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

ELABORAT

"LEAN MANAGEMENT"

"LEAN MEHAUMEHT"

Second cycle of <u>academic</u> studies One-year studies

PROPOSER INSTITUTION:

Faculty of Mechanical engineering in Skopje

Skopje, November, 2023

FOR <u>REACREDITATION</u> OF A STUDY PROGRAM

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10 . Data on the space provided for the realization of the Study Program Lean Mangement, organized on The Faculty of Mechanical Engineering in accordance with Article 20 of the

Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Activities ("Official Gazette of the Republic of North Macedonia No. 245/22)
11 . List of equipment and IT - technical resources provided for the realization of the study program Lean Mangement, Faculty of Mechanical Engineering, in accordance with Annex 2 of the Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Activities ("Official Gazette of the Republic of North Macedonia" No. 245/22)
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 Proposal Decision for the adoption of the study program by the Teaching and Scientific Council of the faculty, the teaching council of the higher professional school or the scientific council of the scientific institute Article 110 and Article 145 of the Law on Higher Education (" Official Gazette of the Republic of Macedonia " No. 82/2018)

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First accreditation
X Reaccreditation

1. GENERAL DATA FOR THE APPLICANT

Name of higher education institution

"Ss. Cyril and Methodius" University in Skopje, Faculty of Mechanical Engineering - Skopje					
Address, headquarters					
Rugjer Boshkovic 18, P.O.Box 464, 1000 Skopje					
EMS	Identification number				
4066499	6462804				
Telephone	Fax				
02/3099200					
E-mail Website of the institution					
contact@mf.ukim.edu.mk	www.ukim.edu.mk www.mf.ukim.edu.mk				

2. 1 ESTABLISHMENT ON THE HIGHER EDUCATION INSTITUTION- FOR THE UNIVERSITY

Name of the founder	General Assembly of the Republic of Macedonia
Title of the act of incorporation	MacedoniaLaw for establishing higher educational insistution – University Ss Cyril and Methodius in Macedonia

 Number and date of the act of incorporation
 No. 6/1949 Official Gazetta of the Republic of

 Macedonia
 Macedonia

Changes in founding rights (name of the second founder and legal successors of the founder)	N/A
Number and date of the Decision on the fulfillment of the conditions for starting work and the activity issued by the Ministry of Education and Science of the Republic of North Macedonia	N/A
Number and date The decision on accreditation of the higher education institution issued by the Board for Accreditation and Evaluation of Higher Education of the Republic of North Macedonia.	N/A
Number and date of the Decision on enrollment of the higher education institution in the Central Registry	N/A

$2.2_$ ESTABLISHMENT OF THE HIGHER EDUCATION INSTITUTION - FOR THE UNIT APPLICANT FOR ACCREDITATION

Name of the founder	National assembly of Republic of Macedonia
Title of the act of incorporation	Law for establishing higher educational insitutions
	in Macedonia – Faculty for Medicine and Faculty
	for technical sciences in Skopje
Number and date of the act of incorporation	Resolution No 10 from June 19th 1959
Changes in founding rights	N/A
(name of the second founder and legal	
successors of the founder)	
Changes in founding rights	N/A
(name of the second founder and legal	
successors of the founder)	
Number and date of the Decision on the	N/A
fulfillment of the conditions for starting work and	

the activity issued by the Ministry of Education	
and Science of the Republic of North Macedonia	
Number and date The decision on accreditation of	N/A
the higher education institution issued by the	
Board for Accreditation and Evaluation of Higher	
Education of the Republic of North Macedonia.	
Number and date of the Decision on enrollment of	N/A
the higher education institution in the Central	
Registry	

$2.3_ESTABLISHMENT$ AT THE HIGHER EDUCATION INSTITUTION - FOR AN INDEPENDENT VOCATIONAL SCHOOL

Name of the founder	
Title of the act of incorporation	
Number and date of the act of incorporation	
Changes in founding rights	
(name of the second founder and legal	
successors of the founder)	
Changes in founding rights	
(name of the second founder and legal	
successors of the founder)	
Number and date of the Decision on the	
fulfillment of the conditions for starting work and	
the activity issued by the Ministry of Education	
and Science of the Republic of North Macedonia	
Number and date The decision on accreditation of	
the higher education institution issued by the	
Board for Accreditation and Evaluation of Higher	
Euucation of the Republic of North Macedonia.	
the higher education institution in the Control	
Registry	
rtegisti y	

3. OWNERSHIP STRUCTURE OF THE HIGHER EDUCATION INSTITUTION

	Х	State – public institution		Private		Mixed
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5. REPRESENTATIVE AUTHORITY OF THE INSTITUTION OF HIGHER EDUCATION

Name and surname, position (Rector, Dean, Director)					
Prof. d-r Zlatko Petreski, full time professor					
Date and act of appointment					
Octoer 1 st , 2023					
contact number		Email			
+389 72 228 422		zlatko.petreski@mf.ukim.edu.mk			
Contact person					
Name and	telephone	Email			
surname					
Prof d-r Bojan Jovanoski	+389 78 283-848	bojan.jovanoski@mf.edu.mk			
		Authorized person			
Date: November 29,2023	M.P	Prof. d-r Zlatko Petreski, full time professor			

Legal frame:

	Legal basis for preparing the Elaboration				
1	Law on Higher Education (Official Gazette of the Republic of Macedonia, No. 82/2018);				
2	Rulebook on the standards and norms for the establishment of higher education institutions and for the performance of higher education activities ("Official Gazette of the Republic of North Macedonia" no. 245/22 and no . 4/23)				
3	Rulebook on methodology, standards and procedure for accreditation of higher education institutions and for accreditation of study programs (" Official Gazette of the Republic of North Macedonia" no . 256 / 22)				
4	Rulebook on the standards and norms for the establishment of scientific institutes and for performing scientific research activities ("Official Gazette of the Republic of North Macedonia" no. 245/22)				
5	Rulebook on the content of study programs (Official Gazette of the Republic of North Macedonia, no. 79/23);				
6	Guidelines for the criteria for the method of ensuring and evaluating the quality of higher education institutions and academic staff in the Republic of Macedonia (Official Gazette of the Republic of Macedonia, no. 67/13);				
7	The decree on the national framework of higher education qualifications ("Official Gazette of the Republic of Moldova " no. 154/2010),				
8	National framework of occupations ("Official Gazette of the Republic of Macedonia " no. 178/15)				
9	Rulebook on the content and form of the diploma, instructions for the preparation of supplements to the diploma and other public documents ("Official Gazette of the Republic of Macedonia " no. 84/09)				
10	Law on the Military Academy ("Official Gazette of the Republic of Macedonia " No. 83/2009)				
11	Rulebook on the closer criteria and competence of the boards for cooperation and trust with the public ("Official Gazette of the Republic of Macedonia " no. 148/13)				
12	Rulebook on the method and conditions for organizing practical teaching for students ("Official Gazette of the Republic of Macedonia" no. 71/09 and 120/10)				
13	Rulebook on the conditions that must be fulfilled by the distinguished expert from the practice of the relevant area for the performance of clinical teaching ("Official Gazette of the Republic of Macedonia " no. 71/09 and 120/10)				
14	Law on medical studies and continuous professional development of doctors of medicine ("Official Gazette of the Republic of Moldova " no. 16/13)				
15	Law on recognition of professional qualifications ("Official Gazette of the Republic of Macedonia " no. 171/10)				
16	Rulebook on the method and procedure for managing the database for higher education activity ("Official Gazette of the Republic of Macedonia " no. 65/13)				
17	Law on scientific research activity ("Official Gazette of the Republic of Macedonia " no. 46/08, 103/08, 24/11 and 80/12)				
18	Law on higher education institutions for the education of teaching staff in pre-school education, primary and secondary education ("Official Gazette of the Republic of Macedonia " no. 10/15)				
19	Statute of the higher education institution				
20	The decision on accreditation of the higher education institution issued by the Board for Accreditation and Evaluation of Higher Education of the Republic of Macedonia.				
21	The decision on accreditation of a study program issued by the Board for Accreditation of Higher Education of the Republic of Macedonia.				
22	The decision to start work issued by the Ministry of Education and Science of the Republic of Macedonia, that is, by AKVO (AQAHE).				

Map of the higher education institution (University, faculty, i.e. higher vocational school) 1.1. Map of higher education institution

Name of	In Macedonian language	Универзитет "Св. Кирил и Методиј" во Скопје Машински факултет - Скопје		
the higher	In English	"Ss. Cyril and Methodius" University in Skopje Faculty of Mechanical Engineering		
education institution	In the language in which the teaching is conducted	"Ss. Cyril and Methodius" University in Skopje Faculty of Mechanical Engineering		
Headquart	ers	Rugjer Boshkovic 18, P.O.Box 464, 1000 Skopje		
Webpage		www.mf.ukim.edu.mk		
Type of higher education institution (public, private, private-public)		Public institution No. 6462804 No of registered activity 85.42		
		2020 First cycle of studies		
		Production engineering Accreditation decision: number 17-48/5 from March 24, 2017 Transport, mechanization and logistics Accreditation decision: number 17-48/6 from March 28, 2017 Thermal engineering Accreditation decision: number 17-48/7 from March 28, 2017 Hydraulic Power Engineering Accreditation decision: number 17-48/8 from March 28, 2017 Industrial Engineering and Management Accreditation decision: number 17-48/9 from March 28, 2017 Motor vehicles Accreditation decision: number 17-48/10 from March 24, 2017 Energy and ecology Accreditation decision: number 17-48/11 from March 24, 2017 Mechatronics Accreditation decision: number 17-48/12 from March 24, 2017 Management and quality control Accreditation decision: number 17-48/13 from March 24, 2017 Industrial design Accreditation decision: number 17-48/14 from March 24, 2017 Materials, processes and innovations		
		Accreditation decision: number 17-48/15 from March 24, 2017 Second cycle of studies (one-year)		
		Sustainable energy and environment - Sustainable energy and ecology Accreditation decision: number 1409-1/4 from 09/24/2020 Product life cycle management Accreditation decision: number 1409-2/4 from 10/30/2020 Materials, Welding and Structural Engineering Accreditation decision: number 1409-146/3 from 22.03.2019 Transport, mechanization and logistics Accreditation decision: number 1409-147/3 from 22.03.2019 Thermal engineering Accreditation decision: number 1409-148/3 from 22.03.2019 Automation and Fluid Engineering Accreditation decision: number 1409-148/3 from 22.03.2019 Motor vehicles Accreditation decision: number 1409-150/3 from 22.03.2019 Industrial Engineering and Management Accreditation decision: number 1409-151/3 from 22.03.2019 Energy and ecology Accreditation decision: number 1409-152/3 from 22.03.2019		

