202, 224.011:62-5, pp.85-89.           12.         Proof of at least two printed scientific papers in international scientific journals of Energetics, Journal of Students of Technology, 2009           12.2.         Proof of at least two printed scientific papers in inte			No.	Author		Title		Publisher/year	
Image: second			1.	A.Tuneski		Development of Environme	ental	EU Directorate fo	or Education
Learning         NATO Science for Peace Project, 2006-2010, SIP 981877           10.3.         Printed books in the last five years (up to 5) No.         Publisher/year           10.4.         Printed books in the last five years (up to 5) No.         Publisher/year           10.4.         Printed profesional papers in the last 5 years (up to 5) No.         Publisher/year           10.4.         Printed profesional papers in the last 5 years (up to 5)         Publisher/year           11.         Supervision (mentorship) of undergraduate, master and doctoral studies students         11.1.           11.1.         Undergraduate         more than 20           11.2.         Master         2 (two)           For mentors of doctoral thesis, selected work for the last four / five years         Publisher/year           12.1         Master         1 durbor         Title           12.1.         Master         2 (two)         Sector, No.2, year XIII. Master           12.1.         Master         3 dthree)         Journal of Energetics, Journal of Sociation of Energetics, Journal of Sociation, publisher/year           12.1				(Coordinator)		and Resources Engineering		and Science, TEN	APUS IV
2.         A. Tuneski (Cordinator)         Monitoring and Improving Watershed         NATO Science for Pace Project, 2006-2010, SIP 981877           10.3.         Printed books in the last five years (up to 5)         Publisher/year         France University Press, 2009           10.4.         Printed professional papers in the last 5 years (up to 5)         Publisher/year         France University Press, 2009           10.4.         Printed professional papers in the last 5 years (up to 5)         France University Press, 2009           10.4.         Printed more than 20         Title         Publisher/year           11.         Undergraduate         more than 20         France           11.1.         Undergraduate, master and doctoral studies students         France         France           11.1.         Undergraduate         2 (two)         For mentors of doctoral thesis, selected work for the last four / five years         For mentors of doctoral the pass, selected work for the last four / five years         Journal of Energetics, Journal of Sciencia, Journal of Sciencia, Journal of Studies, Journal of Sciencia, Journal of Studies, Journal of Studies, Journal of Studies, Journal of Studies, Journal of Sciencia, Journal of Studies, Journal Sciencia, Journal of Studies, Journal Step - Song Sciencia, Journal of Studies, Journal Step - Song Sciencia, Journal of Studies, Journal of Sciencia, Journal of Studies, Journal of Sciencia, Journal of Studies, Journal Journal of Scienci, Journal Journal Step - Song S			-			Learning			
Image: Second			2.	A.Tuneski		Monitoring and Improving		NATO Science for	or Peace
Image: Instruct Sector Secto				(Coordinator)		Rivers in Vardar/Axios		Project, 2006-201	10, SfP
10.3.       Printed books in the last five years (up to 5)       Publisher/year         1.       A.       Tuneski, E.       Towards a New Curriculum: The DEREC Experience       Firenze University Press, 2009         10.4.       Printed professional papers in the last 5 years (up to 5)       Publisher/year       Image: Comparison of the last 5 years (up to 5)         10.5.       No.       Author       Title       Publisher/year         11.       Supervision (mentorship) of undergraduate, master and doctoral studies students       Image: Comparison of the stat 5 years (up to 5)         11.1.       Undergraduate       more than 20       Image: Comparison of the stat 5 years (up to 5)         11.2.       Master       3 (hree)       Image: Comparison of the stat 5 years (up to 5)         11.3.       Doctoral       2 (two)       For mentors of doctoral thesis, selected work for the last four / five years         12.1.       No.       Author       Title       Publisher/year         12.1.       A.Tuneski et al.       Design of Robust Control       Journal of Energy Science, No. 2, year XIII, March 2011, ISSN 0354-8651, UDC: 621, 224011;625-50, pp.85-89, 202, 212, 24011;625-50, pp.85-89, 202, 212, 24011;625-50, pp.85-89, 202, 2029       2021         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       No. <t< td=""><td></td><td></td><td></td><td></td><td></td><td>Watershed</td><td></td><td>981877</td><td></td></t<>						Watershed		981877	
No.         Author         Title         Publisher/year           I.         A.         Tuneski, E.         Towards a New Curriculum: The DEREC Experience         Firenze University Press, 2009           10.4         Printed professional papers in the last 5 years (up to 5)         Publisher/year         Firenze University Press, 2009           11.         Supervision (mentorship) of undergraduate, master and doctoral studies students         11.1         Undergraduate         more than 20           11.1.         Undergraduate         more than 20         11.1         Doctoral         2 (two)           For mentors of doctoral thesis, selected work for the last four / five years         11.1         Doctoral         2 (two)           12.         11.3         Doctoral         2 (two)         Publisher/year           12.         1.         Artuneski et al.         Design of Robust Control Law for Hydroturbine and SCADA Simulation         formal of Energy Sector, No.2, year XIII, March 2011, ISSN 0354-8651, UDC 621.224011:62-5, pp.85-89.           2.         A.Tuneski         Adaptive Control of Multiple Robots Manipulation on Dynamic Environment         Macedonia and BEST - Board of Students of Technology, 2009           12.3         Proof of at least three international meetings' participation in the past four years         No.         Author         Title         Publisher/year           12.3		10.3.	Printe	d books in the last fiv	ve yea	rs (up to 5)			
I.         A.         Tuneski, E.         Towards a New Curriculum: The DEREC Experience         Firenze University Press, 2009           10.4.         Printed professional papers in the last 5 years (up to 5)         Publisher/year         Publisher/year           1.         Supervision (memtorship) of undergraduate, master and doctoral studies students         Publisher/year         Publisher/year           11.1.         Undergraduate         more than 20         Publisher/year           11.2.         Master         3 (three)         Publisher/year           12.1         Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years         Publisher/year           12.1         Proof of printed scientific papers in international scientific journals of association of Energy SCADA Simulation         ScADA Simulation         ScaDF (224:011:62-5; p. 9.85-61; UDC; 621:224:011:62-5; p. 9.85-61; UDC; 621:224:011:62-5; p. 9.85-61; UDC; 621:224:011:62-5; p. 9.85-78-0 and of Students of Technology, 2009           12.2.         Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years         No.         Author           12.3         Proof of at least three international meetings' participation in the past four year         International           12.4         Proof of at least three international meetings' participation in the past four year <td></td> <td></td> <td>No.</td> <td>Author</td> <td></td> <td>Title</td> <td></td> <td>Publisher/year</td> <td></td>			No.	Author		Title		Publisher/year	
Image         Caporali         The DERCE Experience           10.4         Printed professional papers in the last 5 years (up to 5)         Publisher/year           1.         No.         Author         Title         Publisher/year           1.         Supervision (mentorship) of undergraduate, master and doctoral studies students         11.1.         Undergraduate         more than 20           11.1.         Undergraduate         3 (three)         11.1.         Doctoral         2 (two)           For mentors of doctoral thesis, selected work for the last four / five years         10.1.         Doctoral         2 (two)           12.1         Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years         Journal of Energy Sector, No.2, year XIII, March 20 (J1.1, ISSN 0354-8651, UDC (21.224.011:62-5, pp.85-89).           2.         A.Tuneski         Adaptive Control of Multiple         ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009           12.2.         Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years           No.         Author         Title         Publisher/year           12.3         Proof of at least three intermational meetings' participation in the past four years         No.			1.	A. Tuneski,	E.	Towards a New Curriculum	1:	Firenze Universit	y Press, 2009
10.4.       Printed professional papers in the last 5 years (up to 5)       Publisher/year         10.       No.       Author       Title       Publisher/year         11.       Undergraduate       more than 20       Interprint       In				Caporali		The DEREC Experience			
No.         Author         Title         Publisher/year           11.         Supervision (mentorship) of undergraduate, master and doctoral studies students         11.1.         Undergraduate         more than 20           11.1.         Undergraduate         more than 20         11.2.         Master         3 (three)           11.2.         Master         3 (three)         11.2.         Master         3 (three)           11.2.         Doctoral         tesis, selected work for the last four / five years         Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years         Publisher/year           12.         1.         A.Tuneski et al.         Design of Robust Control Law for Hydroturbine and SCADA Simulation         Journal of Energetics, Journal of Association of Energy Sector, No.2, year XIII, March 2011, ISSN 03-2, year XIII, March 2011, ISSN 03-2, wear XIII, March 2011, ISSN 03-48651, UDC.           2.         A.Tuneski         Adaptive Control of Multiple Robots Manipulation on Dynamic Environment         ROBOMAC publication, published by IEEE Branch Macdonia and BEST – Board of Students of Technology, 2009           12.2.         Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years         International         Year meeting/conference           12.3.         Proof of at least three intermational		10.4.	Printe	d professional papers	in the	e last 5 years (up to 5)			
I.       Image: Ima: Image: Ima: Image: Image: Ima: Image: Image: Image: I			No.	Author		Title		Publisher/year	
11.       Supervision (mentorship) of undergraduate more than 20         11.1.       Undergraduate more than 20         11.2.       Master         11.3.       Doctoral         12.       Master         11.3.       Doctoral thesis, selected work for the last four / five years         12.       Proof of printed scientific papers in intermational scientific journals or international publications in the related field (up to 6) in the past five years         12.       No.       Author         1.       A.Tuneski et al.       Design of Robust Control Law for Hydroturbine and SCADA Simulation       Journal of Energetics, Journal of Association of Energy Sector, No. 2, year XIII, March 2011, ISSN 054-8651, UDC: 621.224.011:62-5, pp.85-89.         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBOMAC publication, Publisher/year 10.0000, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       No. Author       Title       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years       International meetings' participation in the past four years       Vcar         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference       2012			1.					÷	
11.1.         Undergraduate         more than 20           11.2.         Master         3 (three)           11.3.         Doctoral         2 (two)           For mentors of doctoral thesis, selected work for the last four / five years         12.1.           12.1.         Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years         12.1.           12.1.         Author         Title         Publisher/year           1.         A.Tuneski et al.         Design of Robust Control Law for Hydroturbine and SCADA Simulation         Journal of Energetics, Journal of Scociation of Energy Scotr, No.2, year XIII, March 2011, ISSN 0354-8651, UDC: 621.224.011:62-5, pp.85-89.           2.         A.Tuneski         Adaptive Control of Multiple Robots Manipulation on Dynamic Environment         ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009           12.2.         Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years         No.           No.         Author         Title         Publisher/year           1.         Iterational meetings' participation in the past four years         No.           No.         Author         Title         International meeting/conference           1.         Bab	11.	Superv	vision (r	nentorship) of underg	gradua	ate, master and doctoral stud	dies stu	udents	
11.2.       Master       3 (three)         11.3.       Doctoral       2 (two)         For mentors of doctoral thesis, selected work for the last four / five years       Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years       Publisher/year         12.1.       Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years       Publisher/year         12.1.       A.Tuneski et al.       Design of Robust Control Law for Hydroturbine and SCADA Simulation       Journal of Energetics, Journal of Science, Sociation of Energy Sector, No.2, year XIII, March 2011, ISSN 0354-8651, UDC: 621.224.011:62-5, pp.85-89.         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBMAC publication, published by IEEE Branch Macodinia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       ROBMAC publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference         10.       Author       Title       Publisher/year		11.1.	Under	graduate		more than 20			
11.3.         Doctoral         2 (two)           For mentors of doctoral thesis, selected work for the last four / five years         12.1.         Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years         Publisher/year           12.         12.1.         A.Tuneski et al.         Design of Robust Control Law for Hydroturbine and SCADA Simulation         Journal of Energy Sector, No.2, year XIII, March 2011, ISSN 0354-8651, UDC: 021.224.011:62-5, pp.85-89.           12.         A.Tuneski         Adaptive Control of Multiple Robots Manipulation on Dynamic Environment         ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009           12.2.         Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years           No.         Author         Title         Publisher/year           12.3.         Proof of at least three international meetings' participation in the past four years         Year           12.3.         Proof of at least three international meetings' participation in the past four years         Year           12.3.         Proof of at least three international meetings' participation in the past four years         Year           12.3.         Proof of at least three international meetings' participation in the past four years         Year           12.3.		11.2.	Master	r		3 (three)			
For mentors of doctoral thesis, selected work for the last four / five years         12.       Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years       Publisher/year         10.       A.Tuneski et al.       Design of Robust Control Law for Hydroturbine and SCADA Simulation       Journal of Energetics, Journal of Association of Energy Sector, No.2, year XIII, March 2011, ISSN 0354-8651, UDC: 621.224.011:62-5, pp.85-89.         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       ROBOMAC publication, Macedonia and BEST – Board of Students of Technology, 2009         12.3.       Proof of at least three international meetings' participation in the past four years       International meetings' participation in the past four years         No.       Author       Title       Publisher/year       2012         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power Plant model with mixed mode nonlinear controller       IEEE Conference on Environmental and Resources Engineering Learning       2012.Monte Negro         2.       A.Tuneski et al.       Environmental and Resources Engineering Curricula developme		11.3.	Doctor	ral		2 (two)			
12.1.       Proof of printed scientific papers in international scientific journals or international publications in the related field (up to 6) in the past five years       Publisher/year         10.1.       A.Tuneski et al.       Design of Robust Control Law for Hydroturbine and SCADA Simulation       Journal of Energetics, Journal of Association of Energy SCADA Simulation         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       Publisher/year         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       Publisher/year         12.3.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years       Publisher/year         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power Plant model with mixed mode nonlinear controller       Publisher/year         2.       A.Tuneski et al.       Environmental and Resources Engineering Large Annual Conference, September 2014, Birmingham, United Kingdom       2012         4.       Emil Zaev, Gerhard Rath, Attanasko Tuneski Zarge Zave, Simulation for Real-Time Simulation and SCADA       Software Testing Research and Scape Plant model Resources September 2013, Leaven, Belgium       2014 <td></td> <td>For me</td> <td>ntors of</td> <td>doctoral thesis selec</td> <td>ted w</td> <td>ork for the last four / five v</td> <td>vears</td> <td></td> <td></td>		For me	ntors of	doctoral thesis selec	ted w	ork for the last four / five v	vears		
International problem in the past five years       Publisher/year         No.       Author       Title       Publisher/year         I.       A.Tuneski et al.       Design of Robust Control Law for Hydroturbine and SCADA Simulation       Publisher/year         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years         No.       Author       Title       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years       International Macedonia and BEST – Board of Students of Technology, 2009         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear controller       IEEE Conference on Embedded       2012         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 41 <sup>st</sup> Annual Simulation and SCADA       2014         4.       Emil Zaev, Gerhard Rath, Attanasko Tuneski Scatuare Testing       Software Testing Software Testing       Software Testing Software Te	12	12.1	Proof	of printed scientific r	aners	in international scientific i	ournal	s or international i	oublications
No.       Author       Title       Publisher/year         1.       A.Tuneski et al.       Design of Robust Control Law for Hydroturbine and SCADA Simulation       Journal of Energetics, Journal of Association of Energy Sector, No.2, year XIII, March 2011, ISSN 0354-8651, UDC: 621.224.011:62-5, pp.83-89.         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international factor in the related field in the past five years       Publisher/year         No.       Author       Title       Publisher/year         1.       Iterational meetings' participation in the past for years       Vear         No.       Author       Title       International meeting/conference       2012         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power E.       IEEE Conference on Engineering Learning       2012.         2.       A.Tuneski et al.       Environmental and Resources Engineering       SEFI 42 <sup>ed</sup> Annual Conference, September 2014, Birmingham, United Kingdom       2014         4.       Emil Zaev, Gerhard Rath, Attanasko Tuneski Software Testing       Everlopment of Real-Time Software Testing       Steft 41 <sup>st</sup> Annual Conference: Infusing       2011	12.	12.1.	in the	related field (up to 6)	in th	e past five years	ournui	s of international j	Juoneutions
10.       Attacki et al.       Design of Robust Control Law for Hydroturbine and SCADA Simulation       Journal of Energy Sector, No. 2, year XIII, March 2011, ISSN 0354-8651, UDC: 621.224.011:62-5, pp.85-89.         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years No.       Author       Title       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years No.       Simulation of load rejection on anonlinear thydro Power       Iternational meeting/conference       Year         12.3.       Proof of at least three international meetings' participation in the past four years No.       Simulation of load rejection on anonlinear controller       Iternational meeting/conference       2012         1.       Babunski D, Tuneski A., Zaev E.       Simulation of load rejection onnlinear controller       IEEE Conference on 2012, Monte Negro       2014         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 41 <sup>ad</sup> Annual Conference, September 2014, Birmingham, United Kingdom       2014         3.       A.Tuneski et al.       Environmental engineering Cerhard Rath, Atanasko Tuneski Simulation and SCADA       2011<			No	Author	, III (II	Title		Publisher/vear	
1.       A.Tuneski et al.       Design of Rydous Control Law for Hydroturbine and SCADA Simulation       of Association of Energy Sector, No.2, year XIII, March 2011, ISSN 0354-8651, UDC: 621.224.011:62-5, pp.85-89.         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years No.       Title       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years No.       Simulation of load rejection on a nonlinear Hydro Power E.       International meeting/conference Plant model with mixed mode nonlinear controller       IEEE Conference on 2012_Monte Negro       2012         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 42 <sup>nd</sup> Annual Conference, September 2014, Birmingham, United Kingdom       2014         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski       HPP Simulator for Real-Time Simulation and SCADA Conference       2011			1	A Tuneski et al		Design of Robust Contr	·ol	Iournal of Energe	etics Iournal
12.2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       Sctor, No.2, year XIII, March 2011, ISSN 0354-8651, UDC: 621.224.011:62-5, pp.85-89.         2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBOMAC publication, Published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       ROBOMAC publisher/year         1.       Item       Publisher/year         1.       Proof of at least three international meetings' participation in the past four years         No.       Author       Title         12.3.       Proof of at least three international meetings' participation in the past four years         No.       Author       Title         12.3.       Proof of at least three international meetings' participation in the past four years         No.       Author       Title         12.3.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power Plant model with mixed mode nonlinear controller       IEEE Conference on 2012,Monte Negro         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 42 <sup>rd</sup> Annual Conference, September 2014, Birmingham, United Kingdom         3. <td></td> <td></td> <td>1.</td> <td>A. I uneski et al.</td> <td></td> <td>Levy for Hydrotyrhine o</td> <td>nd</td> <td>of Association of</td> <td>Fnergy</td>			1.	A. I uneski et al.		Levy for Hydrotyrhine o	nd	of Association of	Fnergy
SCADA Simulation       Sector, Scale and Market Science, Scale and Science						Law for Hydroturbine a	na	Sector No 2 yea	r XIII March
2.       A.Tuneski       Adaptive Control of Multiple Robots Manipulation on Dynamic Environment       ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international factor in the related field in the past five years       Publisher/year         No.       Author       Title       Publisher/year         1.       International meeting/conference       Year         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference       Year         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power Plant model with mixed mode nonlinear controller       IEEE Conference on 2012,Monte Negro       2012         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 42 <sup>nd</sup> Annual Conference, September 2014, Birmingham, United Kingdom       2014         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski       HPP Simulator for Real-Time Simulation and SCADA       6th Annual SEE Conference: Infusing Research and       2011						SCADA Simulation		2011 ISSN 0354	
2.     A.Tuneski     Adaptive Control of Multiple Robots Manipulation on Dynamic Environment     ROBOMAC publication, published by IEEE Branch Macedonia and BEST – Board of Students of Technology, 2009       12.2.     Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years     Publisher/year       12.3.     Proof of at least three international meetings' participation in the past four years       No.     Author     Title       1.     Babunski D, Tuneski A., Zaev     Simulation of load rejection on a nonlinear Hydro Power Plant model with mixed mode nonlinear controller     IEEE Conference on Embedded Computing (MECO), June 2012,Monte Negro       2.     A.Tuneski et al.     Development of an Environmental and Resources Engineering Learning     SEFI 41 <sup>sd</sup> Annual Conference, September 2014, Birmingham, United Kingdom       3.     A.Tuneski et al.     Environmental engineering curricula development     SEFI 41 <sup>sd</sup> Annual Conference, September 2013, Leuven, Belgium       4.     Emil Zaev, Gerhard Rath, Atanasko Tuneski     HPP Simulator for Real-Time Software Testing     6th Annual SEE Conference: Infusing Research and								2011, ISSN 0334	-8031, 0DC.
2.       A. Tuneski       A. Tuneski       A. Tuneski       A. Tuneski       A. Tuneski       A. Tuneski et al.       Robots Manipulation on Dynamic Environment       Robots Manipulation on Dynamic Environment       Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       Publisher/year       Image: Comparison of Students of Technology, 2009         12.3.       Proof of at least three international meetings' participation in the past four years       International       Year         12.3.       Proof of at least three international meetings' participation in the past four years       International       Year         12.3.       Proof of at least three international meetings' participation in the past four years       International       Year         12.3.       Proof of at least three international meetings' participation in the past four years       International       Year         12.3.       Proof of at least three international meetings of a nonlinear Hydro Power       International       Year         12.3.       Proof of at least three international meetings of a nonlinear controller       International       Year         12.3.       A. Tuneski et al.       Development of an Environmental and Resources Engineering Conference, September 2014, Birmingham, United Kingdom       September 2014, Leaven, Septe			2	A Tungalai		Adaptive Control of Multi	inla	DOPOMAC pub	, pp.85-89.
12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       Macedonia and BEST – Board of Students of Technology, 2009         12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       Publisher/year         No.       Author       Title       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years       Year         No.       Author       Title       International meeting/conference       Year         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference       Year         12.3.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power       IEEE Conference on Embedded       2012         1.       Babunski D, Tuneski et al.       Development of an Environmental and Resources Engineering Learning       September 2014, Birmingham, United Kingdom       2014         2.       A.Tuneski et al.       Environmental engineering curricula development       Conference, September 2013, Leuven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski Software Testing       Software Testing       Gerhard Rath, Simulator for Real-Time Software Testing       6th A			۷.	A. I UHESKI		Repeter Manipulation on	ipie	nublished by IEE	E Propoh
12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       Publisher/year         10.       Author       Title       Publisher/year         1.       International       Year         12.3.       Proof of at least three international meetings' participation in the past four years       International         12.3.       Proof of at least three international meetings' participation in the past four years       International         12.3.       Proof of at least three international meetings' participation in the past four years       International         12.3.       Proof of at least three international meetings' participation in the past four years       Year         11.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power       IEEE Conference on Embedded       2012         2.       A.Tuneski et al.       Development of an Environmental and Resources       SEFI 42 <sup>rd</sup> Annual Conference, September 2014, Birmingham, United       2014         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski       HPP Simulator for Real-Time Software Testing       6th Annual SEE Conference: Infusing Research and       2011						Dynamic Environment		Macadonia and B	E DIAIICII EST Board
12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       Publisher/year         No.       Author       Title       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years       Year         No.       Author       Title       International meeting/conference       Year         12.3.       Proof of at least three international meetings' participation in the past four years       Year         No.       Author       Title       International meeting/conference       Year         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power       IEEE Conference on 2012       2012         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 41 <sup>ad</sup> Annual Conference, September 2014, Birmingham, United Kingdom       2013         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leaven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Gerhard Rath, Atanasko Tuneski Software Testing       Software Testing       Gerhard Rath, Atanasko Tuneski Software Testing       Gerhard Rath, Software Testing						Dynamic Environment		of Students of To	abrology
12.2.       Proof of at least two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years         No.       Author       Title       Publisher/year         1.       Proof of at least three international meetings' participation in the past four years       International meeting/conference         12.3.       Proof of at least three international meetings' participation in the past four years       Year         12.3.       Proof of at least three international meetings' participation in the past four years       Year         12.4.       Proof of at least three international meetings' participation in the past four years       Year         12.3.       Proof of at least three international meetings' participation in the past four years       Year         12.4.       Proof of at least three international meetings' participation in the past four years       Year         12.4.       Babunski D,       Simulation of load rejection on a nonlinear Hydro Power       International meeting/conference       2012         1.       Babunski A., Zaev       Plant model with mixed mode nonlinear controller       Immediate (MECO), June 2012, Monte Negro       2014         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 41 <sup>ad</sup> Annual Conference, September 2014, Engineering Curricula development       Seff 41 <sup>ad</sup> Annual Conference, September 2013, Leuven, Belgium									ciniology,
12.2.       Floor of a teast two printed scientific papers in international scientific journals that have impact factor in the related field in the past five years       Publisher/year         No.       Author       Title       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference         No.       Author       Title       International meeting/conference         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power       IEEE Conference on Plant model with mixed mode nonlinear controller       Computing (MECO), June 2012, Monte Negro         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 42 <sup>nd</sup> Annual Conference, September 2014, Birmingham, United Kingdom       2013         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leaven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski Software Testing       Software Testing       Gerhard Rath, Software Testing       Gerhard Rath, Software Testing       Conference: Infusing		12.2	Droof	of at least two prints	1 soio	ntific papars in international	1 scion	2009	hava impact
No.       Author       Title       Publisher/year         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference         12.3.       Proof of at least three international meetings' participation in the past four years       International meeting/conference         10.       Author       Title       International meeting/conference         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power       IEEE Conference on Embedded       2012         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 42 <sup>nd</sup> Annual Conference, September 2014, Birmingham, United Kingdom       2013         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leaven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski Software Testing       Simulation and SCADA       Conference: Infusing Research and Setearch and Setear		12.2.	factor	in the related field in	tho n	nume papers in internationa		unic journais mat	nave impact
No.       Author       The       Problem (1)         12.3.       Proof of at least three international meetings' participation in the past four years         No.       Author       Title       International meeting/conference         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power       IEEE Conference on 2012         I.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Controller       IEEE Conference on 2012         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 42 <sup>nd</sup> Annual Conference, September 2014, Birmingham, United Kingdom         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski       Software Testing       Gerhard Rath, Atanasko Tuneski       Software Testing			No		the p			Dublich on/woon	
12.3.       Proof of at least three international meetings' participation in the past four years         No.       Author       Title       International meeting/conference         1.       Babunski D,       Simulation of load rejection on a nonlinear Hydro Power E.       IEEE Conference on Embedded       2012         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       September 2014, Birmingham, United Kingdom       2014         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski       Software Testing       Schware Testing       Schware Testing       Schware Testing			NO.	Author				Publisher/year	
12.3.       Proof of at least three international meetings participation in the past four years         No.       Author       Title       International meeting/conference       Year         1.       Babunski D, Tuneski A., Zaev       Simulation of load rejection on a nonlinear Hydro Power       IEEE Conference on Embedded       2012         2.       A.Tuneski et al.       Development of an Environmental and Resources Engineering Learning       SEFI 42 <sup>nd</sup> Annual SEFI 42 <sup>nd</sup> Annual Learning       2014         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2014, Eavingdom       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski       Simulation and SCADA       Conference: Infusing Research and       2011		10.0	1. D C			1			
No.AuthorTitleInternational meeting/conferenceYear1.Babunski D, Tuneski A., Zaev E.Simulation of load rejection on a nonlinear Hydro Power Plant model with mixed mode nonlinear controllerIEEE Conference on Embedded Computing (MECO), June 2012, Monte Negro20122.A.Tuneski et al.Development of an Environmental and Resources Engineering LearningSEFI 42 <sup>nd</sup> Annual September 2014, Birmingham, United Kingdom20133.A.Tuneski et al.Environmental engineering curricula developmentSEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium20134.Emil Zaev, Gerhard Rath, Atanasko TuneskiHPP Simulator for Real-Time Software Testing6th Annual SEE Conference: September 2013, Leuven, Belgium2011		12.3.	Proof	of at least three interi	nation	al meetings' participation in	n the p	bast four years	**
Image: InterpretationImage: InterpretationImage: Interpretation1.Babunski D, Tuneski A., Zaev E.Simulation of load rejection on a nonlinear Hydro Power Plant model with mixed mode nonlinear controllerIEEE Conference on Embedded Computing (MECO), June 2012,Monte Negro20122.A.Tuneski et al.Development of an Environmental and Resources Engineering LearningSEFI 42 <sup>nd</sup> Annual Conference, September 2014, Birmingham, United Kingdom20143.A.Tuneski et al.Environmental engineering curricula developmentSEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium20134.Emil Zaev, Gerhard Rath, Atanasko TuneskiHPP Simulator for Real-Time Software Testing6th Annual SEE Conference: Infusing Research and2011			No.	Author	Titl	e	Inter	rnational	Year
1.Babunski D, Tuneski A., Zaev E.Simulation of load rejection on a nonlinear Hydro Power Plant model with mixed mode nonlinear controllerIEEE Conference on Embedded Computing (MECO), June 2012,Monte Negro2.A.Tuneski et al.Development of an Environmental and Resources Engineering LearningSEFI 42 <sup>nd</sup> Annual Conference, September 2014, Birmingham, United Kingdom20143.A.Tuneski et al.Environmental engineering curricula developmentSEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium20134.Emil Zaev, Gerhard Rath, Atanasko TuneskiHPP Simulator for Real-Time Simulation and SCADA6th Annual SEE Conference: Infusing Research and2011					<i>a</i> .		mee	ting/conference	0.010
Image: Second			1.	Babunski D,	Sim	ulation of load rejection	IEE	E Conference on	2012
E.Plant model with mixed mode nonlinear controllerComputing (MECO), June 2012,Monte Negro2.A.Tuneski et al.Development of an Environmental and Resources Engineering LearningSEFI 42 <sup>nd</sup> Annual September 2014, Birmingham, United Kingdom20143.A.Tuneski et al.Environmental engineering curricula developmentSEFI 41 <sup>st</sup> Annual Conference, September 2013, Leaven, Belgium20134.Emil Zaev, Gerhard Rath, Atanasko TuneskiHPP Simulator for Real-Time Software Testing6th Annual SEE Conference: Infusing Research and2011				Tuneski A., Zaev	on a	a nonlinear Hydro Power	Emb	edded	
Image: Section of the section of th				E.	Plai	nt model with mixed mode	Con	puting	
2.A.Tuneski et al.Development of an Environmental and Resources Engineering LearningSEFI 42 <sup>nd</sup> Annual Conference, September 2014, Birmingham, United Kingdom20143.A.Tuneski et al.Environmental engineering curricula developmentSEFI 41 <sup>st</sup> Annual Conference, September 2013, Leaven, Belgium20134.Emil Zaev, Gerhard Rath, Atanasko TuneskiHPP Simulator for Real-Time Software Testing6th Annual SEE Conference: Infusing Research and2011					non	linear controller	(ME	CO), June	
2.A.Tuneski et al.Development of an Environmental and Resources Engineering LearningSEFI 42nd Annual Conference, September 2014, Birmingham, United Kingdom20143.A.Tuneski et al.Environmental engineering curricula developmentSEFI 41st Annual Conference, September 2013, Leuven, Belgium20134.Emil Zaev, Gerhard Rath, Atanasko TuneskiHPP Simulator for Real-Time Software Testing6th Annual SEE Conference September 2013, Leuven, Belgium2011							2012	2,Monte Negro	
Image: Image in the image in			2.	A.Tuneski et al.	Dev	velopment of an	SEF	I 42 <sup>na</sup> Annual	2014
Image: September 2014, Birmingham, United Learning       Birmingham, United Kingdom         3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski       HPP Simulator for Real-Time Gerhard Rath, Atanasko Tuneski       6th Annual SEE Conference: Infusing Research and					Env	ironmental and Resources	Con	ference,	
Image: Section of the section of th					Eng	ineering	Sept	ember 2014,	
Image: space stateImage: space stateKingdom3.A.Tuneski et al.Environmental engineering curricula developmentSEFI 41 st Annual Conference, September 2013, Leuven, Belgium20134.Emil Zaev, Gerhard Rath, Atanasko TuneskiHPP Simulator for Real-Time Simulation and SCADA6th Annual SEE Conference: Infusing Research and2011					Lea	rning	Birn	ningham, United	
3.       A.Tuneski et al.       Environmental engineering curricula development       SEFI 41 <sup>st</sup> Annual Conference, September 2013, Leuven, Belgium       2013         4.       Emil Zaev, Gerhard Rath, Atanasko Tuneski       HPP Simulator for Real-Time Software Testing       6th Annual SEE Conference: Infusing Research and       2011							King	gdom	
Leven, Belgium     Conference, September 2013, Leuven, Belgium       4.     Emil Zaev, Gerhard Rath, Atanasko Tuneski     HPP Simulator for Real-Time Simulation and SCADA     6th Annual SEE Conference: Infusing Research and     2011			3.	A.Tuneski et al.	Env	vironmental engineering	SEF	I 41 <sup>st</sup> Annual	2013
4.     Emil Zaev, Gerhard Rath, Atanasko Tuneski     HPP Simulator for Real-Time Simulation and SCADA     Steptember 2013, Leuven, Belgium       4.     Emil Zaev, Gerhard Rath, Atanasko Tuneski     HPP Simulator for Real-Time Simulation and SCADA     6th Annual SEE Conference: Infusing Research and     2011					curi	ricula development	Con	ference,	
Image: Marking Sector     Image: Marking Sector <th< td=""><td></td><td></td><td></td><td></td><td></td><td>*</td><td>Sept</td><td>ember 2013,</td><td></td></th<>						*	Sept	ember 2013,	
4.Emil Zaev, Gerhard Rath, Atanasko TuneskiHPP Simulator for Real-Time Simulation and SCADA6th Annual SEE Conference: Infusing Research and2011							Leu	ven, Belgium	
Gerhard Rath, Atanasko Tuneski Software Testing Research and			4.	Emil Zaev.	HPI	P Simulator for Real-Time	6th	Annual SEE	2011
Atanasko Tuneski Software Testing Research and				Gerhard Rath.	Sim	ulation and SCADA	Con	ference: Infusing	
				Atanasko Tuneski	Sof	tware Testing	Rese	earch and	