	Accreditation decision: number 1409-153/3 from 22.03.2019 Advanced production systems and technologies Accreditation decision: number 1409-155/3 from 22.03.2019 Mechanics and machine systems Accreditation decision: number 1409-156/3 from 22.03.2019 Industrial design Accreditation decision: number 1409-157/3 from 13.05.2019 Modeling and simulation of plastic deformation technologies and processes – Modeling and simulation of processes and technologies for plastic deformation Accreditation decision: number 1409-158/3 from 22.03.2019 Lean management - Lean management Accreditation decision: number 1409-159/3 from 04/15/2019 Virtual manufacturing engineering – Virtual manufacturing engineering Accreditation decision: number 1409-160/3 from 04/15/2019 Metrology, Management and Quality Control with a sub-program Metrology and a sub-program Quality Management and Control Management of occupational health and safety systems Accreditation decision: number 08-949/6 from 21.3.2023
	Second cycle of studies (two years) Industrial design and marketing Accreditation decision: number 1409-154/5 of 28.06.2019 Metrology, Management and Quality Control with a sub-program Metrology and a sub-program Quality Management and Control Accreditation decision: number 17-48/4 of 24.11.2017 Management of occupational health and safety systems Accreditation decision: number 17-48/2 of 10.07.2017 Third cycle of studies
	Mechanical engineering Accreditation decision: number 08-191/4 from 07/21/2021 Industrial Engineering and Management Accreditation decision: number 08-190/6 from 18.08.2021
Field of study or artistic discipline according to the International Standard Classification of Education of UNESCO (MSCOB, ISCED) and scientific research areas (According to the International Frascati Classification of 2015) for which accreditation has been obtained	Mechanical engineering, Machinery, Energy, Industrial Engineering and Management, Quality Control, Materials, Environment, Transport, Transportation, Construction and Water Management, Regulation and management of technological processes Scientific research area: Technical and Technological Sciences
Data on international cooperation on the teaching plan, scientific research work and student mobility	The Faculty of Mechanical Engineering has international cooperation in the field of teaching, research and student mobility within the, Erasmus and Erasmus + program (signed several agreements with universities from Europe and Worldwide), Fulbright program sponsored by US government, DAAD program from German Government, Norvegian research Agency etc. More information available at http: //www.ukim.edu.mk/dokumenti_m/431_Erazmus+%20dogovo ri.doc and other agreements on international cooperation.
Data on the space intended for the performance of teaching and research activities	1.Total area (gross area) (space for teaching and yard) 9918 m ² 2.Total teaching area (net space) 4840 m ² 3.Number of lecture theaters with total number of chairs lecture theaters with total number of chairs 480 4.Number of classrooms with total number of chairs 24 classrooms with total number of chairs 1111

	no.	Types of didactic space	Number	of Area square	in Total seating	T
	1	numeration	2	metres	capacity	-
		theaters	1	220	200	-
		225	1	198	180	-
	2.	Classrooms 123	25 1	1628,8 87	1113 56	
		124	1	87	64 40	-
		224	1	111	80	-
		311	1	76	48	-
		A1-1 A1-2 left	1	38	38	
		A1-2 right A1-3	1	43	28	-
		A1-5	1	43	28	-
		F2-4	1	60,4	32	
		F2-5 F2-6	1	42,3	18 22	-
		K2-6	1	44,7	28	
		K2-15	1	44,7	20	-
		K3-9 K3-1	1	55,1	36	
		K3-18	1	55,1	36	1
	Nicore					when and any acity of a manufact
	worl			Seroon	nn comp	vial 274 workplaces
		vpes of	Number of	Area in	Total seating	
	d	idactic space	premises	square metres	capacity	
	1 (Computer	10	391		
	F	00m 309	1	75	25	_
	N N	Veb Lab	1	70	20	_
	c	enter 1	1	19	30	_
Data on the equipment for the	c	enter 2	1	47.4	44	_
performance of teaching and	- F	1-2	1	47,4	24	_
research activities	F F	1-3	1	47,4	24	
research activities	H	2-8	1	48,3	40	
	H	3-18	1	44,7	12	
	I	dea.lab loom	1	35	22	-
	H	1-1 toom	1	43	28	-
		umbor o	floho	rotorio	o for prov	
	Z. N		0061 N 21 d	ovidod	Sil0i piao	clical leaching, research and
	3 5	nsinps - auinmer	∙∠iu htforr	evided	nina hiah	er education activities. Equipment
	valu	e accord	tina th		untina ri	iles is 33 829 470 00 FUR
Total number of students for whom	153	1 studer	its at a	all proc	irams	
previous credentials have been	11 ii	the act	ual pr	odram	Lean Ma	anagement for Accreditation (since
obtained	201	7)		- 9		
Number of students (first time	56 a	t 2023/2	4 aca	demic	year	
enrolled)						
	Stru	cture of	the te	aching	staff in t	eaching science, research,
Number of persons in teaching-	tead	hing, an	d ass	ociate	titles	
scientific, scientific and teaching	Full	professo	or 39			
professions	Ass	ociate pi	ofess	or 11		
	Ass	stant pro	ofesso	or 7		
Number of people in associate	Teaching Assistant 16					
positions		= -	04.6-			
Teacher:student ratio (number of	153	1 / 70 =	21.85			
Succents per teacner)	14.0	ma2	ا ا	-		
Space ratio: students (m ² per	11.2	m- per	stude	nt		
siuuenii)	Inte	nolmer	honic	mo for	oncurina	and controlling the quality of
	ature	inai meo	nams a dava	IIIS IUF	ensuring	and controlling the quality of
	jmnl	emental	ion of	the te	aching pr	rocess - the assessment of
Internal mechanisms for ensuring	students, - the preparation of a graduation thesis assessment of					
and controlling the quality of studies	the quality of teaching by students with surveys at the end of each					
	semester for each subject, - evaluation of the quality of the study					
	proc	ram by	the stu	udents	during th	ne awarding of the diploma, - other

	procedures related to the resources and logistics of the teaching process, - conducting an internal evaluation (self-evaluation). Self- evaluation is carried out as a process of self-evaluation at the level of study programs, as well as self-evaluation at the level of the entire Faculty. The self-evaluation is carried out by a commission formed by the Teaching and Research Council, consisting of seven members, five of whom are teachers and two members are students. Segments of the self-evaluation expressed through SWOT analysis: SWOT analysis of the first cycle studies, SWOT analysis of the second cycle studies, SWOT analysis of the third cycle studies, SWOT analysis of the teaching and associate staff, SWOT analysis for spatial and material resources, SWOT analysis for the logistics of the Faculty of Engineering - Skopje, SWOT analysis for the international cooperation of the Faculty of Engineering - Skopje, SWOT analysis for the scientific research activity, SWOT analysis for funding.
	Rating the quality of teaching by students with surveys at the end of each semester for each subject/course, Evaluate the quality of the study program by the students in the award ceremony of the diploma – graduation ceremony Other procedures relating to resources and logistics of the teaching process.
	Self evaluation process – report published on the web site. Link <u>https://www.mf.ukim.edu.mk/sites/default/files/Извештај%20за</u> %20самоевалуација%20на%20МФС%202017-2020.pdf
Frequency of the self-evaluation process (every year, every two years, every three years) and date of the last self-evaluation	<u>Every three years</u> Last one is on-going – to be finished in December 2023
Data on the last conducted external evaluation of the institution	2017 The last external evaluation of the University was conducted from 16 to 20 October 2017 by an expert team nominated by the European Association of Universities, in Brussels. The evaluation report is available on the website http://ukim.edu.mk/mk_content.php?meni=155&glavno=1
Other data that the Institution wants to state as an argument for its success	Number of graduates of: Undergraduate studies (VII/1 degree – higher education) 4650 Undergraduate studies (VI/1 degree – higher education) 1296 Postgraduate studies (VII/2 degree – masters) 292 Doctors of Science (application by topic) 151 Undergraduate and first cycle four-year studies after ECTS 1979 Undergraduate and first cycle three-year studies in ECTS 671 Second cycle of studies after ECTS 493 Third cycle of studies – doctoral studies 29 Interdisciplinary Studies in Environmental and Resource Engineering First cycle of studies 18 Second cycle of studies 5

1. 2 . Map of a higher education institution - for interdisciplinary studies - participants in the study program

	In Macedonian	N/A
Name of the higher	language	
education	In English	
institution	In the language in	
montation	which the teaching	
	is conducted	
Headquarters		
Webpage		
I ype of higher educa		
(public, private, priva	te-public)	
Data on the last accr	editation	
Field of study or artis	tic discipline	
according to the Inter	national Standard	
	cation of UNESCO	
(IVISCOB, ISCED) and		
Freeseti Clessificatio	ne miemalional	
	n of 2015) for which	
Data on international	cooperation on the	
teaching plan, scient	fic research work	
and student mobility		
,		
Data on the space in	tended for the	
performance of teach	ing and research	
activities		
Data on the equipme	nt for the	
performance of teach	ing and research	
activities		
I otal number of stud	ents for whom	
previous credentiais	nave been obtained	
Number of students (tirst time enrolled)	
scientific and teaching	a profossions	
Number of people in	associate positions	
Teacher:student ratio	(number of	
students per teacher		
Space ratio: students	; (m ² per student)	
Internal mechanisms	for ensuring and	
controlling the quality	of studies	
Frequency of the self-evaluation process		
(every year, every tw	o years, every three	
years) and date of the last self-evaluation		
Data on the last conducted external		
evaluation of the inst	itution	
Other data that the Ir	stitution wants to	
state as an argument	for the success of a	
higher education inst	itution participating	
in the realization of th	ne study program	

2 . DATA ON THE ORGANIZATION UNIT OF THE STUDY PROGRAM

		In Macedonian language	Машински факултет - Скопје
	Unit of a higher	In English	Faculty of Mechanical engineering - Skopje
1	1 education institution (unit of the University)	In the language in which the teaching is	Faculty of Mechanical engineering - Skopje
		conducted	
2	Headquarters	arch area in which the unit	Rugjer Boshkovic 18, P.O.Box 464, 1000 Skopje
3	is accredited according Standard Classification (MSCOB, ISCED).	to the International of Education of UNESCO	
4	Scientific research area accredited according to	for which the unit is Frascati's classification	2. Technical-technological field
5	Type of studies (acader developed at the unit	nic or professional)	Academic study programs
			First cycle of studies
6	Scientific research area for which the unit is accredited according to Frascati's classification Type of studies (academic or professional) developed at the unit Study programs within the unit		Production engineering Accreditation decision: number 17-48/5 of March 24, 2017 Transport, mechanization and logistics Accreditation decision: number 17-48/6 of March 28, 2017 Thermal engineering Accreditation decision: number 17-48/7 of March 28, 2017 Hydraulic Power Engineering Accreditation decision: number 17-48/8 of March 28, 2017 Industrial Engineering and Management Accreditation decision: number 17-48/9 of March 28, 2017 Motor vehicles Accreditation decision: number 17-48/10 of March 24, 2017 Energy and ecology Accreditation decision: number 17-48/10 of March 24, 2017 Mechatronics Accreditation decision: number 17-48/11 of March 24, 2017 Management and quality control Accreditation decision: number 17-48/13 of March 24, 2017 Industrial design Accreditation decision: number 17-48/14 of March 24, 2017 Materials, processes and innovations Accreditation decision: number 17-48/15 of March 24, 2017 Second cycle of studies (one-year) Sustainable energy and environment - Sustainable energy and environment - Sustainable energy and environment - Sustainable energy and ecology
			Accreditation decision: number 1409-1/4 of 09/24/2020 Product life cycle management
			Accreditation decision: number 1409-2/4 of 10/30/2020

Materials, Welding and Structural Engineering Accreditation decision: number 1409-146/3 of
ZZ.U3.ZU19 Transport machanization and lariation
Accreditation decision: number 1400-147/3 of
22.03.2019
Thermal engineering
Accreditation decision: number 1409-148/3 from
22.03.2019
Automation and Fluid Engineering
Accreatiation decision: number 1409-149/3 of 22.03.2019
Motor vehicles
Accreditation decision: number 1409-150/3 of
22.03.2019
Industrial Engineering and Management
Accreditation decision: number 1409-151/3 of 22.03.2010
Energy and ecology
Accreditation decision: number 1409-152/3 of
22.03.2019
Mechatronics
Accreditation decision: number 1409-153/3 of 22.03.2019
Advanced production systems and technologies
22.03.2019
Mechanics and machine systems
Accreditation decision: number 1409-156/3 of
22.03.2019
Industrial design Accreditation decision: number 1400-157/3 from
13.05.2019
Modeling and simulation of plastic deformation
technologies and processes – Modeling and
simulation of processes and technologies for
Accreditation decision: number 1409-158/3 of
22.03.2019
Lean management - Lean management
Accreditation decision: number 1409-159/3 from
04/15/2019 Virtual manufacturing engineering – Virtual
manufacturing engineering
Accreditation decision: number 1409-160/3 from
04/15/2019
Metrology, Management and Quality Control with
a sub-program inetrology and a sub-program Quality Management and Control
Second cycle of studies (two years)
Industrial design and marketing
Accreditation decision: number 1409-154/5 of
28.06.2019
Netrology, Management and Quality Control with
Quality Management and Control
Accreditation decision: number 17-48/4 of
24.11.2017
Management of occupational health and safety
0,000110

		Accreditation decision: number 17-48/2 of 10.07.2017
		Third cycle of studies
		Mechanical engineering Accreditation decision: number 08-191/4 from 07/21/2021 Industrial Engineering and Management Accreditation decision: number 08-190/6 from 18.08.2021
7	Cycle of education (first or second cycle of studies, or integrated first with second cycle of studies and third cycle)	First and second cycle of studies
8	Total number of students for whom previous credentials have been obtained	2019-2023 3370 students
9	Number of students (first time enrolled)	2022 – 384 enrolled students
10	Number of persons in teaching-scientific, scientific and teaching professions	57
11	Number of people in associate positions	16
12	Teacher:student ratio (number of students per teacher)	17

Table 2.1. List of persons selected in teaching-scientific positions in a full -time employment relationship at a unit (faculty) that requires (re)accreditation of the study program (Article 61 of the Law on Higher Education , "Official Gazette of the Republic of Macedonia", no. 82 /2018)

	Name and surname of the teacher	Teaching-scientific title
1.	Angusev Koco	Full professor
2.	Bogatinovski Zoran	Full professor
3.	Gavrilovski Marjan	Full professor
4.	Gecevska Valentina	Full professor
5.	Kocov Atanas	Full professor
6.	Korunoski Dame	Full professor
7.	Kandikjan Tatjana	Full professor
8.	Minovski Robert	Full professor
9.	Aleksa Malceski	Full professor
10.	Polenakovikj Radmil	Full professor
11.	Pandilov Zoran	Full professor
12.	Rincev Dobre	Full professor
13.	Stojkovski Valentino	Full professor
14.	Sidorenko Sofija	Full professor
15.	Tuneski Atanasko	Full professor
16.	Trajkovski Laze	Full professor
17.	Tasevski Risto	Full professor
18.	Caloska Jasmina	Full professor
19.	Cakmakov Dusan	Full professor
20.	Vrtanoski Gligorce	Full professor
21.	Tuneski Nikola	Full professor
22.	Petreski Zlatko	Full professor
23.	Simonovski Petar	Full professor
24.	Gavrilovski Viktor	Full professor
25.	Stojmanovski Viktor	Full professor
26.	Tasevski Done	Full professor

07	D'11 1 D' /	F 11 C
27.	Filkoski Risto	Full professor
28.	Danev Darko	Full professor
29.	Gurkov Igor	Full professor
30.	Mickovski Hristijan	Full professor
31.	Markov Zoran	Full professor
32.	Dimitrovski Dame	Full professor
33.	Lazarevska Ana	Full professor
34.	Celakoska Emilija	Full professor
35.	Sarevski Vasko	Full professor
36.	Mojsovski Filip	Full professor
37.	Zaev Emil	Full professor
38.	Babunski Darko	Full professor
39.	Tomov Mite	Full professor
40.	Prangoski Bojan	Associate Professor
41.	Jovanoski Bojan	Associate Professor
42.	Jakimovska Kristina	Associate Professor
43.	Mircevski Ile	Associate Professor
44.	Rizov Tasko	Associate Professor
45.	Donceva Elizabeta	Associate Professor
46.	Avramov Nikola	Associate Professor
47.	Iliev Viktor	Associate Professor
48.	Petrusevski Mirko	Associate Professor
49.	Zdravevski Filip	Associate Professor
50.	Seso Igor	Associate Professor
51.	Velkovski Trajce	Assistant Professor
52.	Dzokokj Elena	Assistant Professor
53.	Dzudrov Marjan	Assistant Professor
54.	Vase Janusevska	Assistant Professor
55.	Tomi Dimovski	Assistant Professor
56.	Simona Domazetovska	Assistant Professor
	Markovska	
57.	Elena Angeleska	Assistant Professor

3. BASIC INFORMATION ABOUT THE STUDY PROGRAM

	Name of the study program	In Macedonian	LEAN MEHAUMEHT
1		language	Ι ΕΑΝ ΜΑΝΑΩΕΜΈΝΤ
		In the language in	LEAN MANAGEMENT
		which the teaching is conducted	
	Fields of study or artistic discipline of first, second and third level	s A wider area	07 Engineering, Manufacturing and Construction
2	according to the International Standard Classification of Education of UNESCO (MSCOB, ISCED), For	on Narrower area	071 Engineering and engineering trades
2	interdisciplinary study programs, th corresponding fields of study or art disciplines of first, second and third level are indicated	t Detailed area	0719 Engineering and engineering trades not elsewhere classified (Industrial Engineering and Management)
		Scientific area	2 Technical and technological sciences
		Scientific field	211 Industrial Engineering and Management
3	Frascati's classification (for determining appellation)	Scientific, professional or artistic field	Most of the fields, but primarily 21105 – Organization of technological processes 21108 – Industrial Dynamics 21101 – Planning 21102 – Time analysis and measurement
		Main groups	2 Experts and scientists
	National Classification of	Subgroups	21 experts for science and engineering
4	National Classification of Occupations	Subgroups	214 experts for engineering sciences
		Single groups	2141 industrial and production engineers
5	Type of studies (academic or profe	essional)	Academic
6	Cycle of education (first or second	cycle of studies, or	Second sycle academic study program
7	Load of the study program express	sed in ECTS credits and if	60 ECTS
-	preparatory courses are provided	work of professional and	
8	academic undergraduate and post	graduate studies	
9	Duration of studies (in years and so the study program)	emesters of the duration of	1 academic year
10	Data on whether the study program accreditation or for the extension of	n is being submitted for f previous accreditation	Extension of previous accreditation
11	Method of financing the proposed s private and private-public non-prof scientific institutions, proof of provi guarantee for the referee program	study program, and for it higher education and ded quality financial	Self financing from students, according the Law for Hiugher education in Macedonia
12	Degree or level of qualification req studies according to the National C	uired for enrollment in Qualifications Framework	VII A
13	Conditions for enrolling in the study full-time, part-time and foreign stud subjects relevant to the study prog matriculation or entrance exam wit accurate content of the exam, its d assessment	y program especially for dents, which include ram from the state h clear, unambiguous and luration, performance and	Previous first cycle of study with minimum 240 ECTS in the field of technical – technological sciences Since Lean Management has certain multidisciplinary aspects in itself, students from different fields will be additionally evaluated for enrolling this study program by the Teaching and Scientific Council at the Institute for Production Engineering and Management.
14	A degree or level of qualification of studies according to the National C	btained by completing Qualification Framework	VIIĂ
	Academic or professional title In that is acquired after completing the study program In	In Macedonian language	Магистер по индустриско инженерство и менаџмент - Lean Management
15		In English	Master of Science in Industrial Engineering and Management - Lean Management

		In the language in which the teaching is conducted	Master of Science in Industrial Engineering and Management - Lean Management	
16	Place of teaching		Faculty of Mechanical engineering – Skopje	
17	Number of students plar	nned to enroll in the study program	20 students per year	
18	Language in which the t	eaching will be conducted	Englsih	
19	Possibility of teaching in mobility - teaching subje	a foreign language (windows of ects that can be taught in English)	N/A	
20.1	Method of study (full-tim	e, part-time study)	Full time study program	
20.2	Rules, opportunities and study program	I conditions for part-time study of the	N/A	
21	Information on continuin scientific fields for study cycle of academic or pro completion of the corres cycle ensures adequate	g education including study and programs from the second and third ofessional studies for which ponding study program from the first passability	Third cycle of studies at Engineering studty programs at the Faculty of mechanical engineering or at any other Universityt with accreditaed study program in the filed of mechanical or industrial engineering	
22	Academic year in which program will begin	the implementation of the study	2024/2025	
23	The deadlines for compl study program	eting the planned activities from the	Two years since the enrollment	
24	Number and date of Decision (if submitted for re-accreditation)	of the last accreditation by the Accreditation Board to start working on the study program from MES/AHEQ	1409-159/3 15.4.2019 14-734 25.6.2019	

3 . Purpose and justification for introducing the study program

The purpose of the study program is to spread the knowledge of Lean Management in the Macedonian environment due to the fact that it can significantly improve the performance of the companies and hence affect the general growth of the county.

Briefly, Lean Management can be defined as business and production philosophy that decreases the time from order to delivery and delivers the final product through elimination of the wastes in the value flow. In other words, it tends to minimize the costs and time for delivering the final product to the customer through the elimination of the wastes in all processes.

The Lean Management is a production philosophy that has a long and fruitful history. It started as Toyota Production System in the Toyota company, but at the end of the last century it became more recognizable as Lean Management and was spread all around the world, regardless the type of the company (small, medium or large), type of the business (production or services), country (small and big, developed or in development), ... Still, the most of implementations are in the manufacturing industry and companies originating from more developed countries.

Although it is not new approach, the interest for Lean Management is still not declining. On the contrary, it is still growing. On the Figure 1 the growth of articles where the word Lean (in a Lean Management context) appeared is shown.