	et al.	Knowledge in	
		South-East Europe,	
		2011, Thessaloniki,	
		Greece	

Add.	4		Information about th	e teachers	that lecture a	t the first, so	econd an	d third study program	
				and are	e mentors on	the doctoral	thesis		
1.	Name	(First	, Last)	Aleksa Ma	alcheski				
2.	Date of	f birth	1	12.03.1964	4				
3.	Scienti	fic de	gree / Title	Ph.D.		· · ·			
4.	Title of	f the s	scientific degree	Ph.D. in m	nathematical s	ciences		· · ·	
5.	Year a	nd ins	stitution of the	Education		Year		Institution	
	scienti	fic de	gree	B.S. in Ma	athematics	1988		Faculty of Science,	
								University Ss. Cyril	
						100.0		and Methodius, Skopje	
				M.Sc. in I	heoretical	1996		Faculty of Science,	
				Mathemat	ics			university Ss. Cyrii and Mathadius, Skania	
				Dh D in T	booratical	2002		Eaculty of Science	
				Mathemat	ics	2002		University of Novi	
				widthemat	105			Sad Novi Sad Serbia	
6.	Area, f	ïeld a	nd particular	Area		Field		Specialty	
	special	ty of	master of science	Mathemat	ics	Complex A	nalvsis	Bounded analytic	
	degree Area, field and area of doctoral		1,1001101100		compren		functions		
7.			Area		Field		Specialty		
	degree			Mathemat	ics	Functional		Banal spaces, n-	
0	TC			Lu otituti o a		analysis	<b>TD</b> ' (1	normed spaces	
8.	If emp	If employed, state the institution		Institution			Title ar	nd area	
	where	ne/sno	works and the title	Faculty of	Mechanical	Full Pro Mathen		ofessor,	
		5a 111 V	which is hamed	Engineerin	ng,			natics	
				Dept. of M	Athematics a				
				Informatics, University		"Ss. Cyril			
	~			and Metho	odius"			-	
9.	List of	cours	ses that the teacher is I	ecturing separately for first, second			d third cy	vcle	
	9.1.	List	of courses that the tea	cher 1s lectu	ring in the fir	rst cycle			
		NO.	Course			Study progra	ltion		
		1.	Mathematics 1			All on MFS			
	0.2	Z. List	of courses that the tee	ohor is lost	ring in the so	All Oli MFS			
	9.2.	No	Course			cond cycle		ition	
		1	Numerical mathe	matics		All on MFS	III/ IIIStite	aton	
		2.	Methods of optim	ization		All on MFS			
	9.3.	List	of courses that the tea	cher is lectu	ring in the thi	rd cvcle			
		No.	Course		0	Study progra	m/institu	tion	
		1.	/		,	/			
10.	Selecte	d wor	k in the past five year	s	·				
	10.1. Relevant scientific printed		evant scientific printed	l paper (up to	0 5)				
		No.	Author		Title			Publisher/year	
		1.	Aleksa Malcheski,	Vesna	A characteri	zation of <i>n</i> -s	semi	Mathematica	
			Manova Erakovik		norm			Balkanica, New series,	
								Vol.25,2011, Fasc.4,	
				**				Bulgaria	
		2.	Aleksa Malcheski,	Vesna	Some 2-subs	spaces of 2-sj	pace	Mathematicki Bilten,	
			Manova Erakovik					математички Билтен, 35 (I XI)	

					49
					Македонија, 2011
		3.	Aleksa Malcheski, Vesna	An extend of the type of Hanh-	Математички Билтен.
			Manova Erakovik	Banach for skew-symmetric	35 (LXI).
				linear forms	Макелонија, 2011
		4	Aleksa Malcheski	Hahn Banach Theorem for	Proceedings of the 5
			Theksu Muleneski	branch 2-subspaces	congres of
				brunen 2 subspuees	mathmaticinas of
					Macadonia 23
					27.00.2014
		5	Alaksa Malahaski Vasna	Hahn Danach Theorem for	Droppedings of the 5
		5.	Manava Erakovik	Hallin Ballach Theorem for	Proceedings of the 5
			Manova Erakovik	cyclic 2-subspaces	congres of
					mathematicinas of
					Macedonia, 23-
	10.0				27.09.2014
	10.2.	Partici	pation in scientific national and	I international projects (up to 5)	
		No.	Author	Title	Publisher/year
		1.	Aleksa Malcheski, Donco	Students' Institute of	2013, (MANU)
			Dimoski, Gjorgji Markoski,	Mathematics and Informatics	
			Jasmina Markoska, Marija		
			Mihova		
		2.	Vesna Manova Erakovik,	"The boundary values of the	2006-2009, Institute of
			Aleksa Malcheski and other	analytic functions and	mathematics, Faculty
				distributions and	of Natural sciences and
				approximations in the sense of	Mathematics
				distributions"	
	10.3.	Printec	l books in the last five years (up	to 5)	
		No.	Author	Title	Publisher/year
		1.	Aleksa Malcehski and other	Competitions in mathematics in	SMM, 2014
				primary education 2006-2013	
		2.	Aleksa Malcheski, Risto	Sigma-Mails, Preparatory tasks	SMM, 2012
			Malcheski, Vesna Manova	for mathematical competitions	
			Erakovic, Gjorgji Markoski		
		3.	Aleksa Malcheski, Risto	Sigma-Mails, Box competition	SMM, 2012
			Malcheski, Vesna Manova	tasks 1006-1260	
			Erakovic, Gjorgji Markoski		
		4.	Aleksa Malcheski, Risto	Sigma-Mails, Box competition	SMM, 2012
			Malcheski, Vesna Manova	tasks, 1-192	
			Erakovic, Gjorgji Markoski		
		5.	Aleksa Malcheski	Sigma-Mails, regional	SMM, 2012
				competitions in mathematics in	
				secondary education, 1978-2012	
	10.4.	Printec	l professional papers in the last	5 years (up to 5)	
		No.	Author	Title	Publisher/year
		1.			
11.	Superv	rision (n	nentorship) of undergraduate, m	aster and doctoral studies students	
	11.1.	Underg	graduate	/	
	11.2.	Master		1	
	11.3.	Doctor	al	/	
12.	For me	ntors of	doctoral thesis, selected work for	or the last four / five years	
	12.1.	Proof	of printed scientific papers in int	ternational scientific journals or int	ernational publications
		in the	related field (up to 6) in the past	five years	-
		No.	Author	Title	Publisher/year
		1.			
	12.2.	Proof	of at least two printed scientific	papers in international scientific jo	urnals that have impact
		factor	in the related field in the past five	ve years	•
		No.	Author	Title	Publisher/year
		1.			

12.3.	Proof c	of at least three internationa	l meetings' participation in	the past four years	
	No.	Author	Title	International	year
				meeting/conference	
	1.				

Add.	4	Ir	nformation about tl	ne teachers that lecture	at the first, s	econd ar	nd third study program
1	Nama	Time I	( 1)	and are mentors on	the doctoral	thesis	
1.	Name (	First, I	Last)	Valentino Stojkovski			
2. 2	Date of	Dirth	maa / Titla	14.10.1904			
э. 4	Title of	fic deg	iontific degree	PII.D. Dh D in Tachnical Said	2200		
4. 5	Voor or	d insti	tution of the	Education	Voor		Institution
5.	scientif	iu ilisu Ec dom		Dh D in Machanical	1 eai		Esculturof Machanical
	scientii	ic degi		Ph.D in Mechanical	2001		Faculty of Mechanical
				M So in Mochanical	1005		Englieering - Skopje
				Findingering	1995		engineering Skopie
				B Sc in Mechanical	1080		Faculty of Mechanical
				Engineering	1707		engineering - Skopie
6.	Area, f	ield and	d particular	Area	Field		Specialty
	special	ty of m	aster of science	Technical-	Mechanica	1	Fluid mechanic and
	degree			technological sciences			fluid flow systems
7.	Area, f	ield and	d area of doctoral	Area	Field		Specialty
	degree			Technical-	Mechanica	1	Fluid mechanic and
				technological sciences			fluid flow systems
8.	If empl	oyed, s	state the institution	Institution		Title an	id area
	where I	he/she	works and the title	University of Ss Cyril a	ind	Profess	or, Fluid flow and
	and are	a in wi	nch is named	Methodius, faculty of N	Mechanical hydra		lic machines
				engineering		-	
9.	List of	course	s that the teacher is l	ecturing separately for fi	rst, second an	d third c	ycle
	9.1.	List o	f courses that the tea	cher is lecturing in the fi	rst cycle		
	No. Course				Study progra	m/institu	ition
		1.	Fluid mechanics		PI,HIMV,M	SKI,IIM,	MHT,AUS/ FME
		2.	Fluid dynamics a	nd CFD	HIMV / FMI	7	
		3.	Fluid flow measu	rement	HIMV,AUS	/ FME	
		4.	Gas systems		EE/FME		
		5.	Design of hydrau	lic machines and	HIMV/FME		
	0.2	Listo	systems	ahan ia laatumina in tha a	and avala		
	9.2.	List 0	Courses that the tea	icher is lecturing in the so	Study progra	m/institu	tion
		1	Modeling and sin	ulation in automation		.111/11151110	
		1.	and fluid enginee	ring	AI'I /I'IVIL		
		2	Measuring monit	oring and data base	AFI / FME		
		3.	Selected chapters	of fluid mechanics	AFI/FME		
		4.	Fluid conveying		AFI/FME		
		5.	Pumps and pump	s stations	AFI/FME		
		6.	Engineering expe	rimentation	EE/FME		
		7.	Design of hydro	oower plant	EE/FME		
		8.	Protection and sat	fety in hydropower	BZR/FME		
			plants and system	IS			
	9.3. List of courses that the t		f courses that the tea	cher is lecturing in the th	nird cycle		
		No.	Course	1.1.01.1.5	Study progra	m/institu	ition
		1.	Experimental rese	earch in fluid	HIA / FME		
		2	mechanics and hy	draulic systems			
		2.	Modeling and sin	nulation in fluid	HIA / FME		
			dynamic				

						51
		3.	Advance topics of fluid mech	anics	HIA / FME	
		4.	Norms for protection of envir	onmental	HIA / FME	
10.	Selecte	ed work	in the past five years			
	10.1.	Relev	ant scientific printed paper (up t	o 5)		
		No.	Author	Title		Publisher/year
		1.	Valentino Stojkovski,	Empirilica	l correlation for	Thermal Science,
			Zvonimir Kostic	prediction	of the elutriation rate	Vol.7, No.2, pp.43-58,
				constant		2003
		2.	V.Stojkovski, Z.Kostic,	Dependen	ce of the total	Thermal Science,
			A.Nospal	entrainmen	nt flux upon the	Vol.4, No.1, pp.65-73,
				apparent a	nd the total	2008
	10.2	Dortio	ination in scientific national and	d internation	n number	
	10.2.	No	Author	Title	iai projects (up to 3)	Publisher/vear
		1	Noshpal A Stoikovski V	Applicatio	n of CAD and CAX	Ministry of education
		1.	Markov Z	technologi	les in electrical	and science of
				technique	processes in energy	Republic Macedonia
				and ecolog	2V	2006-2009
		2.	M. Kosevski (Project	Numerical	Simulation Program	Tempus CARDS JEP-
			coord.), V.Stojkovski et al.	in Mechan	ical Engineering,	19017, 2006-2009
		3.	I.Petrovski, R.Filkovski,	Research a	and optimization of	Ministry of education
			A.Nospal, V.Stojkovski et at.	thermal pr	ocesses in thermo	and science of
				energetic e	equipment with	Republic Macedonia
				numerical	analyses	2006-2009
	10.3.	Printe	ed books in the last five years (up	o to 5)		1
		No.	Author	Title		Publisher/year
		1.				
	10.4.	Printe	ed professional papers in the last	5 years (up	to 5)	
		No.	Author	Title		Publisher/year
		1.	R.Filkovski, I.Petrovski,	Energy efi	ciencyand energy	14 THERMAL
			A.Nospal, V.Stojkovski	saving in i	ndustry and services	SYMPOSIUM
		2	V Stailanulti 7 Kaatia	Critorio fo		SEKBIA, 2009
		Ζ.	V.Slojkovski, Z.Koslic, A Nospel D Tenurkov:	foosibility	of small hydro power	INTERNATIONAL
			A.Nospai, D. Fallurkov.	nlant	of small flyero power	ENERGY 2008
		3	V Fustic, V Stoikovski et al	FXPERTS	Y ANALYSIS OF	International council
		5.	v.i ustie, v.stojkovski et.ai.	THE FOU	IPMENT IN THE	on large electric
				SMALL H	IYDRO POWER	systems Macedonian
				PLANTS 1	IN THE	national committee-
				"TRANSF	FER" PHASE OF	Conference 2013
				THE ROT	PROJECT	
		4.	R.Filkovski, F.Stojkovski,	A CFD stu	dy of a solar chimney	6 <sup>th</sup> International
			V.Stojkovski	power plan	nt operation	conference on
						sustainable energy &
						environmental
						protection SEEP 2013,
		5	D Demonstrik V Otaritan 1.	Mc41-1.0		Naribor, Slovenia
		5.	r.Popovski, V.Stojkovski, K.Naidankavski	iviethod fo	r measuring the	Macedonian energy
			K.Najdenkovski	guaranteed	vdro power plant	International
				of small in	yuro power plant	symposium Energetics
						2014
1	Superv	vision (1	mentorship) of undergraduate m	aster and do	octoral studies students	
••	11.1.	Under	graduate	37	cestal stadies stadents	
	11.2.	Maste	er en	4		
	11.3.	Docto	ral	/		
2.	For me	entors of	f doctoral thesis, selected work f	or the last for	our / five years	

12.1.	Proof c	of printed scientific papers i	n inte	ernational scientific jou	irnals or int	ernational pu	ublications
	No.	Author	past	Title		Publisher/v	vear
	1.						
12.2.	Proof c factor i	of at least two printed scient n the related field in the pa	tific p st fiv	papers in international s e years	scientific jo	urnals that h	ave impact
	No.	Author		Title		Publisher/y	/ear
	1.						
12.3.	Proof c	of at least three internationa	l mee	etings' participation in	the past fou	r years	-
	No.	Author	Titl	e	Internation	nal	year
					meeting/co	onference	
	1.						