Figure 1: The growth of articles including the word Lean (source: From Lean Production to Lean 4.0: A Systematic Literature Review with a Historical Perspective, by Francisco Gil-Vilda, José A. Yagüe-Fabra

and Albert Sunyer, 2021)

Its effectiveness is also proven by the fact that in the last years, there were successful efforts to combine Lean Management with other complementary approaches. Some of the most known examples are Lean Six Sigma and Lean 4.0. The Lean Six Sigma has been recognized as an extension that can additionally improve the productivity and value that the companies are delivering to their customers. Industry 4.0 and digitalization are the necessity for the companies today since they are one of the important tools for coping with the dynamic environment. Implementation of such approaches without knowing the basics of Lean Management is practically impossible.

In previous research many different benefits from implementing Lean Methodology are reported. Some of them are: better delivery reliability by 26%, improved productivity by 25%, decreased scrap by 25%, ..., leading to increased customer satisfaction by 60%. So, benefits from implementing Lean are undeniable. But, substantial knowledge and knowhow are one of the main prerequisites for its successful implementation. Introducing this study program should overcome existing gaps in the industry demand and labor market offer (more on this topic, in Section 4).

All these facts show that having a knowledge and knowhow in Lean Management is a must in today's manufacturing environment and having skilled engineers in this field is a value added for every country, both for existing companies and for attracting additional foreign investors.

It has to be stressed that this study program is a natural extension of bachelor study program of Industrial Engineering and Management – IIM (since Lean Management is one of the main approaches in the field of IIM), which is held at the Faculty of Mechanical Engineering and organized by the Division of Industrial Engineering and Management.

4. Compliance of the study program with the needs of society for the given personnel profile

Despite the strong commitment in the global frames, the interest for Lean Management in our country is lagging behind. Some research shows clear delay regarding implementation of Lean Management and Lean Tools in Macedonian companies with dominant domestic capital, Figure 2.



Figure 2: Implementation of Lean Management and Lean Tools in Macedonian companies with dominant foreign (left diagram) and domestic (right diagram) capital (source: Minovski, R., Jovanoski, B., Galevski, P. (2018). Lean implementation and implications: experiences from Macedonia. International Journal of Lean Six Sigma)

In addition, other research (performed to detect the main obstacles for cooperation between Macedonian FDIs and domestic companies), showed that Macedonian FDIs (Foreign Direct Investments), are pinpointing time to response and costs/prices as one of the prime obstacles for collaborating with domestic companies, Figure 3. Exactly those weaknesses can be tackled with Lean Management.



Figure 3: Main obstacles for cooperation between Macedonian FDIs and domestic companies

In the same direction, it has to be mentioned that Macedonian FDIs are the leaders in implementation of Lean Management. Most of these companies have separate (large) divisions for Lean Management, meaning that employability of this profile is guaranteed.

Still, coming back to the needs of the society for this kind of profile, it has to be mentioned that in 2022 the Smart Learning Factory – Skopje (SLFS) was established as the first Macedonian learning factory, in scope of the EIT Manufacturing project, titled as "Learning Factory for Improving Digital Competitiveness of SMEs (Learn4SMEs)", The partners in this project were Technical University of Vienna, Festo Learning Centre Saar GmbH and CIRKO (Centre for Research, Development and Continuous Education, a daughter company of the Faculty of Mechanical Engineering, University of Ss. Cyril and Methodius in Skopje). The main topic of SLFS is Lean4.0. In scope of the activities of the SLFS, the main personnel responsible for this study program, is currently organizing professional courses for Lean Six Sigma, where already 4 sessions are fully booked and additional ones are planned. The participants are not only FDIs, but also Macedonian SMEs from food, textile and other industries. This clearly shows increased interest by the industry for this topic and potential prosper of this study program.

Regarding the potential interest, it must be emphasized that according to NEWS RELEASE related to the Labor Force Survey for the IV quarter of 2021, Manufacturing industry employs 160.373 persons or over 20% of total number of employees.

As mentioned in previous section, the bachelors in IIM are potential students for this study program on the second cycle of studies. Survey of the industry prepared last year by the Faculty of Mechanical Engineering, showed that employed engineers in IIM evaluated the needed knowledge in Lean Management and similar approaches (Six Sigma, KAIZEN, etc.) for their everyday job, with 7.24 on a scale of 1 (not needed at all) to 10 (extremely needed). This really high mark, shows again the need for proposed study program.

To sum up, the Lean Management is production philosophy that can be implemented in various companies, which is facing increasing interest from domestic industry and implementation of this approach can be extremely beneficial for the Macedonian companies.

5 . National Framework of Qualifications level, study program Lean Management, Ss Cyril and Methodius University in Skopje, Faculty of Mechanical engineering - Skopje, in accordance with the Regulation on the national framework of higher education qualifications

Level National qualit framework for education	ficiation higher	High education Second cycle study program	Level of the Eurpoean qualification framework
V II	Α		-
VII	В	VII A	

6 . Study program objectives and learning outcomes that indicate the successful completion of the second cycle of studies (60 ECTS) and are awarded to a person who meets the following qualification descriptors:

6. a. General descriptors of qualifications for the second cycle of one year studies with 60 ECTS, for the study program submitted for (re)accreditation , in accordance with the Decree on the national framework of higher education qualifications

Descriptor type	Description
Knowledge and understanding	 Demonstrates profound knowledge and understanding of the scientific and research fields and areas acquired in the second cycle of studies. These refer to: Understanding the basics of Lean (principles, wastes, etc.); Understanding the role of the people in Lean; Knowledge of process modeling; Knowledge of process analyses and continuous improvement and certain Lean tools; Understanding the influence of relevant fields on successful Lean implementation.
Application of knowledge and understanding	Ability to model real processes; Capable of generating variant solutions; Ability to implement practical solutions in Lean Management; Ability to implement some of the most important Lean tools in real environment; Ability to implement certain aspects of some influential fields on Lean (like Team Work, Modelling and Simulation, Organizational Design, Quality Management Systems and TQM, Statistics, Workplace Safety Management, Maintenance (TPM), Green aspects, etc.) in real environment.
Assessment ability	Ability to assess the performance of real processes; Ability to evaluate the implementation of Lean aspects (principles, analysis of wastes, etc.).in real environment; Ability to assess the potential for implementation of certain Lean tools in real environment; Ability to assess the level of organizational culture in the organizations Ability to evaluate the possibility for implementation of certain aspects of some influential fields on Lean (like Team Work, Modelling and Simulation, Organizational Design, Quality Management Systems and TQM, Statistics, Workplace Safety Management, Maintenance (TPM), Green aspects, etc.) in real environment.
Communication skills	Has ability for engineering and scientific communication through the preparation of reports, analyses, professional and scientific papers;

	Able to analyze and improve certain processes in regard to Lean Management;
Study skills	Can develop creativity, analytical work and flexibility in the process of learning;
-	Able to practice different soft skills in relationship with Lean Management.

6. b. Specific descriptors of qualifications for the second cycle of one year studies with 60 ECTS, for the study program submitted for (re)accreditation, in accordance with the Decree on the national framework of higher education qualifications

Descriptor type	Description
	Understanding the origin of Lean;
	Understanding the importance of Lean;
	Detecting the prerequisites of Lean implementation;
	Knowledge of process modeling – methods and approaches;
	Knowledge of Lean principles and their implementation;
	Knowledge of Lean wastes, their detection and tools for handling them;
Knowledge and	Knowledge of Lean House;
understanding	Detailed knowledge for implementation of the most important and the most
	frequently used Lean tools, like 5S, Value Stream Mapping, etc.;
	Knowledge for implementation of small-scale Lean projects;
	Understanding the influence of relevant fields on successful Lean implementation,
	like Team Work, Modelling and Simulation, Organizational Design, Quality
	Management Systems and TQM, Statistics, Workplace Safety Management,
	Maintenance (TPM), Green aspects, etc.
	Ability to model real processes;
	Ability to evaluate the basic prerequisites of Lean implementation in certain
	surrounding;
	Ability to evaluate the implementation of Lean principles in real environment;
Application of	Ability to detect the Lean wastes in real environment;
knowledge and	Ability to implement the some of the most important Lean tools (like 5S, Value
understanding	Stream Mapping, etc.) in real environment;
	Ability to implement certain aspects of some influential fields on Lean (like Team
	Work, Modelling and Simulation, Organizational Design, Quality Management
	Systems and TQM, Statistics, Workplace Safety Management, Maintenance
	(TPM), Green aspects, etc.) in real environment.
	Ability to assess the performance of real processes;
	Ability to evaluate the implementation of Lean principles in real environment;
	Ability to assess the organizational culture in real environment;
	Ability to evaluate the level of Lean in real organization;
	Ability to assess the potential for implementation of certain Lean tools in real
Assessment ability	environment;
	Ability to evaluate the possibility for implementation of certain aspects of some
	influential fields on Lean (like Team Work, Modelling and Simulation,
	Organizational Design, Quality Management Systems and TQM, Statistics,
	Workplace Safety Management, Maintenance (TPM), Green aspects, etc.) in real
	environment.
	Has ability for engineering and scientific communication through the preparation
Communication skills	of reports, analyses, professional and scientific papers;
	Ability to work in team.

	Able to analyze and improve certain processes in regard to Lean Management; Can develop creativity, analytical work and flexibility in the process of learning; Can be able to see the bigger picture;
Study skills	Can practice scientific research work;
	Can work in teams;
	Can manage the time;
	Able to present the work.

7 . Determined ratio between mandatory and optional subjects, with a list of mandatory subjects, a list of optional subjects and a defined way of choosing the subjects.