Add.	. 4	Informati	on a	about the teachers that lecture at t	the first	t, second and third s	tudy program		
		and are m	ient	ors on the doctoral thesis					
1.	Name	(First, Last)		Nikola Tuneski					
2.	Date o	f birth		16.07.1971					
3.	Scienti	fic degree /		Ph.D.					
	Title	<u> </u>	<u>c'</u>	DLD is well-surface and					
4.	Title o	f the scienti	f1C	Ph.D. in mathematical sciences					
5	Voor	nd institutio	<b>n</b>	Education		Voor	Institution		
5.	of the	na mstitutio	11	Ph D is weather and is a		1004			
	degree			Ph.D. in mathematics		1994	Belgrade, Serbia		
				M. Sc. in mathematics		1997	UKIM,		
							Macedonia		
				B. Sc. In Engineering		1999	UKIM,		
							Macedonia		
6.	Area, field and			Area		Field	Specialty		
	particu	lar specialty	/	Mathematics		Probability	Random		
	of mas	ter of science	ce				processes		
7	degree		9	Area		Field	Specialty		
/.	of doc	toral degree	a	Mathematics	Complex englycic	Geometric			
	01 400	iorar acgree		Wathematics		Complex analysis	function theory		
8.	If emp	loved, state		Institution			Title and area		
	the ins	titution whe	re						
	he/she	works and t	he		1 .		E-11 Drugferrage		
	title an	d area in		Faculty of Mi			Full Professor,		
	which	is named		Ss. Cyril and Methodius Universit	y in Sko	орје	informatics		
9	List of	courses tha	t the	teacher is lecturing separately for f	cond and third cycle	mormatics			
2.	9.1.	List of cou	irses	s that the teacher is lecturing in the f	irst cyc	le			
		No.	Co	urse	Study	program/institution			
		1.	Ma	athematics 1	all on	MFS			
		2.	En	gineering Mathematics	all on	MFS			
	9.2.	List of cou	irses	s that the teacher is lecturing in the s	second of	cycle			
		No.	Co	urse	Study	program/institution			
		1.	Pro	bability and Statistics	all on	MFS			
		2.	Co	mplex Analysis for Engineers	all on	MFS			
	9.3.	List of cou	irses	s that the teacher is lecturing in the t	hird cyc	cle			
		No.	Co	urse	Study	program/institution			
		1.	Th	eory and Application of	Mathe	ematical sciences and	application		
			D1	trerential Subordinations	NT (1				
		2.	In	Application	Mathe	ematical sciences and	application		
			IUS	Application					

10.1								
10.1.	No	Author	Title	5)		Publisher/v	ear	
	1.	E. Aliaga	Some conno	ations boty	voon class U and	Hindawi Pi	ublishing	
		N. Tuneski	a-convex fu	a convex functions Abstract and Applied				
			Analysis Vo	10003, 110	4 Article ID	2014		
			692327, 4 pa	ages.		(2013 IMP	ACT	
			, , , , , , , , , , , , , , , , , , ,		FACTOR 1	.102)		
	2.	N. Tuneski, M.	On functions	s that are J	Hacettepe V	University		
		Darus	with respect	to N-sym	metric points,	2012	. ~	
			Hacettepe Jo	purnal of M	Aathematics and	(2010 IMP	ACT	
	2	Obra darria M	Statistics, Vo	01. 41 (2) (	$\frac{2012}{2012}, \frac{2}{1} - \frac{2}{5}.$	FACTOR	).385) Marthannad	
	3.	Doradovic M.,	Radius of un	of univel	or certain	Malaysian Seienees Se	Mathemati	
		Folliusally S., Tupeski N	functions B	ullatin of th	he Malaysian	2012	ociety	
		T UHOSKI IN.	Mathematica	alletin of the	s Society (2) 35(2)	(2012)	ACT	
			(2012) 325-		FACTOR (	) 696)		
	4.	Tuneski N.,	Some proper	ties of cer	tain expression of	Elsevier		
		Obradovic M.	analytic func	ctions, Con	nputers and	2011		
			Mathematics	s with Appl	<i>lications</i> , 62 (2011),	(IMPACT	FACTOR	
			3438–3445.			2.069)		
	5.	Irmak H	Certain relat	ions betwe	en a-convex type	Elsevier		
		Bulboaca T.,	functions and	d Bazilevi	č type functions.	2011		
		Tuneski N.	Applied Mat	hematics I	Letters, Vol. 24 (12)	(2010 IMP	ACT	
			(2011), 2010	)-2014.		FACTOR	.155)	
10.2.	Partic	cipation in scientific	c national and	internation	al projects (up to 5)			
	No.	Author	Title				Publishe	
	1.						Car	
10.3.	Printe	ed books in the last	five years (up t	to 5)				
	No.	Author			Title		Publishe ear	
	1.	Tuneski, N., Jolev	/ska-Tuneska E	ka-Tuneska B. Differential calculu ka-Tuneska B. Integral calculus		S	UKIM, 2011	
	2.	Tuneski, N., Jolev	vska-Tuneska E			Integral calculus		
							2011	
	3.	Tuneski, N., Geor	gieva-Celakos	ka E.	Introduction to MA	TLAB	the auth 2010	
10.4.	Printe	ed professional pape	ers in the last 5	years (up	to 5)		<b>D</b> 1 11 1	
	No.	Author	Title				Publishe ear	
Sumar	1.	montorchin) of und	proroduoto mo	otor and da	atoral studios stud	to		
11.1.	Under	graduate	Ergraduate, ma		studen	15		
11.2.	Maste	er		1				
11.3.	Docto	oral		2 students	s in progress			
For me	entors o	f doctoral thesis, se	lected work for	r the last fo	our / five years			
12.1.	Proof in the	of printed scientific related field (up to	c papers in inte 6) in the past f	ernational s five years	scientific journals or i	international	publication	
	No.	Author	Title	<u>_</u>			Publishe ear	
	1.	Obradovic	Radius of un	ivalence o	of certain combination	n of	2012	
		M.,	univalent and	d analytic	functions, Bulletin of	the		
		Ponnusamy	Malaysian N	Iathematic	cal Sciences Society, (	(2) 35(2)		
		S., Tuneski	(2012), 325-	-334. (201	0 IMPACT FACTOR	R 0.696)		
1	1	N	1 //	····ia da /ias	$1_2$ /DM/N/CC/ $126$	0.1.4		

							54		
	2.	Irmak H., Bulboaca T., Tuneski N.	Cer Baz Vol FA <u>http</u> 9/2	tain relations between α-conv cilevič type functions, <i>Applied</i> l. 24 (12) (2011), 2010–2014. CTOR 1.155) p://www.sciencedirect.com/sc 4	vex type functions and <i>Mathematics Letters</i> , (2010 IMPACT ience/journal/0893965	201	1		
	3.	Tuneski N., Obradovic M.	Sor fun App FA <u>http 1/6</u>	functions, <i>Computers and Mathematics with</i> <i>Applications</i> , 62 9 (2011), 3438–3445. (IMPACT FACTOR 2.069) <u>http://www.sciencedirect.com/science/journal/0898122</u> <u>1/62/9</u>					
	4.	H. M. Srivastava, N. Tuneski, Emilija Georgieva– Celakoska	Sor Far Fur and 17. <u>http</u> %2	ne Distortion and Other Propenily of the <i>n</i> –Fold Symmetric actions, <i>Australian Journal of LApplications</i> , Vol. 9, Issue 2 <u>p://ajmaa.org/Volumes/Volume</u> 02012.php	erties Associated with a Koebe Type <i>Mathematical Analysis</i> , Article 1, (2012) 1- e%209%20Issue%202	201	2		
	5.       Tuneski, N.       On a Class of Functions Defined by Takahashi and Nunokawa, Mathematica Balkanica, Vol. 25 (1–2) (2011), 203–209.         http://www.mathbalkanica.info/toc/cont2512.pdf				201	1			
12.2.	Proof of a	at least two print	ed sc	ientific papers in internationa	l scientific journals that	have	impact		
	factor in t	the related field	in the	e past five years					
	No.	Author	ior Title				olisher/y		
		N. Tuneski	Sor fun 201 <u>http</u> FA	Some connections between class $\mathcal{U}$ and $\alpha$ -convex functions, <i>Abstract and Applied Analysis</i> , Volume 2014, Article ID 692327, 4 pages, <u>http://dx.doi.org/10.1155/2014/692327</u> . (2013 IMPACT FACTOR 1.102)					
	2.	N. Tuneski, M. Darus	On functions that are Janowski starlike with respect to N–symmetric points, <i>Hacettepe Journal of Mathematics</i> <i>and Statistics</i> , Vol. 41 (2) (2012), 271 – 275. (2010 IMPACT FACTOR 0.385) http://www.hims.bacettepe.edu.tr/issues/vol41_2.html				2		
12.3.	Proof of a	at least three inte	ernati	onal meetings' participation i	n the past four years				
	No.	Author		Title	International meeting/conference		year		
	1.	N. Tuneski		Functions of bounded turning	International Short Joi Research Workshop "Some inequalities concerned with the geometric function theory", The Research Institute for Mathemat Sciences, Kyoto University, Kyoto, Jap May 22 – 24, 2013.	nt ical an,	2013		
	2.	N. Tuneski, N Darus, E. Gelo	I. ova	Simple criteria for bounded turning of an analytic function.	"Geometric Function Theory and Applications'2012", Ohrid, R. Macedonia, August 27 - 31 - 2012		2012		
	3	N Tuneski		From inequalities to	13th Serbian		2014		
1	5	1. 1 uncom		r rom mequanties to	15th Seronal				

Add	Add. 4 Information about		Information about 1	the teacher	he teachers that lecture at the first, second and third study program			
1	NT	( <b>F</b> ' ( )	T .\	and a	re mentors	on the doctor	al thesis	
1.	Name	(First, I	Last)	Atanas Ko	ochov			
2.	Date of	f birth	/ <b>D1</b> /1	March 8,	1966			
3.	Scienti	fic deg	gree / Title	Ph.D.				
4.	Title of	t the sc	cientific degree	Ph.D. 11 1	echnical Sci	ences		
5.	Year a	nd inst	itution of the	Education	l	Year		Institution
	scienti	tic deg	ree	Ph.D in M	Iechanical	2001		Faculty of Mechanical
				Engineeri	ng			engineering - Skopje
				M. Sc. in	Mechanical	1994		Faculty of Mechanical
				Engineeri	ng			engineering - Skopje
				B. Sc. in N	Mechanical	1990		Faculty of Mechanical
				Engineeri	ng			engineering - Skopje
6.	Area, f	ield an	d particular	Area		Field		Specialty
	special	ty of n	naster of science	Technical	sciences	Mechanical		FEA in metalforming
	degree					engineering		processes
7.	Area, f	ield an	d area of doctoral	Area		Field		Specialty
	degree			Technical	sciences	Mechcanica	ıl	Composite materials
						engineering		
8.	If empl	loyed,	state the institution	Institutior	1		Title and	1 area
	and are	$\frac{110}{310}$	hich is named	UKIM, Faculty of Mech		chanical	hanical Full time professor	
			Engineering Mech		Mechan	nical engineering		
9.	List of courses that the teacher is		lecturing se	parately for f	irst, second ar	nd third cy	ycle	
	9.1.	List c	of courses that the tea	acher is lect	uring in the f	first cycle		
		No.	Course			Study program	n/institut	ion
		1.	Management of the	echnology Industr		Industrial eng	gineering	and management
		2.	Computer aided e	engineering Production engineering		ngineering	5	
		3.	Production proce	sses Mechanical engineer		ngineerin	g	
		4.	Technology of ra	pid prototyping Mechanical engine		ngineerin	ng	
	9.2.	List c	of courses that the tea	acher is lecturing in the second cycle				
		No.	Course	Study program/		n/institut	institution	
		1.	Management of t	echnology		Industrial engineering and management		
		2.	Sustainable devel	opment		Product life cycle management		
		3.	Cleaner production	on		Metrology	<u> </u>	
		4.	Modeling and sin	nulation of j	plastic	Production er	igineering	
	9.3.	List c	of courses that the te	, acher is lect	uring in the t	hird cycle		
		No.	Course		8	Study program	n/instituti	ion
		1.	Sustainable devel	opment		Industrial eng	ineering	and management
		2.	Managment of Te	chnology in	nnovation	Industrial eng	gineering	and management
10.	Selecte	d work	in the past five year	'S				
	10.1.	Relev	ant scientific printed	d paper (up	to 5)			
		No.	Author		Title			Publisher/year
		1.	A.Kochov:		_"Scientific	and Technolo	ogical	Fulbright Academy,
					Innovations	s for Greater	-	Cambridge University,
					Economic l TIGER)".	Revitalization	(S-	Boston, USA, February, 2008.
		2.	A.Kochov:		"Macedor	nian SMF	E's -	pg. 89, Joint Actions on
					achivemer	its and	future	Climate Change
					activites:	Competitve	nss of	Conference, Aalborg,
1						-		Danmark June 9-11,

				56
			SME through implementation of CP tehnologies",	2009.
	3.	A.Kochov:	"Management of technology - Low Carbon techniques for agro food sector"	European Roundtable for Sustainable Consumption and Production, Delft, Netherland, October 28- 31, 2010.
	4.	A.Kochov, B.Dunjic:	Low-Carbon production concept in managing SME in WBC,	Regional Resource Efficient & Cleaner Production Net meeting of NVPCs and NCPPs from the European and Central Asian countries, 4th Nevsky International Ecological Congress, May 2011; St. Petersburg, Russia.
	5.	A.Kochov	Sustainable development supported by low carbon technologies in agro business sector	ERSCP conference, Portoroz, Slovenia, October 2014
10.2.	Partic	ipation in scientific national an	d international projects (up to 5)	
	No.	Author	Title	Publisher/year
	1.	A. Kochov, at all. UNIDO	Cleaner production technologies	2007-2010
-	2.	A. Kochov, at all UNIDO	Resource efficiency and cleaner production	2010-2012
	3.	A. Kochov, at all UNIDO	Low carbon technologies	2011-2014
10.3.	Printe	d books in the last five years (u	p to 5)	
-	No.	Author	Title	Publisher/year
	1.			
10.4.	Printe	d professional papers in the last	t 5 years (up to 5)	
-	No.	Author	Title	Publisher/year
	1.	A.Kochov:	"CDM projects implementation in SME in Macedonia",	Regional Conference on financing energy efficiency & RES project, energy week, Skopje, Macedonia, 2009.
	2.	A.Kochov:	"Management of technology - Low Carbon techniques for agro food sector",	European Roundtable for Sustainable Consumption and Production, Delft, Netherland, October 28- 31, 2010.
	3.	A.Kochov:	Sustainable industrial development in the context of Low Carbon Society concept,	UNIDO-PREPARE conference: "SCP: How to make it possible" Kaunas, Lithuania, September 2011.
	4.	A.Kochov:	"Green manufacturing driving low carbon, resource efficient and clean industrialization in developing and transition economies"	2 <sup>nd</sup> Global Network Conference on Resource Efficient and Cleaner Production (RECP – 2011), UN – Gigiri, Nairobi, Kenya, 17-19 October 2011

		5.	A.Kochov	"Ma Low food	nagement of tech Carbon technique sector in WBC"	nology - es for agro	3 <sup>rd</sup> Globa Conference Efficient a Production Luzern, O	l Network ce on Resource and Cleaner n (Swiss, october 2013)
11.	Superv	rision (n	sion (mentorship) of undergraduate, master and doctoral studies students					
	11.1.	Underg	graduate		Over 20			
	11.2.	Master	•		Over 10			
	11.3.	Doctor	al		Over 5			
12.	For me	nentors of doctoral thesis, selected work for the last four / five years						
	12.1.	Proof	of printed scientific papers i	apers in international scientific journals or international publications in				
		the rel	ated field (up to 6) in the pa	st five ye	t five years			
		No.	Author	Titl	e		Publisher/	year
		1.						
	12.2.	Proof	of at least two printed scient	tific pape	rs in international	scientific jo	ournals that have impact	
		factor	in the related field in the pa	st five ye	ars			
		No.	Author	Titl	e		Publisher/	year
		1.						
	12.3.	Proof	of at least three internationa	1 meeting	s' participation in	the past fou	r years	
		No.	Author	Title		Internationa	al	year
						meeting/con	nference	
		1.						

Add	. 4	Ir	nformation about th	e teachers that lecture at the first, second and third study program				
				and are m	entors on the o	loctoral th	lesis	
1.	Name (F	irst, I	Last)	Done Tashevski				
2.	Date of b	oirth		04.08.1962				
3.	Scientific degree / Title			Ph.D.				
4.	Title of the scientific degree			Ph.D. in Tech	inical Sciences			
5.	Year and institution of the			Education	Year	Institution	n	
	scientific	e degi	ree	PhD in	2004	UKIM Sł	kopje Macedonia	
				Technical		Faculty o	f Mechanical Engineering	
				Sciences				
				MSc	1994	UKIM Sł	kopje Macedonia	
				Technical		Faculty o	f Mechanical Engineering	
				Sciences				
				BSc	1985	UKIM Skopje Macedonia		
				Technical		Faculty of Mechanical Engineering		
				Sciences –				
				Mechanical				
				eng.				
6.	Area, fie	ld an	d particular	Area	Field	Specialty		
	specialty	of m	aster of science	Mechanical	Energetic	Energy and ecology		
	degree			engineering				
7.	Area, fie	ld an	d area of doctoral	Area	Field	Specialty		
	degree			Mechanical	Energetic	Fuel cells	8	
				engineering				
8.	If employ	yed, s	state the institution	Institution			Title and area	
	and area	in wi	works and the title	Faculty of Me	echanical Engin	leering	Professor / mechanical	
	and area	III WI	licit is named	Skopje, Univ	ersity Ss. Cyril	and	engineering- thermal	
				Methodius in Skopje			engineering	
9.	List of co	ourse	s that the teacher is l	ecturing separa	tely for first, se	cond and t	hird cycle	
	9.1. I	list o	f courses that the tea	cher is lecturin	g in the first cy	cle		
	1	No.	Course		Study program	n/institutio	n	
	1		Steam and gas turb	oines	TI/MFS			

		2.	Exploitation and m	aintenance	TI/MFS		
			of power plants and	d systems			
		3.	Energy efficiency		EE/MFS		
		4.	Energy and ecolog	у	EE/MFS		
	9.2.	List o	of courses that the tea	cher is lecturin	g in the second	cycle	
		No.	Course		Study program	n/institution	
		1.	General ecology		EE/MFS		
		2.	Modeling of proces	sses of	TI/MFS		
			energy conversion				
	9.3.	List o	of courses that the tea	cher is lecturin	g in the third cy	cle	
		No.	Course		Study program	n/institution	
		1.	Energy efficiency		TI/MFS		
		2.	Modern power plan	nts	TI/MFS		
10.	Selecte	ed work	t in the past five year	S			
	10.1.	Relev	ant scientific printed	paper (up to 5	)		
		No.	Author	Title		Publisher/year	
		1.	D. Tashevski,	Analysis of P	arameters	International Journal of Mechanical	
			R. Filkoski,	Affecting the	Efficiency	Engineering and Technology (IJMET),	
			D. Dimitrovski,	Optimization	of Binary	(ISSN 0976–6359 Online), Volume 5,	
			I. Shesho	SOFC Co-ge	neration	Issue 10, pp. 180-190, India, 2014	
				Power Plants		(JIF 7,5377)	
		2.	D. Tashevski, R.	Optimization	of Binary	International Journal of Mechanical	
			Filkoski,	Cogenerative	Thermal	Engineering and Technology (IJMET),	
			I. Shesho	Power Plants	with Solid	(ISSN 0976–6359 Online), Volume 5,	
				Oxide Fuel C	cells on	Issue 1, pp. 122-131, India, 2014	
				Natural Gas.		(JIF 5,77)	
		2	I Shacha	Simulation Application for		International Journal of Engineering	
		э.	I. Shesho, D. Tashayaki	Ontimization	of Solor	Research and Applications (UEDA)	
			D. Tashevski.	Collector Arr		Volume 4 Josue 1 pp. 10-10 (JSSN:	
				Collector All	ay.	2248 9622) India 2014	
						(IIF 1  69)	
		4	D Tashevski	Optimization	of Binary Co-	Chemical engineering transaction vol	
			D Dimitrovski	generative Th	ermal Power	34 pp 31-36 (DOI: 10 3303/	
			Di Dimiti o tom	Plants with S	OFC on Solid	CET1334006). Italy. 2013	
				Fuel.	or e on sona	(SJR Thomson Reuters 0.26)	
		_	<b>N THE A 11</b>				
		5.	D. Tashevski,	Three-genera	tion Power	International Journal of Engineering	
			I. Shesho	Plant with Hi	gh-	Research and Development, (e-ISSN:	
				temperature I	Fuel Cells for	2278-067X, p-ISSN: 2278-800X),	
				Complex Bui	ldıng.	Volume 6, Issue 5, pp. 46-52, India,	
						2013	
	10.0		• .• • • .• .• .•	. 1 1		(JIF 1,131)	
	10.2.	Partic	sipation in scientific	national and in	ternational proj	ects (up to 5)	
		NO.	Author		C1 · · · ·	Publisher/year	
		1.	S. Armenski	Production of	briquettes	CeproSARD Skopje, Macedonia	
			D. Tashevski	and pellets fr	om	/2011-2012	
			L. Karakasneva	agricultural v	vaste – Agro		
	10.3	Drinte	d books in the last fi	Lifergy	5)		
	10.5.	No	Author	Title	5)	Publisher/veor	
		1	S Armonski	Thermal pow	or plants	Alfa 00 Skopie ISBN 078 0008 036	
		1.	D. Tashayski	avercise 300	er plants –	36 4 Macedonia 2010	
		2	S Armonalei	Production of	P., f briquots and	$C_{P}$ NIACCUOIIIA, 2010.	
		∠.	D. Tashayala	riouuciion ol	abook 95 m	Ceriusand, isoli 9/0-000-03330-0-9, Skopia Macadonia 2012	
			D. Lashevski, I. Karakashawa	penets – nano	1000k. 03 p.	SKUPJE, MaccuOIIIa, $2012$ .	
		3	D. Tasheveli	Maintenanco	and	IIKIM in Skopie E-publication and	
		5.		exploatation	anu of energy	digital libraries Skopie Macedonia	
				exproatation (	n energy	argitar noranes, skopje, Maccuollia,	

						5
					power plants and systems (1 <sup>st</sup> publication) 298 p	2014 (No.03-187/2 from 11.2.2014).
	10.4	Printe	ed professior	al paper	rs in the last 5 years (up to 5)	
	10.11	No.	Author	iui pupei	Title	Publisher/year
		1	R Filkoski		Professional expertise for	MES Skopie / December 2013
		1.	D Tashevs	ki	the inability of hot start	Wild Skopje / December 2013
			S Armonsl	кі, -i	constructive problem of	
			7 Markov	<b>,</b>	gas turbing and other	
			Z. Markov.		gas turbine, and other	
					installation and	
					approximation and	
					$\frac{1}{2} \frac{1}{2} \frac{1}$	
		2		1 •	AD, No. 07-3270/5.	
		2.	D. Tashevs	К1,	Technical report of	MFS Skopje / December 2013
			R. Filkoski	,	explosion od hot water	
			D. Dimitro	vskı,	boiler on LPG located in	
			I. Shesho:		"Cevahir residence and	
					mall project" – Skopje for	
					Cevahir Gurup Istanbul,	
					Turkie, subsidiary in R.	
					Macedonia, No. 07-1983/4,	
		3.	D. Tashevs	ki	Energy audit report of	MFS Skopje / January 2013
				JOUDG "Angel Shajce"		
			object "Buba Mara", No.			
					07-235/5,	
		4.	D. Tashevs	ki,	Head project – mechanical	Bauer Skopje, / May 2012
			I. Shesho:	,	installation, termotechnical	15 / 5
					installation an facilities for	
					resindetial-bussines object	
					st M Apsotolski tech No	
					226/2012	
		5	D Tashevs	ki	Energy audit of elementary	MACEE Skopie / January 2001
		5.	D. Tashevs	KI	school and kinder gardens	Wirkelli Skopje / January 2001
					under the outhority of the	
					local government	
					municipality G. Datroy and	
					M A Chanto (5 kindor	
					M.A. Chento (5 Kinder	
					gardens and Telementary	
11	Supar	vision (	montorchin	ofundo	school),	studios students
11.		Under	mentorsnip)	52 mor	Igraduate, master and doctoral	studies students
	11.1.	Moste		32 mei	ntorship of undergraduate stude	
	11.2.	wraste		-2  me	norship of master students	no comont anotoma in Donublic of
				1. Sasi	he Panevski - Use of energy ma	inagement systems in Republic of
				Maced	lonia	
				2. Arb	en Veliu – The potential for en	ergy saving in buildings and use of
				renewa	able energy sources in urban ar	ea
				- Sever	n students in progress	
	11.3.	Docto	oral	One stu	udent in progress	
2.	For me	entors c	of doctoral th	esis, sel	ected work for the last four / fi	ve years
	12.1.	Proof	of printed s	cientific	papers in international scientif	ic journals or international publications in
		the re	elated field (u	1p to 6)	in the past five years	
		No.	Author		Title	Publisher/year
		1.	D. Tashev	ski,	Analysis of Parameters	International Journal of Mechanical
			R. Filkosk	i,	Affecting the Efficiency	Engineering and Technology (IJMET),
			D. Dimitro	ovski,	Optimization of Binary	(ISSN 0976–6359 Online), Volume 5,
			I. Shesho	-	SOFC Co-generation	Issue 10, pp. 180-190, India, 2014 (JIF
					Power Plants.	7,5377)
		2.	D. Tashev	ski.	Optimization of Binary	International Journal of Mechanical
			R. Filkosk	i,	Cogenerative Thermal	Engineering and Technology (IJMET).