STRUCTURE OF THE STUDY PROGRAM

Table 7.1. Schedule of subjects by semesters and years of study for academic studies (AS)

A Serial Number	Subject code	Title of the subject/course	Semestar	Weekly fund of classes		ECTS
				lectures	exercises	
FIRST YEAR – first semestar						
1	2LEAN01	Lean Thinking	I/winter or I/summer	2	2	6
2	2LEAN02	Lean Tools 1	I/winter or I/summer	2	2	6
3	2LEAN03	Motivation and Creative Teams	I/winter or I/summer	2	2	6
4	2LEAN04	Lean Tools 2	I/winter or I/summer	2	2	6
Total hours (lectures/exercises) and ECTS for the first year first semester				8	8	24

A Serial	Subject	Name the subject	Semester	Weekly fund of classes		ECTS
Number	code		ochicator	Р	С	LOIS
FIRST Y	EAR – secor	nd semestar				
1		Elective subject/course 1	II/summer or II/winter	2	2	6
2		Elective subject/course 2	II/summer or II/winter	2	2	6
3		Elective subject/course 3	II/summer or II/winter	2	2	6
4		Master Thesis	II/summer or II/winter	/	/	18
Total hours (lectures/exercises) and ECTS for the first year second semester			6	6	36	
	Total hours (lectures/exercises) and ECTS for the first year			14	14	60

 Table 7.2 . Electives and subjects of the study program (the list includes the elective subjects of the study program and teaching subjects that are performed at another unit of the university, in accordance with Article 139 paragraph 9 of the Law on Higher Education (Official Gazette of the Republic of Macedonia 82/18))

A Serial	Code	Title of the subject	Semester	Weekly fund of classes		ECTS	From which unit	
Number		····· -··· j ·		lectures	exercises			
1	2IIM18	Applied Modelling and Simulation in Business Processes	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje	
2	2LEAN0 6	Organisational Design – Lean Approach	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje	
3	2LEAN0 7	Design of Quality Management Systems in accordance with ISO 9001	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje	
4	2LEAN0 8	Lean Project	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje	
5	2LEAN0 9	Applied Statistics	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje	

6	2LEAN1 0	Economical Aspect of Lean	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje
7	2LEAN1 1	Lean & Other Approaches	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje
8	2LEAN1 2	Workplace Safety Management	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje
9	2LEAN1 3	Total productive Maintenance	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje
10	2LEAN1 4	TQM	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje
11	2LEAN1 5	Ergonomic Systems	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje
12	2LEAN1 6	Energy economics	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje
13	2LEAN1 7	Project Cycle Management	II/summer or II/winter	2	2	6	Faculty of Mechanical Engineering - Skopje

Table 7.3. Mobility windows - teaching subjects that can also be taught in English according to Article 139 paragraph 10 of the Law on Higher Education ("Official Gazette of the Republic of Macedonia" no. 82/18)

	Name of subject	A teacher	Year/ Year	Is KTS
1.	N/A			

The study program is created and will be realized on English languge, which gives 100% possibilities for mobility windows!

Table 7.4. Overview of representation of compulsory co	urses	and
the elective subjects of the study program.		

Semester	Number of compulsory subjects	Number of elective courses	Total subjects
	4	0	4
II	1	3	4
In total	5	3	8
% representation	62,5 %	37,5 %	100 %

Table 7.5. Overview of the percentage representation of compulsory courses and the optional subjects.

Row no	Duration of studies (years)/ total number of ECTS of the study	Total load	expressed through ECTS	Load expre	for optional subjects essed through ECTS
	program	A Total number of ECTS of the study program	A1 Percentage representation of ECTS from the teaching subjects of the study program	B Total number of ECTS from elective subjects	B1 Percentage representation of ECTS from elective subjects in relation to the total number of ECTS in the study program
1.	1 year 60 E KTS	60	100%	18	(B/A)*100= 30 %

7.1. Rules and method of choosing elective subjects with the possibility of choosing subjects from other accredited study programs

Method of choosing elective subjects from the study program

The students have opportunity to choose the elective course from the list in accordance to the topic of the master research and master thesis. It is strongly recommended to make the choice of elective courses in coordination with the study program coordinator and the master thesis supervisor. It is strongly recommended that one professor could not have more than two courses with one student.

Method of choosing elective subjects from the university list

The students have the opportunity to choose the elective course – maximum two, from the list of offered elective courses from all other study programs offered by the Faculty of Mechanical engineering or within the study programs of the Ss Cyril and Methodius University in Skopje in accordance to the topic of the master research and master thesis.

It is strongly recommended to make the choice of elective courses in coordination with the study program coordinator and the master thesis supervisor. It is strongly recommended that one professor could not have more than two courses with one student.

7.2. Deadlines for completing the planned activities of the study program

The deadline is ten years from the starting academic year and semestar when the staudy program starts with activies.

8. List of teaching staff with data specified in Article 7 (Annex No. 4) of the Rulebook on the content of study programs ("Official Gazette of the Republic of Macedonia", No. 79/2023) and Article 61 paragraph 3 of the Law on Higher Education ("Official Gazette of the Republic of Macedonia", No. 82/2018)

		to	to state		Total n sub	umber of ojects
	Name and surname of the teacher	the title in which was chosen and in which scientific field	The field in which he received his doctorate	(from Table 7.1 and 7.2)	winter	summer
1	Robert Minovski	Full professor, Industrial engineering and management (in 2009)	Technical- Technological Sciences (Industrial engineering and management)	Lean Thinking Lean Tools 2 Design of Quality Management Systems in accordance with ISO 9001 Lean Project	2	2
2	Bojan Jovanoski	Associate professor	Industrial engineering and management	Lean Tools 1 Lean Tools 2 Applied modelling and simulation in business processes Lean project	2	2
3	Gligorche Vrtanoski	Full professor, 21403 Production engineering, technologies, and systems	Production engineering, technologies and systems, Composite materials	TQM	0	1
4	Igor Seso	Associate professor	20505 Unconventional energy sources and technologies	Energy Economics	0	1

 Table 8.1 List of persons selected in teaching-scientific, scientific and teaching positions in regular full-time employment of the unit, which will participate in the implementation of the study program

5	Jasmina Chaloska	Full professor, 21403 Production engineering, technologies, and systems, 21105 Organization of technological processes	Production engineering, technologies and systems	Workplace safety management Ergonomic systems	0	2
6	Mirko Petrushevski	Associate professor	10900 Mathematics	Applied statistics	0	1
7	Nikola Tuneski	Full Professor	11000 Informatics 10900 Mathematics	Applied statistics	0	1
8	Radmil Polenakovikj	Full professor, Industrial engineering and management	Industrial engineering	Motivation and Creative Teams Organisational Design – Lean Approach Total productive Maintenance Project Cycle Management	1	3
9	Atanas Kochov	Full professor, 21403 Production engineering, technologies and systems, 21105 Organization of technological processes	Production engineering, technologies and systems, Composite materials	Lean & other approaches	0	1
10	Trajce Velkovski			Motivation and Creative Teams Workplace safety management Project Cycle Management	1	2
11	Valentina Gecevska	Full professor, 21403 Production engineering, technologies and systems, 21105 Organization of technological processes	Production engineering, technologies and systems	Economical aspect of Lean	0	1
				In total	4 (6)	13 (17)

Remark: Numbers in the brackets are due to the fact that some subjects/courses are covered with two optional lecturers/teachers.

 Table 8.2 List of persons selected in teaching-scientific, scientific and teaching positions in regular full-time employment from other units of the higher education institution engaged in the unit where the study program is implemented

Ro			to state		Title of the	Total r	number of
w		the title in	The field in	unit where	subject	subjec	ts taught
no	Name and	which was	which he	works in	(from Table	per uni	t and cold.
	surname of the	chosen and	received his	regular	7.1 and 7.2)	pro	ogram
	teacher	in which scientific field	doctorate	employment		winter	summer
1							
2							
3							
4							

5				
6				
7				
8				
9				
10				
11				
			In total	

Elaborate for Accreditation of Study second cycle program

OB.1

 Table 8.3 List of persons selected in teaching-scientific, scientific and teaching positions in employment in another higher education institution or other institution (private or public non-educational) engaged in the unit where the study program is implemented

....

	N/A								
Rb	Name	and		to state		Title of the			Worki
	surname teacher	of the	the title in which was chosen and	The field in which he received	the institution where the employment	subject (from Table 7.1 and 7.2)	Total n of sub	umber ojects	ng relati on
			in which	his	relationship is		winter	sum	
			scientific field	doctorate	based			mer	
1									
2									
3									
4									
5									
						In total			

Table 8.4. Number of teachers needed to implement the higher education activities of the study program (Article 28 of the Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Schools , "Official Gazette of the Republic of Macedonia", No. 245/2022)

Row	Teachers involved in	A Number of	B Total No.of	C Number of	G Number of students in	Number of
no.	the realization of the	teaching	hours of	students for whom	the group for lectures	teacher - per
	study program	subjects	classes by subject	accreditation is sought	and exercises for full- time students ²	year ¹ (Bx15) x G
1	Robert Minovski	4	16			240
2	Bojan Jovanoski	4	16			240
3	Gligorche Vrtanoski	1	4			60
4	Igor Seso	1	4		Max 1 group of	60
5	Jasmina Chaloska	2	8		wax i group or	120
6	Mirko Petrushevski	1	4	20	of student for the	60
7	Nikola Tuneski	1	4		droup is may 20	60
8	Radmil Polenakovikj	4	16		group is max 20	240
9	Atanas Kochov	1	4]		60
10	Trajce Velkovski	3	12			180
11.	Valentina Gecevska	1	4			60

¹ Number of weeks in a semester. If the subjects are taught in two semesters, 30 weeks are recorded, i.e. one academic year. ² The size of the group for lectures and exercises is obtained in such a way that the number of students for whom

² The size of the group for lectures and exercises is obtained in such a way that the number of students for whom accreditation is requested is collected depending on the size of the group provided for lectures and exercises in accordance with Article 35 of the Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Activities, ("Official Gazette of the Republic of Macedonia", no. 245 /20 22) ex. lecture group – a maximum of 100 students is considered as one group. If the determined number increases by 50%, a new lecture group is opened and 2 is written in column "G".

9. List of provided required number of non-teaching staff, in accordance with Article 13 of the Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Activities (Official Gazette of the Republic of North Macedonia No. 245/22)

Table. 9.1. A summary of non-teaching / administrative staff by title and jobs at the higher education institution (faculty , i.e. higher vocational school)

Ord. number	Job description	Qualification	Number of persons
1.	Library	Higher education	1
2.	Student Department questions	Higher education	5
3.	Service for auxiliary - technical staff	Higher education	10
4.	Service for material and financial operations	Higher education	4
5.	Service for general and legal affairs	Higher education	3
6.	Information System Executive	Higher education	1

10 . Data on the space provided for the realization of the Study Program Lean Mangement, organized on The Faculty of Mechanical Engineering in accordance with Article 20 of the Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Activities ("Official Gazette of the Republic of North Macedonia No. 245/22)

Table 10. List of rooms with surface area available to the higher education institution (faculty i.e. higher professional school)

R.B.	Type and purpose of space	Number	Number of seats	Area m ²
1.	Amphitheatres and lecture halls	2	480	426
2.	Laboratories	21	250	2192
3.	Cabinets for the teaching staff	83+12	150	1736
4.	Offices and rooms for non-teaching staff	15	50	475
5.	Premises for work of the organs and bodies of the higher education institution	2		125
6.	Premises for student assembly work	/		
7.	Other common and multipurpose rooms: meeting rooms,	2		125
8.	Library, reading room	1+1		
9.	Hygienic and sanitary knots,	15		
10.	Rooms for reception of visitors,	5		
11.	Corridors , warehouses, pantry, archives, elevators, stairs and more	40		
12.				
			In total	9918

11 . List of equipment and IT - technical resources provided for the realization of the study program Lean Mangement, Faculty of Mechanical Engineering, in accordance with Annex 2 of ³the Rulebook

³ Each higher education institution (university, faculty and higher vocational school) submitting the report adjusts Table 10 depending on the content noted in Appendix 2 in accordance with the affiliation of the unit to a scientific research area and field from the Rulebook on Standards and Norms for the Establishment and Conduct of Higher Education activity (Official Gazette of the Republic of North Macedonia no. 245/22).

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on Standards and Norms for the Establishment and Performance of Higher Education Activities ("Official Gazette of the Republic of North Macedonia" No. 245/22)

 Table 11.1 List of equipment and teaching aids (by type, number and purpose) for performing the activity that correspond to the norms and standards for performing higher education activity.

Order No.	Equipment and teaching aids	Kind	Purpose	Number
1.	3D Printers – FFF Technology	Real production	Printing of 3D parts/products	4
2.	3D Printer – SLA Technology	Real production	Printing of 3D parts/products	1
3.	3D Printer – Washing/Curing Machine	Real production	Printing of 3D parts/products	1
4.	CNC (CO2) Laser with rotating axis	Real production	Laser cutting and engraving	1
5.	CNC Routers	Real production	Production of parts (mainly wood and Plexiglas)	2
6.	Warehouse for parts	Didactical	Storage of 3D printed parts.	1
7.	Supermarket	Didactical	Storage of 3D printed parts.	1
8.	Andon System	Didactical	Reporting and management problems/issues in the production.	1
9.	Manual assembly station	Didactical	Assembly of products	1
10.	Poka Yoke assembly station	Didactical	Poka Yoke-aided assembly of products	1
11.	Ergonomic working station	Didactical	Ergonomic workplace of the operator and ergonomic KPI measurement	1
12.	Transporter	Didactical	Transport of the finished product	1
13.	2D camera for machine vision	Didactical	Quality control of the product	1
14.	SCARA robot	Didactical	Sorting of the products depending on their quality (good or bad)	1
15.	Kanban storage	Didactical	Kanban storage of parts/products	1

Remark: This is the core list of equipment and teaching aids for the Lean Management study program. Additional equipment and aids from the Faculty of Mechanical Engineering can be available if necessary.

 Table 11.2 List of IT - technical resources (by type, number and purpose) for performing the activity that corresponds to the norms and standards for performing higher education activity

Order No.	Information - technical resources	Kind	Purpose	Number
1.	DELL Inspiron 5567 i5	ICT	Educational, scientific – research work	12
2.	Solid works SW EDU	ICT	Educational, scientific – research work	150
3.	Video beam	ICT	Educational, scientific – research work	2
4.	Data storage HAC	ICT	Educational, scientific – research work	1

5.	Dell isnpiron 5767 7500 u	ICT	Educational, scientific – research work	1
6.	prinetrs	ІСТ	Educational, scientific – research work	1
7.	SW LCA	ICT	Educational, scientific – research work	1
8	Personal computers WS FSC celsius W57	ICT	Educational, scientific – research work	29
9	Personal computers WS FSC celsius W57	ICT	Educational, scientific – research work	30
10	PC FSC FUJITSU ESPRIMO Q957	ICT	Educational, scientific – research work	50
11	Video beam	ICT	Educational, scientific – research work	13
12	USG Gateway PRO/USG Unifi Security PRO	ICT	Educational, scientific – research work	1
13	PC FSC FUJITSU ESPRIMO Q597 s26361-k012- v400	ICT	Educational, scientific – research work	1
14	PC FSC FUJITSU ESPRIMO Q957	ICT	Educational, scientific – research work	3
15	Video beam	ICT	Educational, scientific – research work	1
16	USG Gateway PRO/USG Unifi Security PRO	ICT	Educational, scientific – research work	1
17	PC FSC FUJITSU ESPRIMO Q597 s26361-k012-v400	ICT	Educational, scientific – research work	1
18	MONITOR AOC LED 21.5 I2281FWH	ICT	Educational, scientific – research work	1
19	Професионален софтвер ADAMS, CAD, FLUENT, LAB WINDOWS Ideas, Nisa, Algor, Delphi, Matlab, CATIA, SOLID, SIEMENS (NX, Technomatix, Teamcenter,), Solidworks, Autodesk Inventor, ArtCAM, X3 Medical V6, RapidWorks и други;	ICT	Educational, scientific – research work	1

Remark: This is the core list of IT - technical resources for the Lean Management study program. Additional IT - technical resources from the Faculty of Mechanical Engineering can be available if necessary.

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1 2 . Information on the number of students (enrolled for the first time) of the study program in the period since the last accreditation

Table 12.1. Overview of the number of students enrolled (for the first time) in the study program in the period of the last accreditation and the number of students for whom accreditation was obtained

	Academic year	Number of students for whom accreditation was obtained	Number of students enrolled in the first year
1.	2023/2024	20	3
2.	2022/2023	20	2
3.	2021/2022	20	1
4.	2020/2021	20	5
5.	2019/2020	20	1
	Total Enrolled Students		11

Table 12.2. Number of students for whom accreditation has been obtained or enrolled students in study programs, within the unit of the university where it belongs.

Ord. number	Title of study program	Number of students for whom accreditation was obtained	Number of students enrolled in the first year
	First cycle of studies		
1	Production engineering (in Macedonian language Производно инженерство)		16
2	Automation and control systems (in Macedonian Автоматизација и управувачки системи)		6
3	Thermal Power Engineering (in Macedonian Термичко енергетско инженерство)		8
4	Hydraulic Power Engineering (in Macedonian Хидраулично енергетско инженерство)		0
6	Industrial Engineering and Management (in Macedonian Индустриско инженерство и менаџмент)		31
7	Motor vehicles, transport and mechanization (in Macedonian Моторни возила, транспорт и механизација)		33
8	Energy and ecology (in Macedonian Енергетика и екологија)		12
9	Mechatronics (in Macedonian Мехатроника)		32
10	Industrial design (in Macedonian Индустриски дизајн)		49
11	Materials, processes and innovations (in Macedonian Материјали, процеси и иновации)		6
	Second cycle of studies		

1	Avtomatics and Fluid Engineering (in Macedonian Автоматика и флуидно инженерство)	20	2
2	Advanced production systems and technologies (in Macedonian Напредни производни системи и технологии)	20	
3	Transport, mechanization and logistics (in Macedonian Транспорт, механизација и логистика)	20	
4	Materials, Welding and Structural Engineering (in Macedonian Материјали, заварување и конструктивно инженерство)	20	1
5	Thermal engineering (in Macedonian Термичко инженерство)	20	
6	Mechatronics (in Macedonian Мехатроника)	20	1
7	Mechanics and machine systems (in Macedonian Механика и машински системи)	20	
8	Motor vehicles (in Macedonian Моторни возила)	20	1
9	And industrial design (in Macedonian Индустриски дизајн)	20	2
10	And industrial design and marketing (in Macedonian Индустриски дизајн и маркетинг)	20	
11	And industrial engineering and management (in Macedonian Индустриско инженерство и менаџмент)	20	6
12	Energy and ecology (in Macedonian Енергетика и екологија)	20	4
13	Modeling and simulation of plastic deformation technologies and processes	20	
14	Lean management	20	3
15	Virtual manufacturing engineering	20	2
16	Sustainable energy and environment	20	
17	Product life cycle management (in Macedonian Менаџмент на животен циклус на производ)	20	
18	Management and quality control (in Macedonian Менаџмент и контрола на квалитет)	20	1
19	Management of occupational health and safety systems (in Macedonian Управување со системи за безбедност и здравје при работа)	20	
	Third cycle of studies		
1	Mechanical engineering (in Macedonian Машинство)		3
2	Industrial Engineering and Management (in Macedonian Индустриско инженерство и менаџмент)	0 (no available mentors)	
	In total		219

 Table 12.3
 Number of students required by (re)accreditation according to the net area available to the unit for the realization of study programs

Α	В	C	G
Total area available to the unit in ^{m2} (Table 10)	Total number of students for whom accreditation was obtained or students enrolled in all accredited study programs (Table 12.2)	Number of students requested for (re)accreditation of a new study program	Net area in m ² per student (B+C)/A=
9918	1300	20	7.51 m2

12.1 Students with special needs in accordance with Article 3 6 of the Rulebook on Norms and Standards for the Establishment of Higher Education Institutions and Performing Higher Education Activities (Official Gazette of the Republic of North Macedonia No. 245/22)

Table 12.4. Conditions that the higher education institution should provide for students with special needs.

	Conditions	Description (if it does not exist, it is left blank or planning is offered)
1.	Unhindered access to the facility	yes
2	Elevator	2
3	Special places in the classroom	yes
4	Electronic aids	1

13 . Information on scientific research and publishing activity in accordance with Article 18 of the Rulebook on Norms and Standards for the Establishment of Higher Education Institutions and Performing Higher Education Activity (Official Gazette of the Republic of North Macedonia No. 245/22)

Scientific and research activities supported by the Ss Cyril and Methodius University in Skopje

Link: <u>https://www.ukim.edu.mk/mk_content.php?meni=146&glavno=41</u>

Support for publishing electronic books Links:

https://www.ukim.edu.mk/dokumenti m/Konkurs za e izdastvo-2023-2024.pdf

Internal financial mechanism supported by the Faculty of mechanical engineering - Skopje

https://www.mf.ukim.edu.mk/mk/%D0%B0%D0%BA%D1%82%D0%B8

14 . Library and information on compulsory and additional literature provided Article 37 of the Rulebook on Norms and Standards for the Establishment of Higher Education Institutions and Performing Higher Education Activities (Official Gazette of the Republic of North Macedonia No. 245/22)

Ord.	Type of literature	noted in Appendix	3		Number of	Electronic
No.	Author	Title Publisher Year samples	format (Pdf,			
Instru	ction Materials (Rec	uired Readings)			Samples	word , etc.) ⁴
1.	R. Minovski at all.,	Lean Management	Seminar materials in scope of the InComSMEs project	2018		
2.	J. Womack, D. Jones	Lean Thinking	Free Press	2000		
3.	L. Wilson	How to implement Lean Manufacturing	McGraw Hill	2010		
4.	Javier Santos, Richard Wysk, Jose Manuel Torres	Improving Production with Lean Thinking	Willy and Sons	2006		
5.	Polenakovikj R.	Development of human resources (internal textbook)	FME, UKIM	2010		
6.	Carolina Machado, J. Paulo Davim	Organizational Behaviour and Human Resource Management	Springer	2018	20	43
7.	Sterman, J.D.	Business Dynamics, Systems Thinking and Modeling for a Complex World	McGrew Hill Higher Education, USA	2004		
8.	Stewart Robinson	Simulation: The Practice of Model Development and Use, 2nd ed.	John Wiley & Sons	2014		
9.	Javier Villalba- Diez	The Hoshin Kanri Forest: Lean Strategic Organizational Design	Productivity Press	2017		
10.	Richard M. Burton, Børge Obel, Dorthe Døjbak Håkonsson	Organizational Design: A Step- by-Step Approach 4th Edition	Cambridge University Press;	2020		
11.	n.n.	Quality management	International Organization	2015		