		I. Shesho	Power Plants with Solid Oxide Fuel Cells on	(ISSN 0976–6359 Online), Volume 5, Issue 1, pp. 122-131, India, 2014 (JIF		
	3.	I. Shesho, D. Tashevski:	Natural Gas. Simulation Application for Optimization of Solar Collector Array.	5,77) International Journal of Engineering Research and Applications (IJERA), Volume 4, Issue 1, pp. 10-19, (ISSN: 2248 9622) India 2014 (IE 1 69)		
	<ul> <li>4. D. Tashevski, D. Dimitrovski</li> <li>5. D. Tashevski, I. Shesho</li> </ul>		Optimization of Binary Co- generative Thermal Power Plants with SOFC on Solid Fuel.	Chemical engineering transaction, vol. 34, pp. 31-36, (DOI: 10.3303/ CET1334006), Italy, 2013 (SJR Thomson Reuters 0,26)		
			Three-generation Power Plant with High- temperature Fuel Cells for Complex Building.International Journal of Engin Research and Development, ( 2278-067X, p-ISSN: 2278-80 Volume 6, Issue 5, pp. 46-52, 2012 (JW 1 121)			
	6.	D. Tashevski, D. Dimitrovski, Z. Markov, I. Shesho:	Energy and Ecology Benefits of Independent SOFC/Gas Turbine Co- generation Power Plant on Natural Gas.	1 <sup>st</sup> Internatinal U.O.C. – B.E.N.A. – Conference "The Sustainability of Pharmaceutical, Medical and Ecologica Education and Research – SPHAMEER – 2013", proceedings book p. 6, Constanca, Romania,		
12.2.	Proof	of at least two printe	ed scientific papers in internation	onal scientific journals that have impact		
	Tactor	A uthor	Title	Dublisher/yeer		
	1.	D. Tashevski, R. Filkoski, D. Dimitrovski,	Analysis of Parameters Affecting the Efficiency Optimization of Binary	International Journal of Mechanical Engineering and Technology (IJMET), (ISSN 0976–6359 Online), Volume 5,		
		I. Shesho	SOFC Co-generation Power Plants	Issue 10, pp. 180-190, India, 2014 (IIF 7 5377)		
	2.	D. Tashevski, R. Filkoski, I. Shesho	Optimization of Binary Cogenerative Thermal Power Plants with Solid Oxide Fuel Cells on Natural Gas.	International Journal of Mechanical Engineering and Technology (IJMET), (ISSN 0976–6359 Online), Volume 5, Issue 1, pp. 122-131, India, 2014 (JIF 5,77)		
	3.	I. Shesho, D. Tashevski:	Simulation Application for Optimization of Solar Collector Array.	International Journal of Engineering Research and Applications (IJERA), Volume 4, Issue 1, pp. 10-19, (ISSN: 2248-9622), India, 2014 (JIF 1,69)		
	4.	D. Tashevski, D. Dimitrovski	Optimization of Binary Co- generative Thermal Power Plants with SOFC on Solid Fuel.	Chemical engineering transaction, vol. 34, pp. 31-36, (DOI: 10.3303/ CET1334006), Italy, 2013 (SJR Thomson Reuters 0,26)		
	5. D. Tashevski, Th. I. Shesho Pla ten Co		Three-generation Power Plant with High- temperature Fuel Cells for Complex Building.	International Journal of Engineering Research and Development, (e-ISSN: 2278-067X, p-ISSN: 2278-800X), Volume 6, Issue 5, pp. 46-52, India, 2013 (JIF 1.131)		
12.3.	Proof	of at least three inte	rnational meetings' participation	on in the past four years		
	No.	Author	Title	International year		
	1.	D. Dimitrovski, M. Dimitrovski, F. Kitanovska	Pollution from Diesel Engines do to Increase of Imported Vehicles in FYR-	1st International Medical12-14Conference "EnvironmentSeptemberand Public Health" MED2014		
		D. Tashevski:	Macedonia.	ENV 2014, Mamaia,		

					61
			(IOC - 2 <sup>nd</sup> Award)	Romania,	
	2.	D. Dimitrovski,	Biogas – Overview of the	16 <sup>th</sup> Symposium on	22-25
		M. Dimitrovski,	Possibilities for	Thermal Science and	October,
		G. Popsimonova,	Implementation in the	Engineering of Serbia –	2013.
		D. Tashevski	Macedonian Agricultural	SIMTERM 2013, p. 11,	
			Sector. (IOC)	Sokobanja, Serbia,	
	3.	D. Dimitrovski,	Possible Scenarios for	1 <sup>st</sup> Internatinal U.O.C. –	20-23
		K. Belcheska,	Achiving the Goal	B.E.N.A. – Conference	June,
		D. Tashevski,	20/20/20 in FYR-	"The Sustainability of	2013.
		M. Kocubovsk	Macedonia.	Pharmaceutical, Medical	
				and Ecological Education	
				and Research –	
				SPHAMEER – 2013", p. 6,	
				Constanca, Romania.	
				(IOC)	
	4.	D. Tashevski,	Energy and Ecology	1 <sup>st</sup> Internatinal U.O.C. –	20-23
		D. Dimitrovski,	Benefits of Independent	B.E.N.A. – Conference	June,
		Z. Markov,	SOFC/Gas Turbine Co-	"The Sustainability of	2013.
		I. Shesho:	generation Power Plant on	Pharmaceutical, Medical	(IOC)
			Natural Gas.	and Ecological Education	
				and Research –	
				SPHAMEER – 2013", p. 6,	
				Constanca, Romania,	
	5	D. Dimitrovski,	Strategic connection of	International gas	2012
		M. Dimevska,	Republic of Macedonia to	conference of South	
		D. Tashevski:	the European natural gas	Eastern Europe, Sarajevo,	
			streams. (IOC)	Bosnia and Herzegovina,	

Add	. 4	Information about the teac	ormation about the teachers that lecture at the first, second and third study program						
		and are mentors on the do	ctoral thesis						
1.	Name (Fir	st, Last)	Risto Filkoski						
2.	Date of bin	rth	29.04.1964						
3.	Scientific	degree / Title	Ph.D.						
4.	Title of the	e scientific degree	Ph.D. in Technical Sci	iences					
5.	Year and i	nstitution of the scientific	Education	Year		Institution			
	degree		BSc (Dipl. Eng.)	1989		UKIM, Faculty of			
						Mech. Eng., Skopje			
			MSc	1997		UKIM, Faculty of			
						Mech. Eng., Skopje			
			PhD	2004		UKIM, Faculty of			
						Mech. Eng., Skopje			
6.	Area, field	l and particular specialty of	Area	Field		Specialty			
	master of s	science degree	Technical sciences	Power		Power and process			
				engineeri	ng	engineering			
7.	Area, field	l and area of doctoral degree	Area	Field		Specialty			
			Technical sciences	Power		Mathematical			
				engineeri	ng	modelling and			
				U	U	simulation of energy			
						processes			
8.	If employed, state the institution where he/she works and the title and area in which is named		Institution		Title an	nd area			
			University "Sts Cyril a	and	Assoc.	professor			
			Methodius", Faculty o	f		•			
			Mechanical Engineering	ng					
9.	List of cou	urses that the teacher is lecturi	ng separately for first, s	econd and	third cyc	ele			

	9.1.	List o	of courses that the teacher is lecturing in the first cycle					
		No.	Course		Study program/ins	titution		
		1.	Boiler plants		Thermal engineeri	ng		
		2.	Process technique		Thermal engineeri	ng		
		3.	Thermodynamics		Power engineering	and envitonment		
		4.	Energy management and resources		Power engineering	and envitonment		
	9.2.	List o	of courses that the teacher is lecturing in the s	econ	d cycle			
		No.	Course		Study program/ins	titution		
		1.	Modelling of energy conversion processes		Thermal engineeri	ng		
		2.	Steam generators - selected chapters		Thermal engineeri	ng		
		3.	Fuels use and environment		Power engineering and envitonment			
	9.3.	List o	of courses that the teacher is lecturing in the th	cycle				
		NO.		ourse				
		1.	Selected chapters from modelling of energy	Y	I hermal engineeri	ng		
		2	Conversion processes		Dower engineering	and anyitanmant		
		۷.	and environmental impact		Power engineering	, and environment		
10	Selecte	d worl	in the past five years					
10.	10.1	Reley	vant scientific printed paper (up to 5)					
	10.11	No.	Author	Tit	le	Publisher/year		
		1.	R. V.Filkoski, L. Joleska Bureska, I. J.	Ass	sessment of the	Chemical Eng.		
			Petrovski	Im	pact of Under-Fire	Transactions, AIDIC		
				Air	Introduction on	Publ., 2013, 34, 25-30,		
				the	Pulverised Coal	DOI:		
				Co	mbustion	10.3303/CET1334005		
				Efficiency				
		2.	Mikulcic H., Vujanovic M., Markovska	CO	$P_2$ Emission	Chem. Eng. Trans.,		
			N., Filkoski R. V., Ban M., Duic N.	Ree	duction in the	AIDIC Publ., 2013,		
				Cer	ment Industry	Vol. 35, p.703-708,		
						ISBN 978-88-95608-		
						26-6; ISSN 1974-9791		
		3.	V. Strezov, E. Popovic, R. V. Filkoski, P.	Ass	sessment of the	Energy and Fuels, ACS		
			Shah, T. Evans	The	ermal Processing	Publications, 2012, 26,		
				Bel	haviour of	p.5930-5935		
				Tol	bacco Waste			
		4.	R. V. Filkoski	Pul	verised-Coal	The Open		
				Co	mbustion with	Thermodynamics		
				Sta	ged Air	Journal, Vol. 4(2010),		
				Int	roduction: CFD	Bentham Science Publ.,		
				An	alysis with	2010, p. 2-12.		
				Dif	ferent Radiation			
				Me	ethods			
		5.	R. V. Filkoski	Rad	diation Heat	Archives of		
				Tra	unsfer Modelling	Thermodynamics, Vol.		
				and	l CFD Analysis of	30(2009), No. 4, IFFM		
				Pul	verised-Coal	Publishers, 2009, p. 97-		
				Co	mbustion with	118.		
			Sta		ged Air			
				Inti	roduction			
		6.	R. V. Filkoski, S. V. Belošević, I. J.	CF	D Technique as a	Proc. ImechE Part A:		
			Petrovski, S. N. Oka, M. A. Sijerčić	То	ol for Description	Journal of Power and		
			-	of t	the Phenomena	Energy, Vol. 221 (3),		
				Oc	curing in	2007, p. 399-409.		
				Pul	verised Coal			

				6.
			Boilers	
	7.	R. V. Filkoski, I. J. Petrovski, P. Karaś	Optimisation of Pulverised Coal Combustion by Means of CFD/CTA Modelling	(An International Journal of) Thermal Science, Vol. 10 ( <b>3</b> ), 2006, p. 161-179.
10.2.	Parti	cipation in scientific national and internation	al projects (up to 5)	
	No.	Author	Title	Publisher/year
	1.			
10.3.	Print	ted books in the last five years (up to 5)		
	No.	Author	Title	Publisher/year
	1.	R. V. Filkoski	Modelling of energy conversion processes	Tempus CARDS JEP- 19017 "Numerical Simulation Program in Mechanical Eng.", Faculty of Mech. Eng., Skopje, 2009.
	2.	R. V. Filkoski, I. J. Petrovski	Air Pollution Control, Textbook	DEREC Tempus JEP CD_JEP-19840-2004 "Development of Environmental and Resources Engineering Curriculum, Florence- Skopje, 2008.
	3.	M. Azievska (coord.), R. V. Filkoski et al.	Second National Communication on Climate Change	MESP, MASA, Skopje, 2008, ISBN 978-9989- 110-68-9
10.4.	Print	ed professional papers in the last 5 years (up	to 5)	-
	No.	Author	Title	Publisher/year
	1.	Filkoski R. V.	Experiences on the feasibility of the utilisation of vineyard and vine- culture residues for energy purposes	Symp. Biomass solutions for LCP and traffic in Adria region - R&D and application, Adria Section of Int. Combustion Institute, Sarajevo, 2014
	2.	Filkoski R., Tashevski D., Armenski S., Markov Z.	Expert report on the impossibility of hot start, technical problem on gas turbine, latent and other defects during installation and start- up of power plant TE-TO AD Skopje	Faculty of Mech. Engineering, Skopje, Dec. 2013 - Jan. 2014
	3.	I. J. Petrovski, R. V. Filkoski	Energy efficiency improvement and waste heat utilisation in bitumen processing	Technology development project co-fin. by the Ministry of Education and Science of RM, Skopje, 2011
	4.	R.V. Filkoski, I.J. Petrovski, M. Ginovska, H. Borchsenius	A Case Study of Energy Recovery in Ferro-Alloys Industry	II Reg. Conference IEEP '10, Zlatibor, Serbia, 2010.
	5.	R. V. Filkoski, I. J. Petrovski, I. Janev	A Case Study of Energy Management	II Conference "Sustainable

					64
				Improvement in Concrete Products Industry	Development and Climate Changes SUSTAINNIS 2010", Nis, Serbia, 2010.
11.	Superv	vision (	mentorship) of undergraduate, master and doc	toral studies students	
	11.1.	Under	graduate	50	
	11.2.	Maste	r	7	
	11.3.	Docto	ral	3	
12.	For me	entors o	f doctoral thesis, selected work for the last for	ur / five years	
	12.1.	Proof the re	of printed scientific papers in international sc lated field (up to 6) in the past five years	ientific journals or inter	rnational publications in
		No	Author	Title	Publisher/year
		1	R V Filkoski I Joleska Bureska I I	Assessment of the	Chemical Eng
		1.	Petrovski	Impact of Under- Fire Air Introduction on the Pulverised Coal Combustion Efficiency	Transactions, AIDIC Publ., 2013, 34, 25-30, DOI: 10.3303/CET1334005
		2.	Mikulcic H., Vujanovic M., Markovska N., Filkoski R. V., Ban M., Duic N.	CO <sub>2</sub> Emission Reduction in the Cement Industry	Chem. Eng. Trans., AIDIC Publ., 2013, Vol. 35, p.703-708, ISBN 978-88-95608- 26-6; ISSN 1974-9791
		3.	V. Strezov, E. Popovic, R. V. Filkoski, P. Shah, T. Evans	Assessment of the Thermal Processing Behaviour of Tobacco Waste	Energy and Fuels, ACS Publications, 2012, 26, p.5930-5935
		4.	R. V. Filkoski	Pulverised-Coal Combustion with Staged Air Introduc-tion: CFD Analysis with Different Radiation Methods	The Open Thermodynamics Journal, Vol. 4(2010), Bentham Science Publ., 2010, p. 2-12.
	5. R. V. Filkoski		R. V. Filkoski	Radiation Heat Transfer Modelling and CFD Analysis of Pulverised-Coal Com-bustion with Staged Air Introduction	Archives of Thermodynamics, Vol. 30(2009), No. 4, IFFM Publishers, 2009, p. 97- 118.
		6. R. V. Filkoski, S. V. Belošević, I. J. Petrovski, S. N. Oka, M. A. Sijerčić		CFD Technique as a Tool for Description of the Phenomena Occuring in Pulverised Coal Boilers	Proc. ImechE Part A: Journal of Power and Energy, Vol. 221 (3), 2007, p. 399-409.
	12.2.	Proof	of at least two printed scientific papers in inte	ernational scientific jour	rnals that have impact
		tactor	in the related field in the past five years	T:41-	D-11-1-1
		1NO.	Author V Strazov E Dopovio D V Eilkoalti D	Assessment of the	Fublisher/year
		1.	v. Surezov, E. Popović, K. V. Filkoski, P. Shah, T. Evans <u>http://pubs.acs.org/toc/enfuem/26/</u> <u>9#RenewableEnergy</u>	Assessment of the Thermal Processing Behaviour of Tobacco Waste	Publications, 2012, 26, p.5930-5935

							65
	2.	R.V. Filkoski, L. Joleska Bureska, I. Petrovski http://www.aidic.it/cet/13/34/005.pd	J. l <u>f</u>	Assessme Impact of Fire Air Introducti Pulverise	Assessment of the Impact of Under- Fire AirChemical H Transaction Publ., 2013Introduction on the Pulverised Coal30		Enginee-ring ns, AIDIC 5, 34, p.25-
				Combusti Efficiency	on		
	3.	R. V. Filkoski http://www.benthamscience.com/ open/totherj/openaccess2.htm	Pulverise Combusti Staged A	d-Coal on with ir	The Open Thermodyr Journal, Vo	namics bl. 4(2010),	
			Introduc- Analysis Different Methods	with 2010, pp. 2-12. Radiation			
	4.	R. V. Filkoski, S. V. Belošević, I. J. Petrovski, S. N. Oka, M. A. Sijerčić http://pia.sagepub.com/content/221/	CFD Tech a Tool for Description Phenomer Occuring rised Coa	hnique as con of the na in Pulve- l Boilers	nique as Proc. ImechE Part A: J. of Power and Energy, n of the Vol. 221 (3), 2007, pp. a 399-409.		
12.2	5.	R. V. Filkoski, I. J. Petrovski, P. Ka http://thermalscience.vinca.rs/2006/	Optimisat Pulverise Combusti Means of CFD/CTA Modelling	al Boilersation of(An Interred CoalJournal oftion byScience, VfBelgrade,'A161-179.		ntional Thermal ol. 10 ( <b>3</b> ), 2006, pp.	
12.3.	No.	Author	Title	pation in th	Internation	years nal	year
	1.	R. V. Filkoski, M. Chekerovska	Experir and nur study o plate so energy perform	nental merical f a flat- blar collector mance	Proceedin SEEP 201	gs of 4	Dubai, 23- 25 November, 2014
	2.	R. V. Filkoski, I. J. Petrovski	performanceResearch on thepossibility ofusing agriculturebiomass residuesfor energypurposesExperiences onthe feasibility ofthe utilisation ofvineyard andvine-cultureresidues forenergy purposes		Proceedin SEEP 201	gs of 4	Dubai, 23- 25 November, 2014
	3.	Filkoski R. V.			Symp. Bid solutions t and traffic region - R applicatio Section of Combustic	Symp. Biomass solutions for LCP and traffic in Adria region - R&D and application, Adria Section of Int.	
	4.	Filkoski R. V.	The sm energy the den potentia	art concept: nand side al,	DosesCombustion InstituteWorkshop "Smartcept:Grids and Powerl sideHighways for theEnlarged Europe:Assessing theChallenges",EuropeanCommission, JRC,Inst. for Energy andTransport Pattern		Antalya, 18-20 Sept., 2013

				6
5.	Filkoski R.V., Stojkovski F., Stojkovski V.	A CFD study of a solar chimney power plant operation	6 <sup>th</sup> Int. Conf. on Sustainable Energy and Environmental Protection SEEP 2013	Maribor, 20-23 August 2013
6.	Filkoski R.V., Petrovski I.J., Stanojevska B.	Some observations on the possibility of using wine twigs for energy needs	6 <sup>th</sup> Int. Conf. on Sustainable Energy and Environmental Protection SEEP 2013	Maribor, 20-23 August 2013
7.	Filkoski R.V., Bureska L.J., Petrovski I.J.	Improvement of combustion efficiency of pulverised coal with under-fire air introduction	7 <sup>th</sup> Int. Conf. on Sustainable Development of Energy, Water and Environment Systems SDEWES 2012	Ohrid, 2012
8.	Filkoski R. V., Bureska L.J., Petrovski I. J.	CFD as research, educational and design tool in energy and environmental engineering	5 <sup>th</sup> Int. Mechanical Eng. Forum IMEF 2012	Prague, 2012
9.	Filkoski R. V.	Past and present research activities on combustion at the Faculty of Mechani-cal Engineering in Skopje	ACH Combustion Meeting, 2012	Zagreb, 2012
10.	Filkoski R.V., Popovic E., Strezov V.	Experimental study of product composition during slow pyrolysis processing of tobacco residues	7 <sup>th</sup> International Conference on Biomass for Energy	Kyiv, Ukraine, 2011

Add. 4		Inform	nformation about the teachers that lecture at the first, second and third study program						
1.	Name (Fin Last)	st,	Zoran Markov						
2.	Date of bi	rth	23.06.1975						
3.	Scientific degree / Title		Ph.D.	'n.D.					
4.	Title of the scientific degree		Ph.D. in Technical Sciences						
5.	Year and		Education	Year	Institution				
	institution of the scientific degree		Ph.D in Mechanical Engineering	2007	Faculty of Mechanical engineering - Skopje				
			M. Sc. in Mechanical Engineering	2001	Faculty of Mechanical engineering - Skopje				

							67		
			B. Sc. in Mechani Engineer	cal ing	1998		Faculty of Mechanical engineering - Skopje		
6.	Area, f	ield a	nd Area		Field		Specialty		
	specialty of master of science degree		ence sciences	hnical- Mechanic nological ences		cal	Fluid mechanic and fluid flow systems		
7.	Area, f	ield a	nd Area		Field		Specialty		
	area of degree	docto	ral Technica technolo sciences	l- gical	Mechanical		Hydro energy		
8.	If emp	loyed,	state Institutio	n		Title a	nd area		
	the ins where works title an which	titution he/she and th d area is nam	n Ss Cyril e Universi in Mechani	and Me ty, Facu cal eng	Methodius Profes aculty of ngineering		sor, Fluid flow and hydraulic machinry		
9.	List of	cours	es that the teache	r is lec	turing sepa	rately fo	or first, second and third cycle		
	9.1.	List	of courses that th	e teach	er is lectur	ing in th	e first cycle		
		No.	Course		Study prog	gram/in	stitution		
		1.	Fluid mechan	cs	EE, TI, TI	ML, MV	// FME		
		2.	Hydraulic turt	onnes	AFI / FME				
		3	Hydropower r	lant	FF / FMF				
	9.2.	List	of courses that the	e teach	er is lectur	ing in th	e second cycle		
	No.     Course       1.     Theory of turbine and CFD simulation			Study pro	gram/in	stitution			
			Theory of turk and CFD	ory of turbine AFI CFD		AFI / FME			
		2.	Selected chap of Fluid Mech	ters anics	AFI / FME				
		3.	Waste water		EE / FME				
			treatment						
	9.3.	List	of courses that th	the teacher is lecturing in t		ing in th	e third cycle		
		No.	Course	n of	Study program/institution				
		1.	renewable ene in hydraulic	ergy	Mechanic	S / FIVIE			
		2.	Hydro energy environment	and	Mechanics / FME				
10.	Selecte	d wor	k in the past five	years					
	10.1.	Rele	vant scientific pr	inted p	aper (up to	5)			
		No.	Author	Title			Publisher/year		
		1.	Iliev, I.,	Nume	erical	.1	(DOI: 10.1007/s40997-016-0036-2), Iranian		
			Popovski P	inves "Tan	ugation of dem Cascae	ne le"	Journal of Science and Technology, Transactions		
			1 OPOVSKI, I .	Effec	ts for the F	low	of Mechanical Engineering, June 2017, Volume		
				Throu	igh Stay an	d	41 Janua 2 np 160, 176, SCI-1,045		
				Guide	e Vanes of	a	41, <u>issue 2</u> , pp 109–170, SCI=1.045		
				Franc	is Turbine				
		2.	Iliev V.,	A Dy	namic Beh	aviour	Proceedings of the 6th IAHR meeting of the		
			IVIAIKOV Z., Popoveli P	OI LO	W Head	nt	working Group Cavitation and Dynamic Problems, pp. 315-322 Liubliana, Slovenia		
			τορυνδκι Γ.	durin	g the Trans	ient	September 9-11. 2015.		
				Operational Regime		imes	http://iahrwg2015.si/en/papers		

					68				
		3.	Lazarevikj	Influence of the guide	Third Francis 99 Workshop, NTNU, Trondheim,				
			М.,	vanes design on stress					
			Stojkovski F.,	parameters of Francis	Norway, May 2019.				
			Iliev I.,	99 turbine					
			Markov Z.						
		4.	Markov Z.	Multi-criteria analysis	Journal of Environmental Protection and Ecology.				
			Iovanoski I	approach for selection	p 289-303 Vol 14 no 1 (2017) SCI=0 734				
			Dimitrovski	of the most					
			D	appropriate technology					
			<i>D</i> .	for municipal					
				wastewater treatment					
		5		wastewater treatment					
-	10.2	Darti	cination in scien	tific national and internati	ional projects (up to 5)				
	10.2.	No	Author	Title	Etto				
		1	Markov 7 of	HEPD Quality	Norwagian Ministry of Foraign Affairs 2014				
		1.	Markov Z. et	HERD-Quality	Notwegian Winnsu'y of Foleign Affans, 2014-				
			al.	Master Studies in	2010				
				Master Studies in					
				Energy and					
				Environment					
				(QIMSEE)	CEEDLIG N 1 CWL D.G. 1010 00 1510 0015				
		2.	Markov Z. et	Building Knowledge	CEEPUS Network CIII-RS-1012-03-1718, 2017-				
			al.	and Experience	2019				
		-		Exchange in CFD					
		3.	Markov Z. et	Hydroflex	Horizon 2020 research project, 2018-2022				
			al.						
		4.							
	10.0	5.							
	10.3.	Print	ed books in the la	ast five years (up to 5)					
		No.	Author	Title	Publisher/year				
		1.	Markov Z.,	Waste water treatment	Konrad-Adenauer-Stiftung and Wilfired Martens				
			Georgievska		Center-Brussels, 2017				
	10.1	<b>.</b> .	<u>M.</u>						
	10.4.	Print	ed professional p	apers in the last 5 years (i	up to 5)				
		No.	Author		Publisher/year				
		1.	lliev V.,	Analysis of Dynamic	International Simposium "Energetika 2017",				
			Popovski B.,	Behavior of Reversible	Zlatibor, Serbia, Journal of the Energy Society of				
			Markov Z.,	Francis Turbine during	Serbia, Year 19, Vol. 3-4, pp. 392-400, 2017				
			Popovski P.	Transient Operational					
		-		Regime					
		2.	Markov Z.,	Implementing Master	3rd International Conference focused on				
			Dimitrovski	Study Program in	Harmonisation of research and teaching with				
			D., Peceva M.	Sustainable Energy	sustainable development, Shkoder, Albania,				
				and Environment	November 2015				
					http://shkodrabena.com/hertspo2015/hertspo2015/				
		3.	Iliev V., Gajic	Transient Analysis of	Proceedings of the International Conference				
			A., Markov	a Reversible	Energy and Ecology Industry, pp. 43-48,				
			Z., Popovski	Hydropower Plant	Belgrade, Serbia, October 2018				
			Р.						
		4.							
1.	Superv	vision (	(mentorship) of u	ndergraduate, master and	doctoral studies students				
	11.1.	Unde	rgraduate	30					
ļ	11.2.	Mast	er	5					
	11.3.	Docto	oral	1 (2 additional in pro	ogress)				
2.	For me	ntors o	of doctoral thesis,	, selected work for the last	t four / five years				
	12.1.	Proo	f of printed scien	tific papers in internationa	al scientific journals or international publications in				
		the re	elated field (up to	6) in the past five years					
		I No.	Author	Title	Publisher/vear				

ſ		1.						
	12.2.	Proof	of at least tw	o pr	inted scientif	ic papers in	international scientific journ	als that have impact
		factor	in the related	d fie	ld in the past	five years		
		No.	Author		Title		Publisher/year	
		1.						
	12.3.	Proof	of at least th	ree i	nternational 1	neetings' pa	articipation in the past four y	ears
		No.	Author	Tit	e Internation		al meeting/conference	Year
		1.						