Table 14.1. List of mandator	y literature and the number of samples
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⁴ In the column, write / mark the total number of mandatory and additional literature for which the unit has an electronic version, through access to an electronic library

		systems - Requirements (ISO 9001:2015)	for Standardization		
12.	Walpole R.E., Myers R.H., Myers S.L., Ye K.	Probability & Statistics for Engineering & Scientists	Prentice Hall	2007	1
13.	J.P. Marques de Sa	Applied Statistics using SPSS, STATISTICA and MATLAB	Springer- Verlag	2013	1
14.	Tuneski, N.	Problems in probability and statistics, in progress. (in Macedonian)	MFS	2010	
15.	Meade D.	Financial Models and Tools for Managing Lean	T&F Publ.	2012	-
16.	Blank S, Ries E.	Introduction to Lean Financial Model	AW- Pub.Comp.	2016	
17.	Parmenter D.	Lean Practices to Transform Financial Results	Elsevier	2018	
18.	Michael Balle and Daniel Jones	The Lean Strategy: Using Lean to Create Competitive Advantage, Unleash Innovation, and Deliver Sustainable Growth	McGraw-Hill Education; 1 edition	2017	
19.	Paul Myerson	Lean Supply Chain and Logistics Management	McGraw-Hill Education; 1 edition	2012	
20.	James P. Womack and Daniel T. Jones	Lean Thinking: Banish Waste and Create Wealth in Your Corporation	Free Press; 2 nd edition	2010	
21.	UNIDO	Cleaner production technologies: Low Carbon economy	UN press	2014	
22.	David Mann	Creating a Lean Culture	Routledge; 3 rd edition	2014	
23.	J.Chaloska	Workplace safety management	Internal book, MFS	2017	
24.	Roger L. Brauer	Safety and Health for Engineers	John Wiley and Sons	2016	
25.	Benjamin O. Alli	Fundamental principles of occupational health and safety	ILO	2011	
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26.	Donev V	Maintenance Management	System +	2010	
27.	Joel Levitt	Lean Maintenance	Industrial Press, Inc.;	2008	
28.	Gligorche Vrtanoski	Unauthorized lectures of the Methods and Techniques of TQM	Faculty of Mechanical Engineering	2018	
29.	Stephen George, Arnold Weimerskirch	Total Quality Management - Strategies and Techniques	John Wilye & Sons	1998	
30.	John Oakland	TQM Text with Cases	Butterworth Heinemann	2003	
31.	J. Chaloska	Ergonomic systems	Internal book, MFS	2017]
32.	R.S. Bridger	Introduction to Ergonomics	Taylor &Francis	2008	1
33.	J. Chaloska	Ergonomic systems	Internal book, MFS	2017	
34.	Multiple authors edited by Arzu Şencan Şahin	Modeling and Optimization of Renewable Energy Systems	Intech	2012	
35.	Walter Short, Daniel J. Packey, and Thomas Holt	A Manual for the Economic Evaluation of Energy Efficiency and Renewable Energy Technologies	National Renewable Energy Laboratory	2005	
36.	Jefferson W. Tester, Elisabeth M. Drake, Michael J. Driscoll, Michael W. Golay	Sustainable energy: choosing among options	Ars Lamina	2012	
37.	Polenakovikj R., Jovanovski B.	Project management (Internal textbook)	FME, UKIM	2019	
38.	Different authors	Selected, contemporary (case studies, videos, Journal papers, presentations, etc. in different subjects	/	1	
Supp	lemental Instruction	Materials (Additiona	l Literature)		-
39.	John Nicholas	Lean Production for Competitive	CRC Press	2018	

	1		1	
		Advantage		
40.	Gary Dessler	Human Resource Management (16th edition)	Pearson	2020
41.	Debra Patterson	Human Resource Management	Open Library	2023
42.	J. Haden	The Motivation Myth: How High Achievers Really Set Themselves Up to Win	Portfolio	2018
43.	Manuel Laguna Johan Marklund	Business Process Modeling, Simulation and Design	Prentice Hall	2023
44.	Jerry Banks	Handbook of simulation	John Wiley & Sons	1998
45.	Donald L. Anderson	Organization Design: Creating Strategic & Agile Organizations	SAGE Publications	2018
46.	Jez Humble , Joanne Molesky	Lean Enterprise: How High Performance Organizations Innovate at Scale	O'Reilly Media	2020
47.	Micklewright, Mike	Lean ISO 9001, Adding Spark to your ISO 9001 QMS and Sustainability to your Lean Efforts	American Society for Quality, Quality Press	2010
48.	Mendenhal W., Sincich T.	Statistics for Engineering and the Sciences	Maxwel Macmillan	2015
49.	Anderson D.	Engineering to Rapidly Develop Low-Cost, High- Quality Products for Lean Production	CRC Press, T&F	2018
50.	Leyborn E.	Directing the Agile Organization: A Lean Approach To Business Management	IT Publishing	2013
51.	Jason Little	Lean Change Management: Innovative practices for managing organizational change	Happy Melly Express; 2 nd edition	October 8, 2014

52.	Don P. Clausing	Total Quality Development: A Step-By-Step Guide to World-Class Concurrent Engineering (ASME Press series on international advances in design productivity)	Amer Society of Mechanical	April 1, 1994	
53.	Erik Young	The Power of Lean Process: Increase Profits, Delight Customers and Improve Your Company's Culture	McGraw-Hill Education;	2014	
54.	James Reason	Managing the Risks of Organizational Accidents	Ashgate Publishing	2015	
55.	K. Peng	Equipment Management in the Post- Maintenance Era: A New Alternative to Total Productive Maintenance (TPM)	Productivity Press	2021	
56.	M. Stephens	Productivity and Reliability-Based Maintenance Management	Purdue University Press	2022	
57.	Agustiady, Tina Kanti; Cudney, Elizabeth A	TPM: strategies and implementation guide	CRC Press	2016	
58.	Fiorenzo Franceschini	Advanced Quality Function Deployment	ST. Lucie Press	2002	
59.	Tauseef Aized	Total Quality Management and Six Sigma	InTech	2012	
60.	Graeme Knowles	Quality Management	Bookboon.com	2011	
61.	Scott Openshaw, Erin Taylor	Ergonomics and Design	Allsteel Inc.	2006	
62.	J. Gido, J. Clements	Successful Project Management (7th ed.)	Cengage Learning	2017	

63.	Project Management Institute	A Guide to the Project Management Body of Knowledge (PMBOK(R) Guide-Sixth Edition / Agile Practice Guide Bundle (Pmbok Guide)	Project Management Institute	2021		
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15. Website Information (Article 21 of the Law on Higher Education (Official Gazette of the Republic of North Macedonia No. 82/18) and Article 18 of the Rulebook on Standards and Norms for the Establishment of Higher Education Institutions and Performing Higher Education Activities (Official Gazette of the Republic of North Macedonia No. 245/22) **)**

15.1. Public in the work of the higher education institution

Table 15. Available and published information about the work of the higher education institution and the study program that is subject to re/accreditation

Ord. No.	Type of information published	Link
1.	The statute of the unit (with all amendments and additions) and other acts regulating internal relations	https://www.mf.ukim.edu.mk/sites/default/files/Statut%20na%20MFS%20- %20Univerzitetski%20glasnik%20465.pdf
2.	Study programs	https://www.mf.ukim.edu.mk/mk/poslediplomski-studii-full-time-studii
3.	The report of the last self-evaluation	https://www.mf.ukim.edu.mk/mk/%D0%B0%D0%BA%D1%82%D0%B8
4.	The solution for the accreditation of each study program separately and the solution for starting work for each study program separately	https://www.mf.ukim.edu.mk/mk/node/1585
5.	The act of systematization	https://www.mf.ukim.edu.mk/mk/%D0%B0%D0%BA%D1%82%D0%B8
6.	The rules for the work of the teaching-scientific, that is, the scientific council	https://www.mf.ukim.edu.mk/mk/%D0%B0%D0%BA%D1%82%D0%B8
7.	Report and decision on final selection in title for each teacher and associate published in the Bulletin	https://www.mf.ukim.edu.mk/mk/redovni-profesori https://www.mf.ukim.edu.mk/mk/vonredni-profesori https://www.mf.ukim.edu.mk/mk/docenti https://www.mf.ukim.edu.mk/mk/asistenti
8.	The schedule of work tasks	https://www.mf.ukim.edu.mk/
9.	Accepted topics for master's /doctoral theses	https://www.mf.ukim.edu.mk/mk/node/1381
10.	Acts carried by the unit according to other laws	https://www.mf.ukim.edu.mk/mk/%D0%B0%D0%BA%D1%82%D0%B8
11.	The code of ethics	https://www.ukim.edu.mk/dokumenti m/248 Eticki kodeks.pdf

16. Activities and mechanisms through which the quality of teaching is developed and maintained

Internal mechanisms for ensuring and controlling the quality of studies:

- the development of teaching contents,
- the implementation of the teaching process,
- the assessment of students,
- the preparation of a graduation thesis,

- assessment of the quality of teaching by students with surveys at the end of each semester for each subject,

- evaluation of the quality of the study program by the students during the awarding of the diploma,
- other procedures related to the resources and logistics of the teaching process,
- conducting an internal evaluation (self-evaluation).

Self-evaluation is carried out as a process of self-evaluation at the level of study programs, as well as self-evaluation at the level of the entire Faculty.

The self-evaluation is carried out by a commission formed by the Teaching and Research Council, consisting of seven members, five of whom are teachers and two members are students.

Segments of the self-evaluation expressed through SWOT analysis: SWOT analysis of the first cycle studies, SWOT analysis of the second cycle studies, SWOT analysis of the third cycle studies, SWOT analysis of the teaching and associate staff, SWOT analysis for spatial and material resources, SWOT analysis for the logistics of the Faculty of Engineering - Skopje, SWOT analysis for the international cooperation of the Faculty of Engineering - Skopje, SWOT analysis for the scientific research activity, SWOT analysis for funding.

Self-evaluation report, for the period 2017-2020, link: https://bit.ly/3oNPAWJ

The quality of the studies is controlled in accordance with the valid legal and by-laws as well as with the acts of the University and the Faculty.

17. Results of the performed self-evaluation according to the Guidelines for the unique bases of the evaluation and evaluation procedures of the universities adopted by the agency for the evaluation of higher education in the Republic of Macedonia and by the Interuniversity Conference of the Republic of Macedonia (Skopje-Bitola, September 2002).