. 4	Inform	nation about the teacher	s that lecture at th	e first, second a	and third study program	
Nama (E		and a	re mentors on the	doctoral thesis		
Name (F: Last)	irst,	Ana Lazarevska				
Date of b	irth	11.12.1969				
Scientific	degree	Ph.D.				
/ Title	e					
Title of t	ne	Ph.D. in Technical Scien	ice			
scientific	degree	<b>F</b> loss the n	X		The address in the	
Y ear and	n of the	Education	Year		Institution	
scientific	degree	Ph.d in Engineering	2008		engineering - Skopje	
		M. Sc. In Engineering	2001		Faculty of Mechanical	
					engineering - Skopje	
		B. Sc. In Engineering	1994		Faculty of Mechanical	
Aroo field	dand	A #20	Field		engineering - Skopje	
narticular	·	Technical sciences	Mechanical		Specially Fluid mechanics	
specialty	of	rechnical-sciences	wieenamear		Environmental protection	
master of	science				Linvironnie nui protoction	
degree						
. Area, field and		Area	Field		Specialty	
area of degree	octoral	Technical-sciences	Mechanical		Environmental protection	
If employ	ved.	Institution		Title and area		
state the	7	University of Se Cymil or	d Mathadina	Accepted prof	accon Environmentel	
institutio	n where	faculty of Mechanical er	gineering protection		essor, Environmentai	
he/she w	orks and	fuculty of Mechanical ch	igineering	protection		
the title a	ind area					
named	15					
List of co	ourses that	t the teacher is lecturing se	parately for first, so	econd and third of	cycle	
9.1. I	list of cou	urses that the teacher is lect	turing in the first cy	/cle		
1	Nr. Co	urse	Study program/in	stitution		
1	. Hy	draulics and hydraulic	IND, PInf / FME			
ma		chines				
2. Sys		stems for hydraulic	EE/FME			
		draulia and proumatic				
J. Hy		araune and pheumatic				
		signing systems for	AFI/ FMF			
4. De		fraulic and pneumatic				
		nsport				
5	. Pra	ictice in the industry	AFL EE / FME			
	sm	all and medium				
	ent	erprises				
	Area, fiel particular specialty master of degree Area, fiel particular specialty master of degree If employ state the institution he/she wo the title a in which named List of co 9.1. I 1 2 3 4 5	4InformName (First, Last)ImformName (First, Last)ImformDate of birthScientific degree/ TitleImformScientific degreeYear and institution of the scientific degreeYear and institution of the scientific degreeImformArea, field and particular specialty of master of science degreeImformArea, field and area of doctoral degreeImformArea, field and area of doctoral degreeImformIf employed, state the institution where he/she works and the title and area in which is namedImform9.1.List of course Nr.Imform9.1.List of course in which is namedImform1.Hyd mad and andImform9.1.List of course Nr.Imform1.Hyd mad and andImform5.Pra sm entSm ent	4       Information about the teacher and a a and a         Name (First, Last)       Ana Lazarevska         Date of birth       11.12.1969         Scientific degree       Ph.D.         /Title       Ph.D. in Technical Scient scientific degree         Year and       Education         institution of the scientific degree       Feducation         Year and       Area         institution of the scientific degree       A.Sc. In Engineering         Area, field and particular       Area         specialty of       Masc. In Engineering         master of science       Area         degree       Institution         If employed, state the institution the tit and area in which is named       Institution         List of courses that the teacher is lecturing set of sciences       Systems for hydraulic and pneumatic transport         9.1.       List of course that the teacher is lecturing set of sciences         9.1.       List of course that the teacher is lecturing set of sciences         9.1.       List of course that the teacher is lecturing set of sciences         9.1.       List of course that the teacher is lecturing set of sciences         9.1.       List of course that the teacher is lecturing set of sciences         9.1.       List of course that the teacher is lecturing set of sc	.4       Information about the teachers that lecture at the and are mentors on the scientific degree         Name (First, Last)       Ana Lazarevska         Date of birth       11.12.1969         Scientific degree       Ph.D.         / Title       Ph.D.         Title of the scientific degree       Ph.D. in Technical Science         Year and institution of the scientific degree       Education       Year         Ph.d In Engineering       2008         Area, field and particular specialty of edgree       Area       Field         Area, field and area of doctoral degree       Area       Field         If employed, state the institution where he/she works and the title and area in which is anamed       Area       Field         Ist of courses that the teacher is lecturing separately for first, segont in the dines, faculty of Mechanical engineering       Study program/im         1.       Hydraulic and hydraulic and pneumatic transport       Aria pneumatic transport       Aria pneumatic transport         3.       Hydraulic and pneumatic transport       AFI/ FME       AFI/ FME         4.       Designing systems for hydraulic and pneumatic transport       AFI/ FME         5.       Practice in the industry , small and medium enterprises       AFI/ FME	4       Information about the teachers that lecture at the first, second a and are mentors on the doctoral thesis name (First, Last)         Name (First, Last)       Ana Lazarevska         Date of birth       11.12.1969         Scientific degree       Ph.D.         /Title       Ph.D. in Technical Science         scientific degree       Ph.D. in Technical Science         Year and       Ph.d. In Engineering         Year and       Ph.d. In Engineering         Scientific degree       Ph.d. In Engineering         Year and       Ph.d. In Engineering         Scientific degree       Ph.d. In Engineering         M. Sc. In Engineering       2001         B. Sc. In Engineering       1994         Area, field and particular specialty of master of sciences       Mechanical         geree       Area       Field         If employed, state the institution       Institution       Title and area         factly of Mechanical engineering       Inversity of Sc Cyril and Methodius, faculty of Mechanical engineering       Associate profinetering         If employed, state the institution       Institution       Title and area         If works and the title and area       Inversity of Sc Cyril and Methodius, faculty of Mechanical engineering       Associate profinetering         10.1       Mydraulic a	

						70			
	9.2.	List	of courses that the te	eacher is lect	turing in the second cycle				
		Nr.	Course		Study program/institution				
		1.	Water protection	n and	AFI / FME				
			sustainable deve	lopment					
		2.	Evaluation of	•	IZIS / Ss				
			Environmental I	mpact					
	9.3.	List	of courses that the te	acher is lec	uring in the third cycle				
		Nr.	Course		Study program/institution	Study program/institution			
		1.							
		2.							
10.	Selecte	d wor	k in the past five yea	irs					
	10.1.	Rele	vant scientific printe	d paper (up	to 5)	-			
		Nr.	Author	Title		Publisher/year			
		1.	Lazarevska, A.	"Carbon E	mission Reduction Potential of	Proc. "Energetics 2010"			
			M, Mladenovska,	the Gas-Fi	red Combined Cycle Heat and	International Symposium,			
			D., Sørensen, A.	Power Pla	nt "Energetika'""	Ohrid, 07-09 October,			
			L., Glimsdal, A.			2010.			
		-	I.,						
		2.	Lazarevska, A.	"Is Moder	nization of Bitola Thermal Power	Proc. "Energetics 2010"			
			D Søronson Å	Machanisr	n Project"	Obrid 07.00 October			
			L. Glimsdal A	wiechanisi	II Floject	2010			
			L., Onnisdai, A.			2010.			
		3	Lazarevska A	"A Multi-	Criteria Decision Making	Published in NATO			
			M., Fischer, N.,	Conceptua	l Approach to optimal Landfill	Science for Peace and			
			Münnich, K.,	Monitorin	g"	Security Series – C:			
			Haarstrick, A		-	Environmental Security			
						"GeoSpatial Visual			
						Analytics: Geographical			
						Information Processing			
						and Visual Analytics for			
						Environmental Security",			
						(Eds. De Afficis, R., Stoignouig, P., Conti			
						G) Springer Science			
						Business Media nn 97_			
						112 2009			
		4	Nospal A	"Environn	pental protection and industry.	Published in NATO			
			Lazarevska. A.	Parameter	s necessary for environmentally	Science for Peace and			
			М	related dec	cision making"	Security Series – C:			
					e	Environmental Security			
						"GeoSpatial Visual			
						Analytics: Geographical			
						Information Processing			
						and Visual Analytics for			
						Environmental Security",			
						(Eds. De Amicis, R.,			
						Stojanovic, R., Conti,			
						G.), Springer Science +			
						112 2000			
		5	Lazarovska	"Compara	tive Analysis of Parameters	Mathematica Balkanica			
		5. Lazarevska, "Compara		while Simulating an Air-Pollution	New Series Vol 20				
			1 7.141.	Episode"	mine officiality an 7 m-1 offution	2006, Fasc. 1, np 49-62			
	10.2	Parti	cipation in scientifi	c national a	nd international projects (up to 5)	= 300, 1 abor 1. pp. 17 02			
		Nr.	Author	Title		Publisher/year			
		1.	Cosmo –	EUREM (	European Energy Manager) Plus	Co-funded by the			

					71
			Innovative Center		Intelligent Energy Europe Programme of the EU, 2013 – 2015
		2.	Bilic, I Lazarevska, A.	Open Access to the Enterpreneuership Lifelong Learning (LLL) Education for Persons with Disabilities (PwDs) adjusted for Visually Impared Persons (VIPs), http://www.lll4business.org/	Alumni Engagement Innovation Fund (AEIF), US Department of State 2012 – 2014
		3.	Lazarevska, A.	Ensuring Equal Access through Service Learning for Persons with Disabilities, http://www.equalaccess4pwds.org/	AEIF, US Department of State 2011 – 2012. Macedonian-American Alumni Association (MAAA)
		4.	Lazarevska, A.M. Atanasovski, A.	"Regional JFDP Alumni Conference "Enhancing Accessibility of the Higher Education to the Disabled", Nov. 22-24, 2010 in Skopje/Ohrid, Macedonia": (http://www.maaa.com.mk/jfdp-conference- 2010)	MAAA. Financed by the Junior Faculty Development Program (JFDP) Alumni Grant (JAG), under the auspices of the Alumni Local Initiative Grants Program, funded by the Bureau of Educational and Cultural Affairs of the US Department of State (ECA), administered by the American Councils for International Education: ACTR/ACCELS. (Aug 2010 – Dec 2010)
		5.	Tuneski A.	Development of Environmental and Resources Engineering Learning (DEREL)	EU TEMPUS проект, 2010 – 2014
		6.	Kochov, A.	Cleaner Production (CP) Training (CIRKO National Cleaner Production Center – Macedonia	UNIDO Funded, 2010 – 2011
		7.	A. Nospal et al.	Application of CFD and CAX Technologies in Fluid Flow Processes in Energetics and Ecology.	FME,Ss, financed by the Ministry of education and science, 2006–2009
_	10.3.	Print	ed books in the last	five years (up to 5)	
		Nr.	Author	Title	Publisher/year
		1.	Lazarevska, A. M., Bilić, I., Koçi, A. (Eds.),	"Book of Case Studies: Service Learning Success Stories in Macedonia and Croatia"	MAAA, 2012:
		2.	Lazarevska, A. M., et al.,	"Guidelines for Correct Attitude towards Persons with Disabilities or Limited Abilities in Higher Education" (Eds. Lazarevska, A. M., Trajkovski, V., Petrov, R.), in English (ISBN 978-608-4700-01-2), Macedonian (ISBN 978-608-4700-02-9), Croatian and Albanian	MAAA, 2012:
		3.	Ristovska M. 2012:	"Guidelines for Effective Introduction and Implementation of Service–Learning in Higher Education", (Eds. Lazarevska, A. M., Nikolov, A., Stankovic, M.), in Macedonian (ISBN 978-608-4700-03-6). (Eds. Lazarevska, A. M., Stankosky, M., Koçi, A.), in English (ISBN 978-608-4700- 00-5),	MAAA, 2012:

						72			
		4.	Kochi, A., Reka, A., Lazarevska, A. M. (Eds.),	"Moc extra (ISB)	lel United Nations: A model for curricular Activity", pp. 43 (Eng.), N 978-608-65257-2-9).	MAAA, 2012:			
		5.	2011 Vaclav Smil	Energ	gy in Nature and Society	Datapons, 2013			
	10.4	<b>D</b> · (	(translated book)	•					
	10.4.	Printe	ed professional pape	ers in th	ne last 5 years (up to 5)				
		Nr.	Author	Title	· · D 1 · · A · · · 1 · · 1	Publisher/year			
		1.	Madenovska, D., Lazarevska, A. M	Corre Maki	esponding Indicators in a Decision ng Concept for Site-Selection of Coal	Vth JUBILEE BALKAN MINING CONGRESS, 18 ÷ 21th September			
				1 neu	Thermal Fower Flands	2013 – Ohrid, Macedonia			
		2.	Peeva, L., Jovanovski, D., Lazarevska, A. M., Shushlevska, M.	Cleaner Production Assessment Report of MEGA DOOEL Skopje		2010 – 2011 Cleaner Production (CP) Training (CIRKO National Cleaner Production Center – Macedonia – UNIDO Funded), 2011			
		3.	Lazarevska, A., M.	Draft Coml "Ener	PDD for the CDM Project: "Gas-Fired bined Cycle Heat and Power Plant rgetika"	for AD ELEM, 2010, financed by project leaded by Norsk Energi, Norway			
		4.	Lazarevska, A., M.	Draft "Reh Plant	PDD for the CDM Project: abilitation of Bitola Thermal Power "	for AD ELEM, 2010, financed by project leaded by Norsk Energi, Norway			
11.	Superv	ision (	mentorship) of unde	ergradu	ate, master and doctoral studies students	5			
	11.1.	Unde	rgraduate		2				
	11.2.	Maste	er		-				
	11.3.	Docto	oral		-				
12.	For me	Proof	f doctoral thesis, se	lected	work for the last four / five years				
	12.1.	the re	elated field (up to 6)	in the	past five years	nomulonul publications in			
		Nr.	Author		Title	Publisher/year			
		1.	Lazarevska, A. M	[.,	"A Multi-Criteria Decision Making	Published in NATO			
			Fischer, N., Münr	nich,	Conceptual Approach to optimal	Science for Peace and			
			K., Haarstrick, A.		Landfill Monitoring"	Security Series – C:			
						Environmental Security "GeoSpatial Visual			
						Analytics: Geographical			
						Information Processing			
						and Visual Analytics for Environmental Security",			
						(Eds. De Amicis, R.,			
						Stojanovic, R., Conti,			
						G.), Springer Science + Business Media 2009			
		2	Nospal A		"Environmental protection and	Published in NATO			
		2.	Lazarevska, A. M	[.	industry: Parameters necessary for	Science for Peace and			
			,		environmentally related decision	Security Series – C:			
					making"	Environmental Security			
						"GeoSpatial Visual			
						Analytics: Geographical			
						Information Processing			
						and visual Analytics for			
						(Eds. De Amicis, R.,			
						73			
-------	---------------	--	---	-----------------	---	----------------------------			
					Stojanovic, R., C G.), <b>Springer Sc</b> <b>Business Media</b>	onti, ience + , 2009			
12.2.	Proo facto	f of at least two printed sca r in the related field in the	ientific papers in international past five years	scientific j	ournals that have i	mpact			
	Nr.	Author	Title		Publisher/year				
	1.	Lazarevska, A. M.,	"A Multi-Criteria Decision	Making	Published in NA	ТО			
		Fischer, N., Münnich,	Conceptual Approach to optimal Science for Peace an		e and				
		K., Haarstrick, A.	Landfill Monitoring" Security Series – C		C:				
					Environmental S	ecurity			
					"GeoSpatial Visu	ıal			
					Analytics: Geogr	aphical			
					Information Proc	essing			
					and Visual Analy	tics for			
					Environmental S	ecurity,			
					(Eds. De Amicis, Stoienovia, P. C.	, K.,			
					G) Springer Sc	$ionco \perp$			
					Business Media	2009			
	2.	Nospal, A.,	and	Published in NA	ГО				
		Lazarevska, A. M.	industry: Parameters necess	ary for	Science for Peace and				
			environmentally related dec	ision	Security Series – C:				
			making"		Environmental Security				
					"GeoSpatial Visual				
					Analytics: Geogr	aphical			
					Information Proc	essing			
					and Visual Analytics for				
					Environmental S	ecurity",			
					(Eds. De Amicis,	, K.,			
					Stojanovic, R., Conti,				
					Business Media	2009			
2.3.	Proo	f of at least three internation	onal meetings' participation in	the past fo	our years	, 			
	Nr.	Author	Title	Internatio	onal	year			
			"C 1 E ' '	meeting/o	conterence	2010			
	1.	Lazarevska, A. M,	"Carbon Emission	Proc. "En	ergetics 2010"	2010			
		Mladenovska, D.,	Reduction Potential of the	Internatio	onal Symposium,				
		Sørensen, A. L.,	Gas-Fired Combined	Onrid, 07	-09 October.				
		Ollinsual, A. I.,	Plant "Energetika"						
	2	Lazarevska A M	"Is Modernization of	Proc "Fr	ergetics 2010"	2010			
	2.	Mladenovska D	Bitola Thermal Power	Internatio	onal Symposium	2010			
		Sørensen, Å. L.,	Plant feasible as a Clean	Ohrid, 07	-09 October.				
		Glimsdal, A. I.,	Development Mechanism	,					
			Project						
	3.	Mladenovska, D.,	Determining Relevant	BALKAN	NMINE 2013,	2013			
		Lazarevska, A. M	Attributes and	Vth JUB	LEE BALKAN				
			Corresponding Indicators	MINING	CONGRESS, 18				
			in a Decision Making	$\div$ 21th Se	ptember 2013 –				
			Concept for Site-Selection	Ohrid, M	acedonia				
			ot Coal Fired Thermal						
			Power Plants						

and are mentors on the doctoral thesis Name (First, Last) Dame Dimitrovski 1. 2. Date of birth 21.11.1979 3. Scientific degree / Title Ph.D. 4. Title of the scientific degree Ph.D. in Technical Sciences 5. Year and institution of the Education Year Institution scientific degree PhD. 2010 UKIM, Faculty of Mechanical engineering UKIM, Faculty of Magister of technical 2007 sciences Mechanical engineering UKIM, Faculty of Mechanical engineer 2003 Mechanical engineering Area, field and particular Field 6. Area Specialty specialty of master of science Energetic, Mechanical Thermoenergy IC engines and degree environment engineering Area, field and area of doctoral 7. Area Field Specialty degree Energetic, Mechanical Thermoenergy IC engines and environment engineering If employed, state the institution Institution Title and area 8. where he/she works and the title University of St. Cyril and Associate professor, and area in which is named Methodius in Skopje, Faculty of Thermotechnics and Mechanical engineering Thermoenergetics 9. List of courses that the teacher is lecturing separately for first, second and third cycle 9.1. List of courses that the teacher is lecturing in the first cycle No. Course Study program/institution 1. Design and tuning of IC engines TI, MFS 2. Energy from waste EE, MFS 3. Fuels and engines All. MFS 4. Environmental impact assessment from EE, MFS energy processes 9.2. List of courses that the teacher is lecturing in the second cycle No. Study program/institution Course EE, MFS 1. Waste treatment technologies 2. BZPR, MFS Energy management IC engines advanced technology 1 TI, MFS 3. 9.3. List of courses that the teacher is lecturing in the third cycle No. Study program/institution Course 1. 10. Selected work in the past five years Relevant scientific printed paper (up to 5) 10.1. No. Author Title Publisher/year Dame Dimitrovski Introducing natural gas as a Combustion Institute. 1. second fuel and reconstruction of Western States, USA,

a diesel engine to use dual fuel

technilogy - emissions, economy

Information about the teachers that lecture at the first, second and third study program

Add. 4

74

2008, University of

Southern California

		Dama Dimitanali	Using CNC and Directing the City	Duran lines of the
	2.	Dame Dimitrovski	Using CNG and Diesel in the City	Proceedings of the
			Bus Transport in Skopje	2008 Technical
				Meeting of the
				Central States Section
				of The Combustion
	2			Institute, USA, 2008
	3.	Dame Dimitrovski	Union Regulations of Road	JEPE
			Transport Air Pollution and Its	
			Implementation in the Macedonia	IDDE
	4.	Zoran Markov, Dame	Production and Utilising of	JEPE
		Dimitrovski	Biogas and Other Measures for	
			Increasing Energy Efficiency in	
			the Municipal Wastewater	
	_		Treatment Plant	
	5.	Dame Dimitrovski, Martina	Possible directions for strategic	Proceedings of the
		Dimeska	connection of Republic of	Institute of Gas
			Macedonia to the European	Technology
			natural gas streams	
10.2.	Partic	cipation in scientific national an	d international projects (up to 5)	
	No.	Author	Title	Publisher/year
	1.	Mile Dimitrovski,	Adjustment of the car park - buses	Ministry of education
		Vanco Donev,	JSP and the use of eco fuels,	and science, Skopje
		Elenior Nikolov,	natural gas, development project	2003
		Dame Dimitrovski		
	2.	Dame M. Dimitrovski	Using of Biogas for cogenerative	Project for World
			systems at sanitary landfill -	Scientific
			Drisla Skopje	Organization pages
				6+52
	3.	Dame Dimitrovski,	Lowering the influence of using	National Agency for
		Sonja Filipovska,	day lights and a mean to reduce	Traffic Safety on the
			the emission from small vehicles	roads in 2009, Study
	1	Dame Dimitrovski	Emissions and Imissions in the	National Agency for
	<b>-</b> .		city of Tetoyo traffic	Traffic Safety on the
			development influence on the	roads in 2008 Study
			imissions	100005 m 2000, Study
10.3	Printe	d books in the last five years (u	p to 5)	<u> </u>
	No.	Author	Title	Publisher/vear
	1.	Mile Dimitrovski	Publication: Agro Energy study	Study Agro. Energy
		Dame Dimitrovski	possibilities for the use of	Study nr. 008/2009 -
			renewable energy sources in rural	Biogas 2009
			areas in the country	
	2	Dame Dimitrovski	Monograph: Reducing air	2008. Institute of
		2 and 2 minu o toki	pollution in Skopie by replacing	gaseous technique
			existing fossil fuels with natural	Ministry of education
			gas a candidate for the award	and science of the
			Gotse Delchey 2008 Skonie	Republic of
			ISBN 978-9989-9812 8 9	Macedonia
10.4	Drint	 ad professional papars in the last	$\frac{15011770-7707-7012-0-7}{5 \text{ years (up to 5)}}$	waccuoma
10.4.	No	Author	Title	Dublisher/waar
	110.	Aution	1100	i uunshei/year

					76	
		1.	Dame M. Dimitrovski	Awarded labor original research	International Gas	
				results published in scientific	conference, Beograd,	
				reference / professional journal	Serbia, 2007	
				with an international editorial		
				board: Ecological benefits of NG		
				buses in Skopje, Awarded article		
		2.	Z. Markov, D.Dimitrovski,	Development of Gas Distribution	Proceedings of the	
			V.Aleksic	Network for the city of	Institute of Gas	
				Kumanovo – Challenges and	Technology	
				Solutions, International Gas		
				Conference of South Eastern		
				Europe		
		3.	D. Dimitrovski, M.	Virtual pipelines – short cut to	International Gas	
			Stojanovski, D. Stojanovska	natural gas utilization,	Conference, Sarajevo	
				International Gas Conference of	2012	
				South Eastern Europe		
		4.	Dame Dimitrovski	Why biogas from agriculture and	Zemak, Ohrid, 2010	
				livestock, haven't became the		
				basis for rural development in		
				Macedonia		
		5.	Done Tashevski, Dame	Optimization of binary co-	JETP	
			Dimitrovski	generative thermal power plants		
				with SOFC on solid fuel		
11.	Superv	vision (n	nentorship) of undergraduate, m	aster and doctoral studies students	1	
	11.1.	Underg	graduate	27		
	11.2.	Master		5		
	11.3.	Doctor	al	/		
12.	For me	ntors of	doctoral thesis, selected work f	or the last four / five years		
	12.1.	Proof	of printed scientific papers in in	ternational scientific journals or inter	rnational publications	
		in the	related field (up to 6) in the past	t five years		
		No.	Author	Title	Publisher/year	
		1.	Gordana Popsimonova,	Greenhouse production in	MESJ	
			Biljana Ristovska, Dame	Macedonia – challenges and	77–84, UDC 621,	
			Dimitrovski (CA), Goce	opportunities	CODEN: MINSC5,	
			Georgievski		ISSN 1857 – 5293	
		2.	Dame Dimitrovski, Blagojce	Review of printed scientific	Mechanical	
			Bogatinovski	paper in Mechanical engineering	engineering –	
				up to date MESJ, review	Scientific journal	
					vol.30, 2012	
		3.	Dame Dimitrovski, Goran	Possibilities for pollution	Mechanical	
			Dimeski	reduction from households by	engineering –	
				implementing natural gas	Scientific journal vol	
					32-1, 2014	
		4.	Dame Dimitrovski, Mile	Pollution from diesel engine with	Mechanical	
			Dimitrovski, Elena	emphasis on pollution in	engineering –	
			Kitanovska, Done Tashevski	Macedonia	Scientific journal vol	
					32-1, 2014	
	12.2.	Proof	of at least two printed scientific	papers in international scientific jou	rnals that have impact	
		factor	in the related field in the past fi	ve years		

								77
		1.	Z. MARKOV, D.		Production and Utili	sing of	Journal of	f
			DIMITROVSKI, I.		Biogas and Other M	easures for	environm	ental
			JOVANOSKI, A.		Increasing Energy E	fficiency in	protection	n and
			NENCHEV.		the Municipal Waste	ecology,	2013, vol.3	
					Treatment Plant p.10			
		2.	M. DIMITROVSKI, Z.		European Union Reg	Journal of	f	
			SAPURIC, D.		Road Transport Air	environm	ental	
			DIMITROVSKI CA, M.	Its Implementation in	protection	n and		
			KOCHUBOVSKI.		Macedonia p.813	ecology,	2013, vol.3A	
		3	Done Tashevski, Dame	Optimization of bina	Chemical	Engineering		
		Dimitrovski			generative thermal p	ower plants	ISSN· 19	749791
					with SOFC on solid	Iuei	1001111	, , , , , , , , , , , , , , , , , , , ,
		4	D. Tashevski,		Analysis of Parameter	ers Affecting	Internatio	nal Journal
			R. Filkoski, the Efficiency Optimization of					nical
			D. Dimitrovski,	nitrovski, Binary SOFC Co-generat				ing and
			I. Shesho		Power Plants.		Technolo	gy (IJMET),
							(ISSN 09	76–6359
							Online), '	Volume 5,
							Issue 10,	pp. 180-190,
							India, 201	l4 (JIF
	5 Dame Dimitrovski, Mile Dimitrovski, Antonio					7,5377)		
				Model for calculation	n of NOx	JEPE, 20	14, accepted	
				from public transpor	t in the city	for publis	hing, vol 4	
	10.0	D C	Jovanovski	1	of Skopje	.1		
	12.3.	Proof	of at least three internationa	al me	etings' participation in	the past four	years	
		NO.	Author	I itle	e	International	fanan aa	year
		1	D Dimitmorphi	De11	ution from Dissol	1 <sup>st</sup> Intermetic		12.14
		1.	D. Dimitrovski, M. Dimitrovski	Foil	inos do to Incrosso	1 Internation	forence	12-14 Sontombor
			Kitanovska	of I	morted Vehicles in	"Environme	nt and	2014
			D. Tashevski	FY	R-Macedonia	Public Healt	h" MFD	2014.
			D. Tublic voki.		$C = 2^{nd}$ Award)	ENV 2014	Mamaia	
				(10)	e 2 11. and	Romania	viumun,	
		2.	D. Dimitrovski	Bio	gas – Overview of	16 <sup>th</sup> Sympos	ium on	22-25
			M. Dimitrovski.	the	Possibilities for	Thermal Sci	ence and	October.
			G. Popsimonova,	Imp	lementation in the	Engineering	of Serbia	2013.
			D. Tashevski	Mac	cedonian	- SIMTERN	1 2013, p.	
				Agr	icultural Sector.	11, Sokoban	ja,	
				(IO	C)	Serbia,		
			D. Dimitrovski,	Pos	sible Scenarios for	1 <sup>st</sup> Internatin	al	20-23 June,
			K. Belcheska,	Ach	iving the Goal	U.O.C. – B.I	E.N.A. –	2013.
			D. Tashevski,	20/2	20/20 in FYR-	Conference	"The	
			M. Kocubovsk	Mac	cedonia.	Sustainabilit	y of	
						Pharmaceuti	cal,	
						Medical and		
						Ecological E	ducation	
						and Research	h –	
						SPHAMEE	<b>K</b> –	
						2013", p. 6,		
		1				Constanca, I	komania.	

		(IOC)	
D. Tashevski,	Energy and Ecology	1 <sup>st</sup> Internatinal	20-23 June,
D. Dimitrovski,	Benefits of Independent	U.O.C. – B.E.N.A. –	2013.
Z. Markov,	SOFC/Gas Turbine Co-	Conference "The	(IOC)
I. Shesho:	generation Power Plant	Sustainability of	
	on Natural Gas.	Pharmaceutical,	
		Medical and	
		Ecological Education	
		and Research –	
		SPHAMEER -	
		2013", p. 6,	
		Constanca, Romania,	
D. Dimitrovski,	Strategic connection of	International gas	2012
M. Dimevska,	Republic of Macedonia	conference of South	
D. Tashevski:	to the European natural	Eastern Europe,	
	gas streams. (IOC)	Sarajevo, Bosnia and	
		Herzegovina,	

Add.	4	Ι	Information about th	formation about the teachers that lecture at the first, second and third study program							
1	Nama (1	First	Last)	Darko Babunski	n the doctora	thesis					
2	Date of	hirth	Last)	04 10 1975							
2.	Scientif	ic de	oree / Title	Ph D /Assistant Professor							
<u>э</u> . Л	Title of	the o	cientific degree	Ph D in Technical Sciences							
+. 5	Year an	$\frac{d}{d}$ inst	titution of the	Education	Year		Institution				
5.	scientifi	c dec	Tree	Dh D	2012		Eaculty of Machanical				
	Serentin	e aeg	5100	1 11.D	2012		Engineering - Skopie				
				M.Sc	2006		Faculty of Mechanical				
							Engineering - Skopje				
				B.Sc	1999		Faculty of Mechanical				
							Engineering - Skopje				
6.	Area, field and particular		nd particular	Area	Field		Specialty				
	specialty of master of science		master of science	Technical Sciences	Mechanica	l	Control Systems				
	degree	egree			Engineering						
7.	Area, field and area of doctoral		nd area of doctoral	Area	Field		Specialty				
	degree			Technical Sciences	Mechanica	l	Control Systems				
					Engineering						
8.	If emplo	byed,	state the institution	Institution		Title and area					
	and area	a in w	works and the fifte hich is named	Faculty of Mechanical Engineering Assistant			nt Professor, Automation				
9.	List of c	cours	es that the teacher is l	lecturing separately for f	first, second an	d third cy	vcle				
	9.1.	List	of courses that the tea	acher is lecturing in the t	first cycle						
		No.	Course		Study progra	m/institut	tion				
		1.	Programmable Lo	ogic Controllers	Automatics a	nd Contro	ol Systems, Faculty of				
					Mechanical H	Engineerii	ng – Skopje				
		2.	Control and autor	nation of HEP	Energetics ar	d Ecolog	y/ Faculty of				
					Mechanical I	Engineerin	ng – Skopje				
		3.	Practice in the inc	lustry, small and	Automatics a	$\frac{1}{2}$ nd Control	ol Systems, Faculty of				
	0.2	T :	medium enterpris	es	IVIECHANICAL E	ngineerii	ng – Skopje				
	9.2.	List (	Courses that the tea	icher is lecturing in the	Study process	mlingtitest	ion				
	-	1NO.	Course	- <b>f</b> 1. '	Study progra	m/mstitut					
		1.	Computer control	of machines and Automatics and Control Systems		of Systems, Faculty of					

						79
			processes		Mechanical Engineeri	ng – Skopje
		2.	Real – Time control systems	and	Automatics and Contr	ol Systems, Faculty of
			Hardware-in-the-loop		Mechanical Engineeri	ng – Skopje
	9.3.	List o	f courses that the teacher is lectu	uring in the t	third cycle	
		No.	Course		Study program/institut	tion
10	<u>a</u> 1	1.	· .1			
10.	Selecte	d work	in the past five years	5		
	10.1.	Relev	ant scientific printed paper (up t	(0 5) Tidle		Dublishan/waan
		1NO.	Autnor	1 itie	on of Spectrolycon	Publisher/year
		1.	al	Device Me	son of Spectrolyser	Environmental
				Standard A	Analysis of	Contamination and
				Wastewate	er Samples in Novi	Toxicology, September
				Sad, Serbia	a "	2014, Volume 93,
						Issue 3, pp 354-359
						SCI=1.216
		2.	V. Iliev, D. Babunski, et al.	Direct Dig	ital Control of HVAC	International Journal of
				System and	d CO2-Based Demand	Innovative Technology
				Controlled	ventilation	and Exploring
						(IIITEE) p 12-17 Vol
						3, no.9 (2014),
						SCI=0,546
		3.	D. Babunski, E. Zaev, A.	Simulation	n of Load Rejection on	proceedings of MECO
			Tuneski	a Nonlinea	ar Hydro Power Plant	2012 conference, Bar,
				Model with	h Mixed Mode	Monteenegro, pp. 275-
		4	E Zaau D Dahunghi at al	Nonlinear	Controller	2/8 Dreasedines of the 6 th
		4.	E. Zaev, D. Babunski et. al	Simulation	and SCADA software	Appual South East
				testing	and SCADA software	European Doctoral
				testing		Students Conference,
						Thessaloniki, Greece,
						2011
		5.	D. Babunski, E. Zaev, A.	SCADA si	imulation for	Proceedings of the IX
			Tuneski	monitoring	g and control of HPP	National Conference
				using Robi	ust Law	With International
						Participation ETAI
						90 Ohrid R
						Macedonia, 2009
	10.2.	Partic	ipation in scientific national and	d internation	nal projects (up to 5)	
		No.	Author	Title		Publisher/year
		1.	A. Tuneski, D. Babunski et	Developm	ent of Environment	<b>TEMPUS</b> Joint Project
			al.,	and	- · · · · ·	JP-511001-2010, 2010-
				Resources	Engineering Learning	2014
		2	A Tuneski D Babunski et	- DEKEL	ent of	TEMPLIS Loint
		2.	al.	Environme	ent and Resources	European Project IEP-
			,	Engineerin	ng Curriculum -	19028 20042005-
				DEREC	0	2008,
		3.	A. Tuneski, D. Babunski et	"Monitorii	ng and Improving the	NATO Partnership for
			al.,	Kivers in t	ne vardar/Axios	Peace collinanced
				vv ater sned	(WIIK V AA),	2006-2008
	10.3	Printe	d books in the last five years (m	p to 5)		2000 2000
		No.	Author	Title		Publisher/year

		1.							
	10.4.	Printee	d professional papers in the	last 5 y	year	rs (up to 5)			
		No.	Author	Т	ïtle			Publisher/y	vear
		1.							
11.	Superv	vision (n	nentorship) of undergraduat	e, mast	ter a	nd doctoral studi	es students		
	11.1.	Underg	graduate		7				
	11.2.	Master				1			
	11.3.	Doctor	al						
12.	For me	ntors of	doctoral thesis, selected we	ork for	the	last four / five yea	ars		
	12.1.	Proof of printed scientific papers in international scientific journals or international publications							
		in the related field (up to 6) in the past five years							
		No.	Author	Title		2	Publisher/ye		rear
		1.							
	12.2.	Proof	of at least two printed scien	tific pa	pers	s in international	scientific jou	urnals that h	ave impact
		factor	in the related field in the pa	st five	year	rs			
		No.	Author	1	Title	e		Publisher/y	vear
		1.							
	12.3.	Proof	of at least three internationa	ıl meeti	ings	' participation in	the past four	r years	
		No.	Author	Title			Internation	al	Year
							meeting/co	onference	
		1.							

I	Information about the teachers that lecture at the first, second and third study program and are mentors								
				on the doctoral thesis					
1	Name	(First, La	ast)	Ana Frichand					
2	Date of	f birth		26.01.1978					
3	Scienti	fic degre	ee / Title	Ph.D.					
4	Title of	f the scie	entific degree	Ph.D in Psychology					
5	Year a	nd institu	tion of the scientific	Education	Year	Institution			
•	degree			BSc. in Psychology	2001	Faculty of Philosophy, Skopje			
				MSc. in Psychology	2007	Faculty of Philosophy, Skopje			
				Ph.D. in Psychology	2010	Faculty of Philosophy, Skopje			
6	Area, f	field and	particular specialty of	Area	Field	Specialty			
•	master	of sciend	ce degree	Social sciences	Psychology	Developmental psychology			
7	Area, f	field and	area of doctoral	Area	Field	Specialty			
•	degree			Social sciences	Psychology	Developmental psychology			
8	If emp	loyed, sta	ate the institution	Institution	Title and area				
	where	he/she w	orks and the title and	Faculty of Philosophy,	Associate professo	or, Developmental			
	area in	which is	snamed	Skopje	psychology, Psychology of education and fostering u Military psychology				
9	List of	courses	that the teacher is lectur	ring separately for first, second	nd and third cycle				
•	9.1.	List of	courses that the teacher	is lecturing in the first cycle					
		Nr.	Course		Study program/ins	stitution			
		1.	Psychology of childho	ood and adolescence	Psychology/Faculty of Philosophy				

		2.	Psychology of adulthood and agin	ng	Psychology/H	Faculty of Philosophy	
		3.	Moral development		Psychology/Faculty of Philosophy		
		4.	Conflict transformation		Psychology/Faculty of Philosophy		
		5.	Development of children and ado	lescents in the	Family studies/Faculty of Philosophy		
			family		5	5 1 5	
		6.	Development of adults and aging	in the family	Family studies/Faculty of Philosophy		
		7.	Developmental psychology		Pedagogy and	d Special education and	
					rehabilitation	/Faculty of Philosophy	
		8.					
	9.2.	List of	courses that the teacher is lecturing	in the second cyc	le		
		Nr.	Course		Study progra	m/institution	
		1.	Developmental psychology		Psychology/H	Faculty of Philosophy	
		2.	Applied developmental psycholog	gy	Psychology/H	Faculty of Philosophy	
		3.	Moral psychology		Psychology/H	Faculty of Philosophy	
		4.	Conflict resolution		International	relations/Faculty of	
					Philosophy		
		5.	Mediation and negotiation		International	relations/Faculty of	
					Philosophy		
		6.	Psychology of children and youth	l	Juvenile deli	nquency/Faculty of	
					Philosophy		
		7.	Experts in teamwork		Faculty of M	lechanical engineering	
		8.	Psychology	Faculty of Ph	armacy		
	9.3.	List of	courses that the teacher is lecturing	1			
		Nr.	Course		Study progra	m/institution	
		1.	Developmental psychology		Psychology/I	Faculty of Philosophy	
		2.	Current trends in moral psycholog	gy	Psychology/H	Faculty of Philosophy	
1	Selecte	ed work	in the past five years				
0	10.1.	Releva	nt scientific printed paper (up to 5)				
•		Nr.	Author	Title		Publisher/year	
		1.	Pajaziti, A.; Blazevska	From Inclusive I	dentities to	Iliria	
			Stoilkovska, B.; & Fritzhand.	Inclusive Societi	es: Exploring	International Review, 6,	
			А.	Complex Social	Identity in	2, 31-45, DOI:	
				the Macedonian	Context	10.21113/11r.v612.273,	
						niria College, Kosovo	
						Ealin Varlag	
						Felix-veriag,	
		2		D (111		Germany (2016)	
		2.	Shurbanovska, U.; Frichand,	Parent-child	the Ferniler	Sociological Review, 17,	
			A., & Blazevska Stolikovska, B.	Teday	the Family	2, 49-02, UDK	
				Today		052 6	
						316.356.2.063.24:31	
						6.628-053.6 Skopje:	
						Bomat Graphics	
						(2016)	
		3.	Fritzhand, A., & Blazevska	Social dominance	e orientation	Security Dialogues, 7,	
			Stoilkovska, B.	and Trust in insti	tutions	<i>1</i> , стр.	
				among Macedon	an and	7-24 ISSN 1857-7172,	
				Albanian Young	Adults	Skopje, Faculty of Philosophy (2016)	
		4.	Fritzhand, A	The Relationshin	between the	Proceedings form the	
			Mirovic, T., & Hadzic,	Perception of Par	renting Style	international scientific	
			A.	and Early Malad	aptive	conference "Theory and	
				Schemes: Evider	ice from the	practice in psychology"	
				Study on Adoles	cents and	October, 30 –	
				Young Adults in	Macedonia	November, 1, 2014, 171-	
				and Serbia.		197, Skopje, Faculty of	

				Psychology (2016)
	5.	Frichand, A. & Petrovic, N.	The Culture of Peace:	Security Dialogues
			Measuring the Emotional	Vol.5 No.1, ctp. 145
			Climate in the Republic of	162 Skopje, Faculty of
			Macedonia	Philosophy (2014)
0.2.	Partic	ripation in scientific national and inte	rnational projects (up to 5)	-
	Nr.	Author	Title	Publisher/year
	1.	University of Belgrade, Serbia;	National coordinator of	<b>RRPP</b> and Swiss
		University of Banja Luka, R.	the regional scientific	Agency, September,
		Srpska; University of Sarajevo,	project "From Inclusive	2014-November, 2016
		BiH; American University in	Identities to Inclusive	
		Pristina and State University of	Societies: Exploring	
		Pristina; Kosovo	Complex Social Identities	
		Frichand, A.; Blazevska	in Western Balkans	
		Stoilkovska, B.; Pajaziti, A.,	Youth"	
		Rustemi, A., и Qose, A. from North	h	
		Macedonia		
	2.	Stojanoska Ivanova, T. and	Principal researcher in the	City of Skopje and NG
		Frichand, A.	national project How to	"Women Action" in
			achieve safer schools?"	Skopje 2016
	3.	Blazevska Stoilkovska, B.,	Interaction between the	Faculty of Philosophy.
		Shurbanovska, O <b>Frichand, A</b> .	work and the family:	UKIM. 2017
		and Stojanoska Ivanova, T.	study of importance.	011111, 2017
			integrativeness, control	
			and the conflict of work	
			and family roles in	
-			teachers from R of	
			Macedonia	
	4.	Anastasovski, I., Zivkovic, V.,	"The impact of	National – bilaterla
		Aleksovska Velichkovska, L.,	attachment to national	projects between R.
		Naumovski, M., Milenkovski, J.,	sport representations on	North Macedonia and
		Naney, L., Stojanoska Ivanova, T.,	the national identity	Montenegro, 2017
		Frichand, A., Daskalovski, B. and	of youth in R. of	
		Misovski, A.	Macedonia"	
	5.			
0.3.	Printe	ed books in the last five years (up to 5	)	
	Nr.	Author	Title	Publisher/year
	1.	Fritzhand, A.	Moral Thinking and	(2013). ISBN 978-3-
			Moral Self-concept in	639-51916-7 Germany:
			Adolescence: Results from	Scholars Press
			the Study on Adolescents	
			in the Republic of	
			Macedonia.	
	2.	Stojanoska Ivanova, T. and	Together towards safer	Women Action, Skopje
		Frichand, A.	schools	2017
				ISBN 978-9989-2645-9
				7
	3.	Stojanoska Ivanova, T. and	Moral values through the	Women Action, Skopje
		Frichand, A.	lenses of the life and work	2017
			of Mother Teresa	
	4.			1
	5.			1
0.4	Printe	ed professional papers in the last 5 ver	ars (up to 5)	. <u>.</u>
	Nr.	Author	Title	Publisher/vear
	1			, , , , , , , , , , , , , , , , ,
	2			<u> </u>
	3			
	5.			1

		4.					
		5.					
1	Superv	vision (m	entorship) of undergradua	ate, master an	nd doctoral studies stud	lents	
1	11.1.	Underg	raduate	120			
	11.2.	Master		17			
	11.3.	Doctora	ıl	/			
1	For me	ntors of o	doctoral thesis, selected w	vork for the la	ast four / five years		
2	12.1.	Proof o	f printed scientific papers	s in internatio	onal scientific journals	or inter	national publications in
•		the rela	ted field (up to 6) in the p	bast five years	S	D 11	• /
		Nr.	Author	1 itle	11	Publis	sher/year
		1.	Frichand, A.	vocabulary	rls from early and	AIN. 025	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
				middle child	dhood	Sko	nie Faculty of
				initiatie enne	anooa	Phil	osophy. 2017
		2.	Fritzhand, A.,	The Role of	f Sports in	Res	earch in Phisical
			Kitkanj, Z.,	Overcoming	g Aggression in	Edu	cation, Sport and
			Anastasovski, I.,	Children an	d Adolescents.	Hea	lth, 6, 2, 109-111, ISSN
			Aleksovska			185	7-8152, 2017
			Velichkovska, L.				
		3.	Fritzhand, A. &	Contempora	ary Challenges to	Pro	ceedings from the 9-th
			Gjurovski, M.	Conflict Re	solution Approach	inte	rnational scientific
				International Security		Sve	tem Reforms as a
				international Security.		Pred	condition for Euro-
						Atla	antic Integrations",
							id, Macedonia, 61-70,
						UD	K:327.5:327-049.6-
		4				049	.3(100), 2018
		4.	Miloshevska, T. &	Risk Factors Increasing		Secur	ity Dialogues, 9, 2, $4/-$
			Fritzhand, A.	Children.		38, 20	/18
		5.	Miloshevska, T.,	Digital Med	lia Revolution and	Inte	rnational Journal of
			Bakreski, U., Eritzband A	Political Vi	olence	Mu. 7	3 85 04 University
			Thulland, A.			7, Pub	lications.net. 2018
		6.	Pajaziti, A.;	Towards Inc	clusive Social	In: Pratto, F., Žeželj, I.,	
			Blazhevska	Identities in	the Republic of	Mal	oku, E., Turjačanin, V.,
			Stoilkovska, B.; &	Macedonia.		Bra	nković, M. (Eds.).
			Fritzhand, A.,			Sha	ping Social Identities
			Rustemi, A., Qose, A.			Afte	er Violent Conflict:
						I OL Roll	lin in the western
						Mad	millan ISBN 978-3-
						319	-62020-6, 2017
	12.2.	Proof o	f at least two printed scie	ntific papers	in international scienti	fic jour	mals that have impact
		factor in	n the related field in the p	oast five years	S		
		Nr.	Author	D	Title		Publisher/year
		1.	Blazevska Stoilkovska,	B.,	Life Role Salience	e and Boing	International Journal
			Shurbanovska, U., Fritz Stojanovka Ivanova, T	$A. \alpha$	among Maced	onian	of Occupational Medicine and
					Employees	Does	Environmental Health
					Family Supp	ortive	2018, 31, 3, 281-291
					Organization Perce	eption	
					Moderate	this	
		2		01	Relationship		
		2.	Thoma, S.; Walker, D.;	Chen,	Relationship Assessing adolese	cent's	Developmental

			cultural co	ontexts: An	
			empirical	summary of	
			studies	using the	
			Adolescent	Intermediate	
			Concepts M	leasure	
12.3.	Proof c	of at least three international	l meetings' participation in	n the past four years	
	Nr.	Author	Title	International	year
				meeting/conference	
	1.	Fritzhand, A. &	Can Conflict Resolution	International	October, 19-
		Gjurovski, M.	Effectively Deal With	conference "Security,	21, 2018,
			Terrorism? Critical	Political and Legal	Bitola
			Overview of	Challenges of the	
			Overview of	Modern World"	
			Contemporary		
			Challenge to		
			International Security.		
	2.	Fritzhand, A. &	The Role of Socio-	7th Climate Change,	September,
		Tashkovski, I.	psychological	Economic	27-29, 2018,
			Approach to Conflict	Development,	Struga
			Resolution in	Environment and	C
			Maintaining	People Conference,	
			(Inter)National Peace	(ACEU 2018)	
			and Stability		
	3.	Anastasovski, I.;	The relationship	Colloque	May, 10-12,
		Velichkovska, L.A.;	between gender and	international "La ville	2017, Brest,
		Frichand, A.; &	application of	et le sport",	France
		Kocevski, N.	traditional sports games	_	
			in social integration of		
			school age children		

Add.	. 4	Information about the teachers that lecture at the first, second and third study program								
			and are mentors on	the doctoral	thesis					
1.	Name (Fir	rst, Last)	Emil Zaev							
2.	Date of bi	rth	13.02.1976							
3.	Scientific	degree / Title	Ph.D./Assistant Profess	sor						
4.	Title of the	e scientific degree	Ph.D. in Technical Scie	ences						
5.	Year and i	institution of the	Education	Year		Institution				
	scientific of	degree	Ph.D	2013		Faculty of Mechanical Engineering - Skopje				
			M.Sc	2006		Faculty of Mechanical Engineering - Skopje				
			B.Sc	1999		Faculty of Mechanical Engineering - Skopje				
6.	Area, field	l and particular	Area	Field		Specialty				
	specialty of degree	of master of science	Technical Sciences	Mechanical Engineering	l g	Control Systems				
7.	Area, field	l and area of doctoral	Area	Field		Specialty				
	degree		Technical Sciences	Mechanical Engineering	g	Control Systems				
8.	If employed, state the institution		Institution		Title an	d area				
	and area in	n which is named	Faculty of Mechanical –Skopje	Engineering	Assistant Professor, Automation					
9.	List of cou	urses that the teacher is 1	ecturing separately for fin	rst, second an	d third cy	vcle				
	9.1. Li	st of courses that the tea	cher is lecturing in the fi	rst cycle	-					

		No.	Course		Study program/institut	tion			
		1.	Monitoring and Control		Automatics and Contr	ol Systems, Faculty of			
					Mechanical Engineeri	ng – Skopje			
		2.	Control and automation of HI	EP	Energetics and Ecolog	gy/ Faculty of			
					Mechanical Engineeri	ng – Skopje			
		3.	Practice in the industry, small	and	Automatics and Contr	ol Systems, Faculty of			
			medium enterprises		Mechanical Engineeri	ng – Skopje			
	9.2.	List of	f courses that the teacher is lectu	aring in the s	second cycle				
		No.	Course		Study program/institut	tion			
		1.	Proportional technology		Automatics and Contr	Automatics and Control Systems, Faculty of			
					Mechanical Engineeri	ng – Skopje			
		2.	Real – Time control systems	and	Automatics and Control Systems, Faculty of				
			Hadrware-in-the-loop		Mechanical Engineeri	ng – Skopje			
	9.3.	List of	f courses that the teacher is lectu	aring in the t	nird cycle				
		No.	Course		Study program/institut	tion			
		1.							
10.	Selecte	d work	in the past five years						
	10.1.	Relev	ant scientific printed paper (up t	o 5)					
		No.	Author	Title		Publisher/year			
		1.	Emil Zaev, Gerhard Rath,	"Energy E	fficient Active	SICFP2013, Sweden,			
			and Hubert Kargl	Vibration 1	Damping"	2013			
		2.	Gerhard Rath and Emil Zaev	"Cylinder	Pressures in a Position	Scandinavian			
				Controlled	SystemWith Separate	International			
				Meter-in a	nd Meter-out"	Conference on Fluid			
						Power, 2013			
		3.	Emil Zaev, Gerhard Rath, et	"HPP Sim	ulator for Real-Time	DSC2011,			
			al.	Simulation	and SCADA	Thessaloniki, Greece,			
				Software 1	l'esting"	2011			
		4.	Emil Zaev, Gerhard Rath,	"Design of	a Hydraulic Damper	SysStruc 2011, Resita			
		~	Hubert Kargi	for Heavy	Machinery	Romania, 2011			
		5.	Emil Zaev, Gernard Rath, et	"Hydro Po	wer Plant Governor	MECO 2012, Bar,			
			al.	Testing Us	sing Hardware-in-ine-	Montenegro, 2012			
	10.2	Dortio	instion in scientific national and	d internetion	ulation",				
	10.2.	No	Author	Titlo	1al projects (up to 5) Publisher/year				
		1	Atanasko Tuneski Emil	Developm	ent of Environment	TEMPLIS Joint Project			
		1.	Zaev et al	and		ID 511001 2010 2010			
				Resources	Engineering Learning	2014			
				- DEREL	Engineering Learning	2011			
		2.	Atanasko Tuneski, Emil	Developm	ent of	TEMPUS Joint			
			Zaev et al.	Environme	ent and Resources	European Project JEP-			
				Engineerir	ng Curriculum -	19028 20042005-			
				DEREC	-8	2008,			
						,			
		3.	A. Tuneski, Emil Zaev, et al.	"Monitorin	ng and Improving the	NATO Partnership for			
				Rivers in t	he Vardar/Axios	Peace cofinanced			
				Watershed	(MIRVAX)",	project, SfP981877,			
				() atorshou		2006-2008			
		4.	A. Tuneski, D. Babunski, E.	Tuneski, D. Babunski, E. "Proektiran		proekt za tehnoloshki			
			Заев i dr.	za dalechii	nsko upravuvawe i	razvoj finansiran od			
				monitoring	g na tehnoloshkite	GTZ (German			
				procesi vo	prehrambena i	Technical			
				cementna	industija"	Cooperation) 2003			
		5.	A. Tuneski, D. Babunski, E.	"Optimaln	o, robustno	Ministerstvoto za			
			Заев i dr.	upravuvaw	ve na nelinearni	obrazovanie i nauka na			
				sistemi so	nadvoreshni	R. Makedonija, 2003-			
				poremetuv	anja"	2006			

	10.3.	Printee	l books in the last five year	s (up to 5	)			
		No.	Author	Title	e		Publisher/y	vear
		1.						
	10.4.	Printee	d professional papers in the	last 5 yea	rs (up to 5)			
		No.	Author	Title	2		Publisher/y	<i>'ear</i>
		1.						
11.	Superv	vision (n	nentorship) of undergraduat	e, master	and doctoral studi	es students		
	11.1.	Underg	graduate		5			
	11.2.	Master						
	11.3.	Doctor	Doctoral					
12.	For me	entors of doctoral thesis, selected work for the last four / five years						
	12.1.	Proof of printed scientific papers in international scientific journals or international publications						
		in the	related field (up to 6) in the	past five	years		ſ	
		No.	Author	Tit	le		Publisher/year	
		1.						
	12.2.	Proof	of at least two printed scien	tific pape	rs in international	scientific jo	urnals that h	ave impact
		factor	in the related field in the pa	st five ye	ars			
		No.	Author	Tit	le		Publisher/y	vear
	10.0	1.						
	12.3.	Proof	of at least three international	ational meetings' participation in the past four years			r years	
		No.	Author	Title		Internation	al	Year
						meeting/co	onterence	
		1.						

Add. 4		Inf	formation about the	e teachers that lecture at	the first, see	cond and third study progr	ram		
				and are mentors on t	he doctoral t	thesis			
1.	Name (Fi	rst, L	ast)	Emilija Celakoska					
2.	Date of b	irth		13.11.1975					
3.	Scientific	degre	ee / Title	Ph.D					
4.	Title of th	ne scie	entific degree	Ph.D. in Mathematical S	Sciences				
5.	Year and	instit	ution of the	Education	Year	Institution			
	scientific	degre	ee	Ph.D	2010	Faculty of Natural			
						Sciences and			
						Mathematics - Skopje	;		
				MSc	2006	Faculty of Natural			
						Sciences and			
				-		Mathematics - Skopje	;		
				BSc	1999	Faculty of Natural			
						Sciences and			
						Mathematics - Skopje	;		
6.	Area, fiel	d and	particular	Area	Field	Specialty			
	specialty	of ma	ster of science	Mathematical Sciences	Mathemati	cs Differential Geometry	/		
-	degree	1 1	<u> </u>	•	<b>T</b> ' 11				
7.	Area, fiel	d and	area of doctoral	Area	Field	Specialty			
	degree			Mathematical Sciences	Mathemati	cs Differential Geometry	/		
8.	If employ	ed, st	ate the institution	Institution		Title and area			
	and area i	sile w	ich is named	Faculty of Mechanical H	Engineering	Associate Professor,			
		II WII	ien is nameu	-Skopje		Mathematics			
9.	List of co	urses	that the teacher is le	cturing separately for first	t, second and	third cycle			
	9.1. List of courses that the teac			her is lecturing in the first	t cycle				
	N	lo.	Course		Study progra	am/institution			
	1	•	Mathematics in 3D		IND				
	2		Structured program	nming	MHT				
	3		Basics of program	ning	IND, TML,	EE, MPI, TI, HEI			
	4	. –	Mathematical analy	ysis	MHT, HEI,	EE, TI, AUS			

	9.2.	List of	f courses that the teacher	courses that the teacher is lecturing in the second cycle						
		No.	Course		Study program/in	stitution				
		1.	Geometric Transforma	ations and	MSPDTP					
			Deformations in 3D							
	9.3.	List of	f courses that the teacher	is lecturing in the thi	ird cycle					
		No.	Course		Study program/in	stitution				
		1.	Nonholonomic geome	try in mechanical	Mechanical engin	eering/Faculty of				
			systems	•	Mechanical Engineering					
10.	Selecte	d work	in the past five years		·					
	10.1.	Releva	ant scientific printed pap	er (up to 5)						
		No.	Author	Title		Publisher/year				
		1.	Emilija Celakoska,	On Complex Homo	geneous Space of	Bulgarian Academy of				
			Elena Hadzieva,	Vectors with Const	raints	Sciences/ Journal of				
			Vesna Celakoska –			Geometry and Symmetry				
			Jordanova			in Physics, Vol. 44, 2017,				
						1 – 11. (SCOPUS				
						CiteScore 2017, 0.58)				
		2.	Emilija Celakoska,	SO(3,C) Representa	ation and Action	RGN Publications/				
			Vesna Celakoska –	on a Homogeneous	Space in $\mathbb{C}^3$	Communications in				
			Jordanova, Dushan	C	1	Mathematics and				
			Chakmakov			Applications, 9(4), 2018,				
						671-676. (Web of				
						Science, ESCI)				
		3.	Emilija Celakoska,	Coverings by n-Cul	bes and the	Academia Scientiarum				
			Kostadin Trenčevski	Gauss-Bonnet The	orem	Fennica/ Annales				
						Academiae Scientiarum				
						Fennicae Mathematica				
						Vol 43, 2018, 1063–1072,				
						(IF 0,941 Web of Science				
				~		2018)				
		4.	Emilija Celakoska,	Conditions on nonlinearity of		Springer/ General				
			Ana M. Lazarevska	oscillatory equation	is inducing the	Relativity and				
				periapsidal precession		Gravitation, Vol 51 (5),				
						2019, 67: 1-17. (IF 1,721				
		5	Tuan aavalri Vaata din	Comular Equations	of Mation for a	Flagging (Appala of				
		5.	Trencevski Kostadin,	Complex Equations	S OI MOtion for a	Elsevier/ Annals of Device Vol. 205, 2018				
			Celakoska Emilija	Body under Gravita	utonal influence	Physics Vol. 395, 2018,				
				time Bundle with the	ameter Space-	13-23, (IF 2,403 Web 01 Science 2018)				
				Group $SO(3, C)$	ie Suluciulai	Science 2018)				
	10.2	Partic	ination in scientific notic	and international	projects (up to 5)					
	10.2.	No	Author	Title		Publisher/vear				
		1	Dushan Chakmakov	Combining and ont	imizing	Ministry of education and				
		1.	PhD	classifiers for natter	n recognition	science 2003 - 2006				
				applications	in recognition	serence, 2003 2000				
		2	Kostadin	Differential-geomet	tric and	Ministry of education and				
		2.	Trenchevski PhD	topological problem	ns and their	science 2006-2009				
				application	is and then	serence, 2000 2009				
		3	Nikola Tuneski PhD	Theory of univalent	functions and	Ministry of education and				
		5.	T (Inoita T anositi, T ind	applications		science and TUBITAK-				
				appireations		Turkey. 2006 - 2008				
		4.	Zivorad Tomovski, Linear and No		ar Fractional	Bilateral project				
			PhD	Models		Macedonia - Austria.				
						2011-2013				
		5.	Emilija Celakoska.	Construction of a m	nodel for	UKIM, 2017/2018				
			PhD	extracting relevant	information from	,				
				real nonlinear probl	ems					
			•			·				

	10.3.	Printee	d books in the last five y	ears (up to	5)				
		No.	Author	Title			Publisher/yea	r	
		1.	N.Tuneski,	Introduc	tion to MATLAB		Faculty of Me	echanical	
			E. Celakoska				Engineering -	-Skopje,	
							2010		
	10.4.	Printee	d professional papers in t	the last 5	years (up to 5)				
		No.	Author	Title			Publisher/year		
		1.	Celakoska	Lambert	function – graph,		UKIM - PMF	/2017,	
			Emilija	calculati	ons and applications		Mathematical	Omnibus 1,	
							pp.35-45		
		2.	Celakoska	On the n	ormal and abnormal		UKIM-PMF/2	2018,	
			Emilija	numbers	numbers			Omnibus 3,	
							pp.43-54		
11.	Superv	vision (n	nentorship) of undergrad	uate, mas	ter and doctoral studies	studen	ts		
	11.1.	Underg	ergraduate /						
	11.2.	Master			/				
	11.3.	Doctor	al		/				
12.	For me	ntors of	doctoral thesis, selected	work for	the last four / five year	S			
	12.1.	Proof	of printed scientific pape	ers in inter	national scientific journ	nals or i	international pu	iblications	
		in the	related field (up to 6) in	the past fi	ve years				
		No.	Author		Title		Publisher/yea	r	
		1.							
	12.2.	Proof	of at least two printed sc	ientific pa	pers in international sc	ientific	journals that h	ave impact	
		factor	in the related field in the	past five	years				
		No.	Author		Title		Publisher/yea	r	
		1.							
	12.3.	Proof	of at least three internation	onal meet	ings' participation in th	e past f	our years		
		No.	Author	Title		Intern	ational	year	
						meetin	ng/conference		
		1.							

Add	. 4	Informa	nation about the teachers that lecture at the first, second and third study program and are mentors on the doctoral thesis						
1.	Name (Fir	rst, Last)	Bojan Prangoski						
2.	Date of bi	rth	29.07.1984						
3.	Scientific Title	degree /	Ph.D.						
4.	Title of the scientific of	e degree	Ph.D. in Theoreti	Ph.D. in Theoretical Mathematics					
5.	Year and i	institution	Education	Year	Institution				
	of the scie degree	entific	B.S. in Mathematics	2007	Faculty of Science, University Ss. Cyril and Methodius, Skopje				
			M.Sc. in Theoretical Mathematics	2010	Faculty of Science, University Ss. Cyril and Methodius, Skopje				
			Ph.D. in Theoretical Mathematics	2013	Faculty of Science, University of Novi Sad, Novi Sad, Serbia				
6.	Area, field	l and	Area	Field	Specialty				
	particular specialty of master of science degree		Theoretical Mathematics	Functional Analysis	Theory of distributions				
7.	Area, field	l and area	Area	Field	Specialty				
	of doctora	l degree	Theoretical Mathematics	Functional Analysis	Ultra distributions, Pseudo differential operators				
8.	If employe	ed, state	Institution		Title and area				

	the ins	titution		Facul	ty of Mecl	hanical	Associate professor		
	where	he/she	works	Engir	leering,		_		
	and the	e title a	nd	Dept.	of Mather	matics and			
	area in	which	is	Infor	natics, Un	iversity "Ss.			
	named			Cyril	and Methe	odius"			
9.	List of	course	s that th	e teach	er is lectu	ring separately	for first, second and third	d cycle	
	9.1.	List o	f course	es that	the teacher	r is lecturing ir	the first cycle		
		No.	Cours	se		Study progra	m/institution		
		1.							
	9.2.	List o	f course	es that	the teacher	r is lecturing ir	the second cycle		
		No.	Cours	se					
		1.							
	9.3.	List o	f course	es that	the teacher	r is lecturing ir	the third cycle		
		No.	Cours	se					
		1.							
10.	Selecte	d work	in the p	oast fiv	e years				
	10.1.	Relev	ant scie	ntific p	orinted pap	per (up to 5)			
		No.	Author	•	Title		Publisher/year		
	1. S.Pilipovic,		On th	e convolution	Monatshefte fur Mathe	matik, <b>173</b> 1 (2014), 83-			
		B.Prangoski		of Ro	umieu	105			
					ultrad	istributions			
					throug	gh the <b>ε</b>			
				tensor	r product				
	2. B.Prangoski			Lapla	aplace transform Filomat, <b>27</b> 5 (2013), 747-760				
				in spa	n spaces of				
					ultrad	istributions			
		3.	S. Pilip	povic, l	3. Anti-	Wick and	J. Math. Pures Appl., o	nline April 2014,	
			Prange	oski	Weyl	quantization	http://dx.doi.org/10.10	16/j.matpur.2014.04.011	
					on ult	radistribution			
	10.0		• ,•		space	<u>s</u>			
	10.2.	Partic	apation	in scie		onal and interr	Debilisher (up to 5)		
		1NO.	Author	[	Title		Publisher/year		
	10.2	1. Drinte	dhoola	in the	last five y	(up to 5)			
	10.5.	No	Author	<u>s in the</u>	Titlo	ears (up to 5)	Dublisher/year		
		1	Autio		The		r ublishei/yeai		
	10.4	1. Drinte	d profo	ccional	papara in	the last 5 year	(up to 5)		
	10.4.	No	Author		Title	the last 5 year	(up to 5)		
		1	Autio		1100				
11	Super	rision (1	mentora	hip) of	undergrag	lugte master o	nd doctoral studies studer	ite	
11.	11 1	Under	oraduat	e P		idate, master a			
	11.1.	Maste	r						
	11.2.	Docto	ral						
12	For me	ntore of	f doctor	al thee	is selected	work for the	ast four/five vears		
12.	12.1	Proof	of print	ted scie	entific nan	ers in internati	onal scientific journals or	international publications in	
	12.1.	the re	lated fie	eld (iin	to 6) in th	e past five vea	rs	momunional publications III	
		No	Autho	or	Title	- past 11.0 you	Publisher/vear		
		1.	- Ioun				- dononon your		
	12.2.	Proof	of at le	ast two	printed so	cientific papers	in international scientific	iournals that have impact	
		factor	in the 1	elated	field in the	e past five year	:S	J	
		No.	Autho	or	Title		Publisher/year		
		1.							
	12.3.	Proof	of at le	ast thre	e internati	ional meetings	' participation in the past	four years	
		No.	Autho	or	Title		International	year	
							meeting/conference		
		1.							

Add. 4		]	Information about th	e teachers tha	at lecture at the	first, seco	nd and third study program	
			<b>~</b> \	and are m	entors on the d	loctoral th	esis	
1.	Name (I	first,	Last)	Igor Shesho				
2.	Date of	birth	(m: 1	18.07.1982				
3.	Scientifi	$\frac{1c}{1}$ de	gree / Title	Ph.D.	. 10.			
4.	Title of	the s	cientific degree	Ph.D. in Tech	inical Sciences	T (') ('		
э.	Year and	d ins	titution of the	Education	Year	n		
	scientifi	c ueş	giee	PhD in Tashulasi	2015		copje Macedonia	
				Sciences Faculty			f Mechanical Engineering	
				MSo	MSc 2009 LIKIM Skopie Macedo			
				Technical	2009	Eaculty o	f Mechanical Engineering	
				Sciences		1 acuity 0	i Wieenamear Engineering	
				BSc	2006	UKIM Sk	conie Macedonia	
				Technical	2000	Faculty o	f Mechanical Engineering	
				Sciences –		1 40 410 5 3		
				Mechanical				
				eng.				
6.	Area, fie	eld a	nd particular	Area	Field	Specialty		
	specialt	y of 1	master of science	Mechanical	Energetic	Energy et	fficiency	
	degree			engineering				
7.	Area, field and area of doctoral degree			Area	Field	Specialty		
	degree			Mechanical	Renewable	Solar ene	rgy	
				engineering	energy			
8.	If employed, state the institution			Institution			Title and area	
	where h	e/she	e works and the title	Faculty of M	echanical Engin	eering	Assistant Professor /	
	and area	ı in v	which is named	Skopje, Univ	ersity Ss. Cyril a	and	mechanical engineering-	
				Methodius in	Skopje		thermal engineering	
9.	List of c	cours	es that the teacher is l	ecturing separa	ately for first, se	cond and th	nird cycle	
	9.1.	List	of courses that the tea	cher is lecturin	g in the first cyc	ele		
		No.	Course					
		1.	Renewable energy	sources	TE(EE)			
		2.	Thermal machince	s and devices	HPE			
		3.	Computational the	rmal	TE			
	0.0	<b>.</b>	engineering			1		
	9.2.	List	of courses that the tea	cher is lecturin	g in the second	cycle		
		NO.	Course	1	Study program	/institution		
		1.	Non conventional j	power plants-	11			
		<u>,</u>	Energy officiency	in thormal	TI/FF			
		2.	systems	in therma				
		3	Renewable energy	sources-	TI/EE			
			advanced	5001005				
		4.	Green Lean		IIM			
		5.	Energy economics					
		6.	Process of energy of	conversion				
	9.3.	List	of courses that the tea	cher is lecturin	g in the third cy	cle		
		No.	Course		Study program	/institution		
		1.						
		2.						
10.	Selected	wor	k in the past five year	S				
	10.1.	Rele	vant scientific printed	paper (up to 5	)			
		No.	Author	Title		Publisher	/year	
		1.	D. Tashevski,	Analysis of P	arameters	Internatio	onal Journal of Mechanical	

	91							
			R. Filkoski D. Dimitro I. Shesho	, vski,	Affecting the Efficiency Optimization of Binary SOFC Co-generation Power Plants.	Engineering and Technology (IJMET), (ISSN 0976–6359 Online), Volume 5, Issue 10, pp. 180-190, India, 2014 (JIF 7,5377)		
		2.	D. Tashevs Filkoski, I. Shesho	ki, R.	Optimization of Binary Cogenerative Thermal Power Plants with Solid Oxide Fuel Cells on Natural Gas.	International Journal of Mechanical Engineering and Technology (IJMET), (ISSN 0976–6359 Online), Volume 5, Issue 1, pp. 122-131, India, 2014 (JIF 5,77)		
		3.	I. Shesho, D. Tashevs	ki:	Simulation Application for Optimization of Solar Collector Array.	International Journal of Engineering Research and Applications (IJERA), Volume 4, Issue 1, pp. 10-19, (ISSN: 2248-9622), India, 2014 (JIF 1,69)		
		4.	I.Shesho, R.Filkoski, D.Tashevsł	ci	Techno-economic and environmental optimization of heat supply systems in urban areas	Thermal Science, Vol. 22, Suppl. 5, pp. S1635-S1647, 2018		
		5.	I.Shesho, Z.Markov, D.Tashevsl D.Dimitrov	ci vski	Possibilities for improving energy efficiency in industry sector utilizing low temperature waste heat recovery	Journal of Environmental Protection and Ecology, Vol 19, No 3, 1431–1441, 2018		
	10.2.	Partic	cipation in s	cientific	national and international proje	ects (up to 5)		
		No.	Author		Title	Publisher/year		
		1.						
	10.3.	Printe	ed books in t	he last fi	ve years (up to 5)			
		No.	Author		Title	Publisher/year		
		1.						
		2.						
		3.						
	10.4.	Printe	ed professior	nal paper	s in the last 5 years (up to 5)			
		No.	Author		Title	Publisher/year		
		1.	D. Tashevs R. Filkoski S.Armensk D. Dimitro I. Shesho:	ki, , i vski,	Study for defining techno- economic optimal and ecological sustainable structure for heating and implementation of centralized supply with domestic heat water for the urban area in Skopje	MFS Skopje / 2017		
		2.	D. Tashevs R. Filkoski I. Shesho:	ki, ,	Study for Mmodeling and calculation of heat transfer between heated and unheated residential apartment buildings	MFS Skopje / 2018		
		3.	S.Armenski D. Tashevski, R. Filkoski, Z.Markov I. Shesho:		Revision of the study "Analysis of possibilities for supply of TPP Oslomej with natural gas"	MFS Skopje / 2017		
	4.							
11	Super	J. vision (	(mentorship)	of under	oraduate master and doctoral	studies students		
11.	11 1	Unde	rgraduate	5 mento	orship of undergraduate student	ts		
	11.2	Maste	er	4 in pro	ogress			
		Master 4 in progress						

	11.3.	Doctor	ral								
12.	For me	ntors of	f doctoral th	esis, selected work for t	he last four / fiv	ve years					
	12.1.	Proof	of printed so	cientific papers in interr	national scientifi	c journals or international p	oublications in				
		the rel	ated field (u	p to 6) in the past five	years						
		No.	Author	Title		Publisher/year					
		1.									
	2.										
		3.									
		4.									
		5.									
		6.									
	12.2.	Proof of at least two printed scientific papers in international scientific journals that have impact									
		factor	in the relate	d field in the past five	/ears						
		No.	Author	Title		Publisher/year					
		1.									
		2.									
		3.									
		4.									
		5.									
	12.3.	Proof	of at least th	ree international meeting	ngs' participatio	n in the past four years					
		No.	Author	Title		International	year				
						meeting/conference					
		1.									
		2.									
		3.									
		4.									
	-	5									

Add. 4		Information about the teachers that lecture at the first, second and third study program								
and are men		tors on the doctoral thesis								
1.	1. Name (First, Last)		Viktor Iliev							
2.	Date of bi	rth	02.04.1979							
3.	Scientific	degree / Title	Ph.D.							
4.	Title of th	e scientific	Ph.D. in Technical Sciences							
	degree									
5.	Year and	institution of	Education	Year		Institution				
	the scienti	fic degree	Ph.D in Mechanical	2015		Faculty of Mechanical				
			Engineering			engineering - Skopje				
			M. Sc. in	2011		Faculty of Mechanical				
			Mechanical			engineering - Skopje				
			Engineering							
			B. Sc. in	2002		Faculty of Mechanical				
			Mechanical			engineering - Skopje				
			Engineering							
6.	Area, field and		Area	Field		Specialty				
	particular specialty of master of science		Technical-	Mechanical		Fluid mechanic and fluid flow				
			technological			systems (21420)				
	degree		sciences							
7.	Area, field and area of		Area	Field		Specialty				
	doctoral degree		Technical-	Mechanical		Fluid mechanic and fluid flow				
			technological			systems (21420)				
			sciences							
8.	If employ	ed, state the	Institution		Title and area	1				

								9			
	institut	ion wh	ere	University	University of Ss Cv		Assistant Pro	fessor, Fluid mechanics and			
	he/she	works	and the Methodius. faculty			of	fluid flow sys	stems (21420)			
	title an	d area	in which	Mechanical	engine	ering					
	is name	ed									
9.	List of	course	s that the te	eacher is lectu	uring se	parately for first	st, second and	third cycle			
	9.1. List of courses that the teacher is lecturing in the first cycle										
	No. Course					Study progra	m/institution				
	1. Energy pipeline system			ms	HPE (Hydrau	ilic power engi	ineering) / FME				
	2. Water supply and irrig			ation	HPE / FME	1 0	6/				
			systems	11.5 0							
		3.	Unsteady	y flows in HE	Р	P HPE / FME					
	9.2.	List c	of courses the	hat the teache	r is lect	is lecturing in the second cycle					
		No.	Course			Study program/institution					
		1.	Measure	ments, monit	oring	AFI / FME					
		and data acquisition			C						
		2. Selected chapters of F			luid	EE / FME					
			Mechani	cs							
		3.	Experime	ental enginee	ring	EE / FME					
		4.	Control of	of HEP		AFI / FME					
	9.3.	List c	of courses the	hat the teache	er is lect	uring in the thi	rd cycle				
		No.	Course			Study progra	m/institution				
		1.									
		2.									
10.	Selecte	d work	in the past	five years							
	10.1.	Relev	ant scientif	fic printed pa	per (up	to 5)					
		No.	Author		Title			Publisher/year			
		1.	Viktor Ilie	ev,	Transi	ent Analysis of	t a Reversible	International Conference,			
			Aleksanda Zaran Ma	ar Gajic,	Hydropower Plant			Energy and Ecology Industry			
			Loran Ma	rkov,				EEI2018, October 2018, Palarada			
		2	II Korodž	ió V Iliov	Eluid Structure Interaction Effects			International Conference			
		2. U. Karadzic, V. Illev,			in Small-Scale Pipeline Apparatus			Energy and Ecology Industry			
			n. Dergun	it i	in Sinan-Scale I ipenne / ipparatus			EEI2018			
								Belgrade, October 2018.			
		3 Z Kostiki C			Contro	ol system at the	e run-of-river	XXXIV savetovanju			
			V.Stojkov	ski, V.Iliev,	SHPP	by inlet turbin	e pressure vs	ENERGETIKA 2018,			
		F.Stojkovski elev			elevati	on of the wate	r at the intake	Zlatibor, Mart 2018.			
		4. Zoran Markov, Influe			ntial Paramet	ters in the	18 <sup>th</sup> Symposium on Thermal				
		Viktor Iliev, Predrag Investi			stigation of Pressure Science and Engineering of						
		Popovski Pulsation				ion in a F	Pump-Turbine	Serbia,			
		Draft Tu				<u>Fube</u>		October 2017			
		5. Viktor Iliev, Zoran Analys			sis of Dynamic	Energetika 2016, Savez					
			Markov, F	Predrag	Revers	versible Francis Turbine energeticara / March Zlati					
		Popovski During			ng the Transient Operational 2016.						
	10.2	Regimes						5			
	10.2.	10.2. Participation in scientific national and			d international	projects (up to	) )) Dublicher/waar				
		No. Author Title			tural analysis and synthesis		National project				
		1. 11aJKOVSKI L., Struc Valentino S. Viktor of sy			of syst	ems for contro	la synthesis	LIKIM 2015-2016			
		I et al			autom	mation for small HPP					
					actori for sindli						
		3.									
		4.									
		5.									
	10.3.	. Printed books in the last five years (up to 5)									
		No.AuthorTitlePublisher/year						Publisher/year			

		1.									
	10.4.	Printed professional papers in the last 5 years (up to 5)									
	No. Author				Title		Publisher/year				
	1. Viktor Iliev,		Viktor Iliev,		Project for recor	nstruction and	AD ESM / FME				
		Mihail Digalovski			revitalization of	measurement and	October 2018				
					control equipme	ents in HPV					
		2.	Viktor Iliev et al.		Control measure	ements in cooling	ArcelorMittal (CR)	M) /			
					tower		CIRKO 2016				
		3.	Zvonimir Kostikj,		Feasibility study	for increasing					
			Viktor Iliev		the electricity p	oduction in small					
					HPP Berovo						
		4.	Viktor Iliev	'	Technical docur	nentation for	FME / September 2016				
					construction of t	the open wind					
					tunnel in laborat	tory for fluid					
					mechanics and f	nydraulic					
		5	Zuenimin Vestilii		machines	. for an anon	ID V amountal a Nati	- time /			
		э.	Zvonimir Kostikj,	1-1	feasibility study	for energy	CIPKO 2016				
			Viktor Iliov	кі,	supply system I	ukar Nagotino	CIKKO 2010				
11	Supary	ision (	viktor lilev	rarad	supply system L	doctoral studios st	dents				
11.	11 1	Under	Son (memorship) of undergraduate, master and doctoral studies students       Undergraduate       23								
	11.1.	Maste	r								
	11.2.	Doctoral									
12.	For me	entors of doctoral thesis selected work for the last four/five years									
	12.1.	Proof of printed scientific papers in international scientific journals or international publications in									
		the related field (up to 6) in the past five years									
		No.	Author		Title		Publisher/year				
		1.									
	12.2.	Proof of at least two printed scientific papers in international scientific journals that have impact						ve impact			
		factor in the related field in the past five years									
		No.	Author		Title		Publisher/year				
		1.									
	12.3.	Proof of at least three international meetings' participation in the past four years									
		No.	Author	Title	2	International meet	ing/conference	Year			
		1.									

# **18.** Statement by the teaching staff members on providing consent to participate in the instruction in the frames of certain courses of the study programme

The Statements submitted by the teaching staff members with which they confirm that they agree to participate in teaching of certain courses from the study programme are provided in Annex 4, near the end of the Elaborate.

# **19.** Approval from the higher education institution for the participation of the teaching staff member in the realisation of the study programme

The Approvals from the higher education institution for the participation in the realisation of the study programme of the teaching staff members who are not employed at the Faculty of Mechanical Engineering in Skopje are provided as <u>Annex 5</u>, near the end of the Elaborate.

# **20.** Information on the number of students to be enrolled in the first year of the study programme

Regarding the assessment of the spacial capabilities, the equipment available, and teaching staff potential for the **Sustainable Energy and Environment** study programme, the maximum

number of students to enroll yearly is planned to be 30.

### 21. Information on the provided compulsory and additional literature

The foreseen compulsory and additional literature (listed in the course programmes – Annex 3) is provided by the course professors, and one part of the literature is at disposal at the Library of the Faculty of Mechanical Engineering in Skopje. Professional literature translated and distributed by the Government of the Republic of N. Macedonia shall also be used for course programmes where stated.

### 22. Information on the web-site

All the information regarding the study programmes of the Faculty of Mechanical Engineering – Skopje are publicly available on the web-site of Faculty of Mechanical Engineering – Skopje: <u>www.mf.edu.mk</u>.

### 23. Professional or scientific title awarded to students upon completion of the study programme

A student who shall successfully complete the university studies of second cycle, one-year studies, **SUSTAINABLE ENERGY AND ENVIRONMENT** study programme, shall be awarded the title:

## In Macedonian: Магистер по машинство – *Одржлива енері ей*ика и еколоі ија

## In English: Master of science in mechanical engineering - *Sustainable Energy and Environment*

The students shall receive Diploma and Diploma Supplement pursuant to the Rulebook on the Content and the Form of the Diploma, Guidelines for Preparation of the Diploma Supplement and Other Public Documents ("Official Gazette of the Republic of Macedonia" No. 102/2018).

Data on the name of the study programme and the scientific and research area, field, and branch shall be stated in the Diploma and in the Diploma Supplement.

## 24. Activities and mechanisms for developing and maintaining teaching quality

### 24.1. Study programme teaching methods

The study programmes shall be realized as full-time studies with the following forms of teaching: lectures, auditory, laboratory, and computer exercises and seminars. Regular classes shall be organised for the courses with 5 and more than 5 registered students. In case the number of students is lower than 5, mentoring will be organised.

The student load shall also be realized through special forms of activities, as individual work on seminal papers and projects intended for studying practical cases from the relevant fields of research to the studies, teamwork, research work, self-study and participation in workshops. Particular attention shall be paid to individual work with students in the form of mentoring and consulting.

The scope and organisation of the studies shall be made pursuant to Article 153 of the Law on Higher Education of the Republic of N. Macedonia and Article 23 of the Rulebook on the first and second cycle of studies of Ss. Cyril and Methodius University in Skopje in accordance with the ECTS methodology (the Rulebook on the Requirements, Criteria and Regulations for Enrolment and Studying at the First and Second Cycle of University Studies, "University Herald" No. 254/2013), i.e. the total workload of the students is expressed through the volume of 60 credits per year, with 30 hours of work engagement per credit, which is equal to 1,800 hours of annual workload. The number of hours of annual workload allocated to the number of weeks in both semesters, a total of 30 weeks, expresses the total weekly load of students (instruction and activities of special types).

## 24.2. Methods of evaluation

Evaluation of the acquired knowledge shall be performed by continuous assessment or by final examination. In the course programmes enclosed in item 13 of this document, for each course the manner of evaluation of knowledge and the ratio of evaluation of the continuous assessment activities is determined individually, i.e. the points the student acquires by realizing individual activities defined in the course programme are defined.

The final grade for each of the courses of this study programme shall be formed on the basis of the continuous or final assessment of the results achieved by the student. The final grade shall be formed on the basis of the total number of points from the continuous or final assessment the student has won, with the maximum number of possible points won being 100. The evaluation shall be performed in accordance with Article 35 of the Rulebook on the first and second cycle of studies of Ss. Cyril and Methodius University in Skopje (the Rulebook on the Requirements, Criteria and Regulations for Enrolment and Studying at the First and Second Cycle of University Studies , "University Herald" No. 254/2013), with application of the numerical assessment system and following the equivalences with the alphabetical grading system of the ECTS.

The student masters the study programme by passing the exams, thus earning a certain number of ECTS credits, in accordance with the structure of the study programme.

# 24.3. Activities and mechanisms for developing and maintaining the quality of the study programme

In order to develop and maintain the quality and the quality control, methods of continuous evaluation, self-evaluation and system for assessing the quality of the teaching staff will be implemented in the frames of the study programmes, in accordance with the provisions of the Law on Higher Education of the Republic of N. Macedonia and Articles 50 to 57, as well as in line with the already established mechanisms for evaluation within the Ss. Cyril and Methodius University in Skopje.

Quality assurance and quality control will be implemented in accordance with the activities and mechanisms that are implemented for all study programmes and apply to all participants in the teaching process at the Faculty of Mechanical Engineering in Skopje. The stated activities and mechanisms of self-evaluation refer to:

- Development of contents for the courses,
- Realization of the teaching process,
- Evaluation of students,
- Preparation of the final paper,
- Evaluation of the quality of teaching process by students using surveys at the end of each semester for each course,

• Evaluation of the quality of the study programme by the students on the occasion of diploma awarding and other procedures related to the resources and teaching process logistics.

Evaluation of the quality of the courses and the study programmes performed by the students shall be made permanently and shall be taken into consideration in evaluation and development of all the study programmes.

Monitoring the students' success and the realization of the programme by the Educational and Scientific Council of the Faculty of Mechanical Engineering shall be applied as activities for development and maintenance of quality and quality control of the study programme. The Council will conduct an internal evaluation of the content of the study programme in the direction of improvement and development in accordance with the contemporary trends in the field.

## 24a. Results of the performed self-evaluation according to the Guidelines on the Common Basis for Evaluation and Evaluation Procedures of Universities adopted by the Agency for Evaluation of Higher Education in the Republic of Macedonia and the Inter-University Conference of the Republic of Macedonia (Skopje-Bitola, September 2002).

The results have been published in the Self-evaluation Report of the Faculty of Mechanical Engineering - Skopje for the reporting period 2013-2016, No. 02-1991/2 of November 27, 2017, in accordance with the Guidelines for self-evaluation and assurance and evaluation of the quality of the units of the University, passed by the University Senate (9th Session/April 30, 2013):

https://www.mf.ukim.edu.mk/mk/content/резултати-од-анкетисамоевалуација

# ANNEX 1

Decision for adopting the study program by the Academic Council of Scientific unit (Faculty of Mechanical engineering – Skopje) Машински факултет Број 02-1776/1 26.09.2019 год. Скопје

Врз основа на член 110 став 1 точка 6 и член 145 став 1 од Законот за високото образование ("Службен весник на РМ" број 82/2018), како и член 2, 3 и 11 став 4 од Правилникот за донесување студиски програми (Универзитетски гласник број 140/2009), Наставно-научниот совет на Машинскиот факултет во Скопје, на 38-та редовна седница, одржана на 26 септември 2019 година, ја донесе следнава

### ОДЛУКА

# за измена и дополнување на студиска програма на втор циклус студии на Машински факултет во Скопје

1. Се изменува и дополнува студиската програма на англиски јазик Sustainable Energy and Environment (SEE – OEE Одржлива енергетика и екологија) на втор циклус студии на Машинскиот факултет во Скопје во состав на Универзитетот "Св. Кирил и Методиј" во Скопје, за реакредитација.

2. Студиската програма е од видот втор циклус на академски студии (постдипломски студии) во траење од една години (2 семестри), се организира како редовни студии за стекнување 60 ЕКТС кредити по моделот 4+1 и научен назив Master of Science (MSc) на англиски јазик или магистер на македонски јазик.

3. Проектот/Елаборатот за измени и дополнувања на студиската програма усвоен од Наставно-научниот совет и оваа одлука се упатуваат на Универзитетот "Св. Кирил и Методиј" во Скопје на натамошна постапка за усвојување.

4. Студиите по изменетата и дополнета студиска програма ќе отпочнат од учебната 2020/2021 година.

5. Составен дел на оваа одлука е Проектот/Елаборатот за измени и дополнувања на студиската програма.

Одлуката да се достави до: Универзитетот, наставно-научен совет, продекан за МСНР, ОАЕВО, за елаборатот и архивата на Факултетот.

Универзитет "Св. Кирил и Методиј" во Скопје <sup>с</sup> Машински факултет - Скопје Декан Проф, д-р Дарко Данев

# ANNEX 2

Decision for adopting the study program from Rector's Office or the University Senate Council or the Council of scientific institution

A DECEMBER OF THE PARTY OF THE	Универ Ss. Cyril	зитет "Св. К l and Method <mark>Вепублик</mark>	Сирил и Мет lius Universit а. Северна	Одлука од УС Ознака: ОВ 5.5/13 Страна: 1 од 1		
	8 1	УННВЕРЗНТЕТ МАШИ	CKOT	J E	HJ CKONJE NTET	
Бр. 02- 1135/4 29.11.2019 годи Скопје	ина	Примено: Прилог:	04-12- <b>С</b> Орг.Един. 08	Број: 511	Вредност:	MAШИНСКИ ФАКУЛТЕТ · Скопје за ДА ГСА
					y	Датум: 04 Л2- ССТ

Врз основа на член 104 од Законот за високото образование, член 246 од Статутот на Универзитетот "Св. Кирил и Методиј" во Скопје, по предлог на Наставно-научниот совет на Машинскиот факултет, Универзитетскиот сенат на Универзитетот "Св. Кирил и Методиј" во Скопје, на 36. седница одржана на 29.11.2019 година, донесе

#### ОДЛУКА

за усвојување на Предлог-проект за повторна акредитација на студиската програма Sustanable energy and Environment, од втор циклус академски студии - едногодишни, на Машинскиот Факултет

### Член 1

Универзитетскиот сенат го усвојува Предлог-проектот за повторна акредитација на студиската програма Sustanable energy and Environment, од втор циклус академски студии - едногодишни, на Машинскиот Факултет.

#### Член 2

Универзитетскиот сенат го упатува проектот од член 1 на оваа Одлука до Одборот за акредитација и евалуација на високото образование на натамошна постапка за акредитација, односно повторна акредитација. Проектот, во печатена и во електронска форма до Одборот за акредитација и евалуација на високото образование се доставува од страна на единицата на Универзитетот - предлагач и организатор на студиската програма.

#### Член 3

Оваа Одлука стапува во сила со нејзиното донесување и ќе се објави во Универзишешски гласник.



Доставено до:

- Машинскиот факултет

- Одборот за акредитација и евалуација на високото образование

hh

# ANNEX 3

Teachers statement of consent for participation in teaching specific subjects of the study program

Република Ссверна Македонија УНИВЕРЗИТЕТ 'СВ. КИРИЛ И МЕТОДИЈ'-СКОПЈЕ МАШИНСКИ ФАКУЛТЕТ Бр. <u>08 - 1775 / 1</u> <u>2 6 -09- 2019</u> 20 \_ год. с к о п ј е

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Зоран Марков</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет -Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Modeling and Simulations of Energy Systems
- 2. Advanced Course in Energy Transformation
- 3. Fluid mechanics in environmental engineering
- 4. Water and waste water treatment
- 5. Design of fluid conveying and hydro power system

Своерачен потпис

Проф. д-р Зоран Марков

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

### ИЗЈАВА

Од <u>Атанаско Тунески</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Modeling and Simulations of Energy Systems
- 2. Advanced Course in Energy Transformation
- 3. Environmental systems analysis

.

Своерачен потпис

Република Северна Македонија УНИВСРЗИТСТ "СВ. КИРИЛ И МСТОДИЈ"-СКОПЈС МАШИНСКИ ФАКУЛТЕТ Бр. 08 - 1775 (2-

Проф. д-р Атанаско Тунески

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

# ИЗJABÁ

Од <u>Атанас Кочов</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. An introduction to eco-innovations

Своерачен потпис

Проф. д-р Атанас Кочов

Република Северна Македонија УНИВСРЗИТСТ 'СВ. КИРИЛ И МСТОДИЈ'-СКОПЈС МАШИНСКИ ФАКУЛТЕТ Бр.08-1445 4 26-09-2019 20 год. С К О П Ј Е

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

### ИЗЈАВА

Од <u>Валентино Стојковски</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Modeling and Simulations of Energy Systems
- 2. Advanced Course in Energy Transformation
- 3. Fluid mechanics in environmental engineering
- 4. Environmental measurement methods and monitoring systems
- 5. Design of fluid conveying and hydro power system

Своерачен потпис

BC

Проф. д-р Валентино Стојковски

### Република Северна Македонија ?!!!!КЕРЗНТЕТ 'СВ. КНРНА Н МЕТОДНЈ'-СКОПЈЕ МАШИНСКИ ФАКУЛТЕТ Бр. <u>08 - 1775 (11)</u> <u>26 -09- 2019</u> 20 год. С К О П Ј Е

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

## ИЗЈАВА

Од <u>Лазе Трајковски</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Modeling and Simulations of Energy Systems

.

Своерачен потпис

Проф. д-р Лазе Трајковски

Република Северна Македонија УННВЕРЗНТЕТ "СВ. КНРНА И МЕТОДИЈ"-СКОПЈЕ МАШИНСКИ ФАКУЛТЕТ Бр. 08 - 177/19<u>26 -09-2019</u> 20 \_ год. С К О П Ј Е

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

### ИЗЈАВА

Од <u>Ристо Филкоски</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Modeling and Simulations of Energy Systems
- 2. Advanced Course in Energy Transformation
- 3. Advanced thermodynamics selected chapters
- 4. Clean fossil and alternative fuels energy

Своерачен потпис

OCKU

Проф. д-р Ристо Филкоски
Република Северна Македонија УКНВСРЗИТЕТ "СВ. КИРИЛ И МЕТОДИЈ"-СКОПЈС МАШИНСКИ ФАКУЛТЕТ Бр. 08-144-16 26-09-2019 20 год. С К О П Ј Е

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Доне Ташевски</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Modeling and Simulations of Energy Systems
- 2. Advanced Course in Energy Transformation
- 3. Modern Thermal Plants
- 4. Energy efficiency

Проф. д-р Доне Ташевски

Република Северна Македонија УННВЕРЗНТЕТ "СВ. КНРНА Н МЕТОДНЈ"-СКОПЈЕ МАШИНСКИ ФАКУЛТЕТ Бр. 08 – 17-75 / 5 \_\_\_\_\_\_ 26 -09- 2019 20 \_\_\_ год. с к о п ј е

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Ана Лазаревска</u>, во звање <u>вонреден професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Energy vs. sustainable development: Concepts and aspects

Вон. проф. д-р Ана Лазаревска



Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Виктор Илиев</u>, во звање <u>доцент</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Advanced Course in Energy Transformation

Своерачен потпис

Доц. д-р Виктор Илиев



Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

## ИЗЈАВА

Од <u>Емил Заев</u>, во звање <u>вонреден професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Modeling and Simulations of Energy Systems
- 2. Automation of environmental processes

ac

Вон. проф. д-р Емил Заев

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

## ИЗЈАВА

Од <u>Игор Шешо</u>, во звање <u>доцент</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Advanced Course in Energy Transformation
- 2. Experts in Teamwork
- 3. Non-conventional power plants

Своерачен потпис

Доц. д-р Игор Шешо

Република Северна Македонија УНИВ СРЗИТСТ "СВ. КИРИЛ И МСТОДИЈ"-СКОПЈС МАШИНСКИ ФАКУЛТЕТ Бр. <u>08 - 17-7-5/18</u> \_\_\_\_\_\_ 26 -09- 2019 20 \_\_\_ год. С к о п ј е\_\_\_ год.

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

### ИЗЈАВА

Од <u>Дарко Бабунски</u>, во звање <u>вонреден професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Modeling and Simulations of Energy Systems
- 2. Environmental measurement methods and monitoring systems
- 3. Automation of environmental processes

¥

Своерачен потпис

Вон. проф. д-р Дарко Бабунски

Република Северна Македонија УНИВСРЗИТСТ "СВ. КИРИЛ И МЕТОДИЈ"-СКОПЈС МАШИНСКИ ФАКУЛТЕТ Бр. 08 - (7-7-5/19 - 26-09-2019 - 20 - год.

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Даме Димитровски</u>, во звање <u>вонреден професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметите:

- 1. Modeling and Simulations of Energy Systems
- 2. Advanced Course in Energy Transformation
- 3. Experts in Teamwork
- 4. Transport and the environment
- 5. Eco-engines
- 6. Waste management

Вон. проф. д-р Даме Димитровски

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Ана Фрицханд</u>, во звање <u>вонреден професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Experts in Teamwork

Своерачен потпис

Вон. проф. д-р Ана Фрицханд

# Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Никола Тунески</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Selected Topics in Mathematics and Informatics

Своерачен потпис

Република Северна Македонија УННВСРЗНТСТ "СВ. ККРНА Н МСТОДНЈ"-СКОПЈС МАШИНСКИ ФАКУЛТЕТ Бр. 08- 1775/12 26-09-2019 20 год.

Проф. д-р Никола Тунески



Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

## ИЗЈА́ВА

Од <u>Душан Чакмаков</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Selected Topics in Mathematics and Informatics

Проф. д-р Душан Чакмаков

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Алекса Малчески</u>, во звање <u>редовен професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Selected Topics in Mathematics and Informatics

.

Своерачен потпис

Проф. д-р Алекса Малчески

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Емилија Целакоска</u>, во звање <u>вонреден професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Selected Topics in Mathematics and Informatics

Вон. проф. д-р Емилија Целакоска

Република Северна Македонија УШКЕРЗКТЕТ "СВ. ККРИЛ И МЕТОДИЈ"-СКОПЈЕ МАШИНСКИ ФАКУЛТЕТ Бр. 08 - 1775/10 \_\_\_\_\_\_С 6-09- 2019 20 \_\_ год. С К О П Ј Е

Врз основа на членот 2 од Правилникот за задолжителни компоненти кои треба да ги поседуваат студиските програми од првиот, вториот и третиот циклус студии ја давам следната

#### ИЗЈАВА

Од <u>Бојан Прангоски</u>, во звање <u>вонреден професор</u>, вработен/а на Машински факултет - Скопје при Универзитетот "Св. Кирил и Методиј" во Скопје.

ИЗЈАВУВАМ ДЕКА СУМ СОГЛАСЕН да учествувам во изведување на наставата на студиската програма <u>Sustainable Energy and Environment</u> на втор циклус студии при Машински факултет – Скопје на предметот:

1. Selected Topics in Mathematics and Informatics

Своерачен потпис

Вон. проф. д-р Бојан Прангоски

# ANNEX 4

Consent from the higher educational institution for teacher participation in the realization of the study program

durin H REALT	РЕПУБЛИКА Универзитет "Сп Филоз	БЛИКА СЕВЕРНА МАКЕДОНИЈА тет "Св. Кирил и Методиј" -Скопје Филозофски факудатетублика Северна УНИКЕРЗИТЕТ СК. КИРИА 1		a Makerookuta	
Број:	08-2596/16	МАШ	ИНСКИ СКОП	DAKY	ЛТЕТ
Датум СКОП	JE 08-11- <sup>r</sup> 2019	Применс Прилог:	р: <mark>18-11-2019</mark> Орг.Един.	Број:	Вредност:
			08	1848	10

Врз основа на член 110 и 179 од Законот за високо образование ("Сл. Весник на РМ бр.82/2018), и член 59 од Статутот на Филозофскиот факултет (Универзитетски гласник бр.463/19), Наставно-научниот совет на Филозофскиот факултетот во Скопје на XXV седница одржана на 6.XI 2019 година донесе

#### ОДЛУКА

за давање согласност за ангажирање на професори за учество во акредитација на студиски програми на други факултети и институти во рамките на УКИМ

#### Член 1

Се дава согласност за ангажирање во акредитација на студиски програми за проф. д-р Ана Фрицханд на Машински факултет во Скопје по предметот Experts in Teamwork на студиската програма Sustainable energy and environment на втор циклус студии, 6 ЕКТС.

#### Член 2

Условите, меѓусебните права и обврски кои произлегуваат од извршувањето на работата ќе се уредат со договор.

#### Член 3

Одлуката стапува во сила со денот на донесувањето, а ќе се применува во учебната 2019/2020 година.

#### Образложение

Согласно барањето на Машински факултет во Скопје со наш бр. 08-2596/1 од 4.10.2019 година, за добивање на согласност за ангажирање на професори за изготвување и акредитација на студиска програма по предметот Experts in Teamwork на студиската програма Sustainable energy and environment на втор циклус студии, 6 ЕКТС, како и Одговорот од Институтот за психологија бр. 08-2596/5 од 10.10.2019 год., Наставно-научниот совет на Филозофскиот факултет во Скопје, на својата XXV седница одржана на 6.XI 2019, донесе одлука како во диспозитивот на актот.

По еден примерок од одлуката да се достави на Машински факултет во Скопје, именуваната, институтот, Одделението за правни и општи работи и архивата на Факултетот.

**HEKAH** ирил и на Филозофскиот факултет Северна Проф. д-р Ратко Дуев

изработил: Ана Иванова

# ANNEX 5

Diploma supplement



# Faculty of Mechanical Engineering - Skopje

1. Information identifying the holder of the qualification				
1.1. Name				
1.2. Surname				
1.3. Date, place, and country of birth				
1.4. Unique Master Citizen Number				
2. Information identifying the qualification				
2.1. Date of issuance				
2.2. Name of qualification	Master of science in mechanical engineering - Sustainable Energy and Environment			
2.3. Name of study programme, main area, field, and branch of study	Sustainable Energy and Environment study programme, Scientifc area - Technical and technological sciences, Field - 214 Mechanical Engineering Branch – Mechanical Engineering, Energy, Environment			
2.4. Name and status of awarding institution	Ss. Cyril and Methodius University in Skopje – Faculty of Mechanical Engineering			
2.5. Name and status of higher education institution administering the studies (if different)				
2.6. Language of instruction	English			
3. Information on the level (cycle) of the qualification				
3.1. Type of qualification (academic/vocational studies)	Academic studies			
3.2. Level (cycle) of qualification	Second cycle of studies (graduate studies)			
3.3. Official length of programme: years and ECTS credits	2 semesters, 1 year, 60 credits			
3.4. Study programme enrollment requirements	Completed undergraduate studies, 240 credits			

4. Information on the contents and results gained				
4.1. Mode of study (full-time, part-time)	Full-time			
4.2. Programme requirements and results	Knowledge, skills, and competencies in the field of Mechanical Engineering with a specialty in the field of Energy and Environment			
4.3. Programme details (orientation, module, grades, ECTS credits) <sup>1</sup>	The Results Certificate containg the couses completed and credits won is attached.			
4.4. Evaluation scheme (grading scheme and criteria)	The number of points represents the overall workload of the student (lecture attendance, laboratory work, tests, seminal papers, examinations, individual tasks). For earning up to 50% of the total points, grade 5 is awarded, for earning from 51% to 64% of the total points grade 6 is awarded, for earning from 65% to 74% of the total points grade 7 is awarded, for earning from 75% to 84% of the total points grade 8 is awarded, for earning from 85% to 94% of the total points grade 9 is awarded, and for earning from 95% to 100% grade 10 is awarded. ( $10=A/A+$ , $9=A-/B+$ , $8=B-$ , $7=C$ , $6=D$ , $5=F$ )			
4.5. Grade point average (GPA)				
5. Data on the function of the qualification				
5.1. Access to further study	Third cycle of studies			
5.2. Professional status (if applicable)				
6. Additional information				
6.1. Additional information on the student				
6.2. Additional information on the higher education institution	Faculty of Mechanical Engineering – Skopje Address: Rugjer Boshkovikj no. 18, P.Box 464, 1000 Skopje Telephone: +389 2 3063 374 e-mail: mf@mf.edu.mk web-site: www.mf.edu.mk			
7. Certification of the supplement				
7.1. Date and place				
7.2. Name and signature	Professor Darko Danev, PhD Professor Nikola Jankulovski, PhD			
7.3. Capacity of the signee	Dean Rector			
7.4. Seal	Seal of the Unit Seal of the University			

<sup>&</sup>lt;sup>1</sup> The Appendix mentioned in 4.3 is the Results Certificate