Link: https://www.mf.ukim.edu.mk/mk/%D0%B0%D0%BA%D1%82%D0%B8

1 8 . The adequacy of the structure and content of the cycle of studies with the general and specific descriptors

	General descriptors	Subjects through which
A specific	Description	achievement of the general
descriptor		descriptors is ensured
Knowledge and understanding	Understanding the basics of Lean (principles, wastes, etc.);	Lean Thinking

OB.1

	Understanding the role of the people in Lean;	
	Knowledge of process modeling;	Lean Thinking Applied Modelling and Simulation in Business Processes
	Knowledge of process analyses and continuous improvement and certain Lean tools;	Lean Tools 1 Lean Tools 2
	Understanding the influence of relevant fields on successful Lean implementation.	Motivation and Creative Teams Organisational Design – Lean Approach Design of Quality Management Systems Lean Project Applied Statistics Economical Aspect of Lean Lean & Other Approaches Workplace Safety Management Total Productivity Maintenance TQM Ergonomic Systems Energy economics Project Cycle Management
Application of knowledge and understanding	Ability to model real processes; Capable of generating variant solutions; Ability to implement practical solutions in Lean Management; Ability to implement some of the most important Lean tools in real environment;	Lean Thinking Lean Tools 1 Lean Tools 2
	Ability to implement certain aspects of some influential fields on Lean (like Team Work, Modelling and Simulation, Organizational Design, Quality Management Systems and TQM, Statistics, Workplace Safety Management, Maintenance (TPM), Green aspects, etc.) in real environment.	Motivation and Creative Teams Applied Modelling and Simulation in Business Processes Organizational Design – Lean Approach Design of Quality Management Systems Lean Project Applied Statistics Economical Aspect of Lean Lean & Other Approaches Workplace Safety Management Total Productivity Maintenance TQM Ergonomic Systems Energy economics Project Cycle Management
Assessment ability	Ability to assess the performance of real processes:	Lean Thinking Lean Tools 1
-	,	Lean Tools 2

	Ability to evaluate the implementation of Lean aspects (principles, analysis of wastes, etc.).in real environment; Ability to assess the potential for implementation of certain Lean tools in real environment; Ability to assess the level of organizational culture	Lean Tools 1 Lean Tools 2 Lean Project Motivation and Creative Teams
	Ability to evaluate the possibility for implementation of certain aspects of some influential fields on Lean (like Team Work, Modelling and Simulation, Organizational Design, Quality Management Systems and TQM, Statistics, Workplace Safety Management, Maintenance (TPM), Green aspects, etc.) in real environment.	Organizational Design – Lean Approach Motivation and Creative Teams Applied Modelling and Simulation in Business Processes Design of Quality Management Systems Lean Project Applied Statistics Economical Aspect of Lean Lean & Other Approaches Workplace Safety Management Total Productivity Maintenance TQM Ergonomic Systems Energy economics Project Cycle Management
Communication skills	Has ability for engineering and scientific communication through the preparation of reports, analyses, professional and scientific papers;	Most of the subjects, but primarily in Lean Thinking Lean Tools 1 Lean Tools 2 Lean Project
Study skills	Able to analyze and improve certain processes in regard to Lean Management; Can develop creativity, analytical work and flexibility in the process of learning; Able to practice different soft skills in relationship with Lean Management.	Most of the subjects, but primarily in Lean Thinking Lean Tools 1 Lean Tools 2 Lean Project

	Specific descriptors	Subjects through which the
A specific descriptor	Description	achievement of the specific descriptors is ensured
Knowledge and understanding	Understanding the origin of Lean; Understanding the importance of Lean; Detecting the prerequisites of Lean implementation; Knowledge of process modeling – methods and approaches; Knowledge of Lean principles and their implementation; Knowledge of Lean wastes, their detection and tools for handling them; Knowledge of Lean House;	Lean Thinking Lean Tools 1 Lean Tools 2

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	Detailed knowledge for implementation of the most important and the most frequently used Lean tools, like 5S, Value Stream Mapping, etc.;	Lean Tools 1 Lean Tools 2
	Knowledge for implementation of small-scale Lean projects;	Lean Project
	Understanding the influence of relevant fields on successful Lean implementation, like Team Work, Modelling and Simulation, Organizational Design, Quality Management Systems and TQM, Statistics, Workplace Safety Management, Maintenance (TPM), Green aspects, etc.	Motivation and Creative Teams Applied Modelling and Simulation in Business Processes Organizational Design – Lean Approach Design of Quality Management Systems Lean Project Applied Statistics Economical Aspect of Lean Lean & Other Approaches Workplace Safety Management Total Productivity Maintenance TQM Ergonomic Systems Energy economics Project Cycle Management
Application of knowledge and understanding	Ability to model real processes;	Lean Thinking Lean Project Simulation in Business Processes
	Ability to evaluate the basic prerequisites of Lean implementation in certain surrounding; Ability to evaluate the implementation of Lean principles in real environment; Ability to detect the Lean wastes in real environment;	Lean Thinking Lean Tools 1 Lean Tools 2
	Ability to implement the some of the most important Lean tools (like 5S, Value Stream Mapping, etc.) in real environment;	Lean Tools 1 Lean Tools 2 Lean Project
	Ability to implement certain aspects of some influential fields on Lean (like Team Work, Modelling and Simulation, Organizational Design, Quality Management Systems and TQM, Statistics, Workplace Safety Management, Maintenance (TPM), Green aspects, etc.) in real environment.	Motivation and Creative Teams Applied Modelling and Simulation in Business Processes Organizational Design – Lean Approach Design of Quality Management Systems Lean Project

		Economical Aspect of Lean Lean & Other Approaches Workplace Safety Management Total Productivity Maintenance TQM Ergonomic Systems Energy economics Project Cycle Management
Assessment ability	Ability to assess the performance of real processes;	Lean Thinking Lean Project Simulation in Business Processes
	Ability to evaluate the implementation of Lean principles in real environment;	Lean Thinking Lean Tools 1 Lean Tools 2
	Ability to assess the organizational culture in real environment;	Organizational Design – Lean Approach
	Ability to evaluate the level of Lean in real organization;	Lean Thinking
	Ability to assess the potential for implementation of certain Lean tools in real environment;	Lean Tools 1 Lean Tools 2 Lean Project
Communication	Ability to evaluate the possibility for implementation of certain aspects of some influential fields on Lean (like Team Work, Modelling and Simulation, Organizational Design, Quality Management Systems and TQM, Statistics, Workplace Safety Management, Maintenance (TPM), Green aspects, etc.) in real environment.	Motivation and Creative Teams Applied Modelling and Simulation in Business Processes Organizational Design – Lean Approach Design of Quality Management Systems Lean Project Applied Statistics Economical Aspect of Lean Lean & Other Approaches Workplace Safety Management Total Productivity Maintenance TQM Ergonomic Systems Energy economics Project Cycle Management
skills	Ability to rengineering and scientific communication through the preparation of reports, analyses, professional and scientific papers; Ability to work in team.	primarily in Lean Thinking Lean Tools 1 Lean Tools 2 Lean Project
Study skills	Able to analyze and improve certain processes in regard to Lean Management; Can develop creativity, analytical work and flexibility in the process of learning;	Most of the subjects, but primarily in Lean Thinking Lean Tools 1

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Can be able to see the bigger picture; Can practice scientific research work; Can work in teams; Can manage the time;	Lean Tools 2 Lean Project
Can manage the time; Able to present the work.	

19. Compliance of theoretical and practical teaching with the objectives of the study program

Table 19. List of institutions with which the higher education institution has concluded an agreement for practical teaching in the study area of the study program for which accreditation is requested

Ord. number	Name of institution	Way of performing practical teaching	Estimated time for realization of practical teaching
1.	IGM Trade		
2.	OKTA		
3.	TE -TO AD Skopje		
4.	Eco Vent DOOEL		
5.	Ad ESM		

20 . Compliance of the study program with the single European area for higher education and comparability with the programs of European higher education institutions

compliance of the study program with the single European area for higher education and comparability with the programs of European higher education institutions **is confirmed.**

	Name of institution	Name of study program with which comparability is ensured	Link to the study program
1.	University of Wales Trinity Saint David	Lean and Agile Operations	Lean and Agile Operations (MSc) UWTSD
2.	TU Graz, Graz University of Technology	Lean Management in Civil Engineering	University Programme in Lean Management in Civil Engineering - TU Graz
3.	Montpellier Business School	MSc in Lean Operations Management	MSc in Lean Operations Management at Montpellier Business School mba

21. Rules governing the writing of written exams, assignments, essays, term papers, projects, graduate work, master's thesis and other activities that are performed in writing, which include at least content, scope, writing style and other relevant requirements.

LINK: <u>https://www.mf.ukim.edu.mk/sites/default/files/Glasnik-637%20-</u>20Pravila%20za%20studiranje.pdf

22. Information on provided quality financial guarantee for the study program⁵

 Table 21. The value of the financial guarantee

⁵ They fill private higher education institutions and higher vocational schools

Value of the attached bank guarantee	Tuition amount that the student pays when enrolling in the study program	Total number of students enrolled at a higher education institution (university or vocational school)	Number of students for whom accreditation is sought			
N/A						

23. Data on teachers who can be mentors of a master's thesis of the second cycle of academic/professional studies of the study program LEAN MANAGMENT

Table 22 . A review of teachers who can be mentors of a master's thesis in the second cycle of studies

Ord. No.	Name and surname of the teacher	Teaching-scientific, teaching or scientific title in which the teacher is selected	Scientific field in which he was selected	A scientific field in which the teacher can be a master's thesis mentor related to the scientific field of the study program
1.	Robert Minovski	Full Professor	211 Industrial Engineering and Management	
2	Bojan Jovanoski	Associate professor	21108 Industrial dynamic	
3.	Gligorche Vrtanoski	Full Professor	21403 Production Engineering, technologies and systems	
4.	Igor Seso	Associate professor	20505 Unconventional energy sources and technologies	
5	Jasmina Chaloska	Full Professor	21403 Production Engineering, tecnologies and systems 21105 Organization of technological processes	scientific research fields specified in point 2, according
6	Mirko Petrushevski	Associate professor	10900 Mathematics	to the studied
7	Nikola Tuneski	Full Professor	11000 Informatics 10900 Mathematics	study program, as
8	Radmil Polenakovikj	Full Professor	21100 Methods of analysis of the structure and the functioning of the enterprise 21108 Industrial dynamic	correspond to the studied subject programs in the
9	Atanas Kochov	Full Professor	21403 Production Engineering, tecnologies and systems 21105 Organization of technological processes	belong to scientific research fields that are not specified in
10	Trajce Velkovski	Assistant professor	21103 Analysis of the work environment and work safety factors	
11	Valentina Gecevska	Full Professor	21403 Production Engineering, tecnologies and systems 21105 Organization of technological processes	

DOCUMENT

1. Proposal Decision for the adoption of the study program by the Teaching and Scientific Council of the faculty, the teaching council of the higher professional school or the scientific council of the scientific institute Article 110 and Article 145 of the Law on Higher Education ("Official Gazette of the Republic of Macedonia" No. 82/2018)

Машински факултет Број 02-1805/7 7.12.2023 Скопје

Врз основа на член 110 од Законот за високото образование (Службен весник на РСМ бр.82/18), член 69 од Статутот на Машинскиот факултет во Скопје во состав на Универзитетот "Св. Кирил и Методиј" во Скопје (Универзитетски гласник број 465/2019 и 635/2022), како и врз основа на поднесениот предлог Елаборат за акредитација на Студиска програма од втор циклус на академски студии по Lean management, Наставно- научниот совет на Факултетот на седницата одржана на 7.12.2023 година, ја донесе следната:

ПРЕДЛОГ ОДЛУКА

за усвојување на студиска програма за втор циклус на академски студии по Lean management

Член 1

Се усвојува Елаборатот на Студиската програма Lean management на втор циклус на академски студии во рамките на Машински Факултет во Скопје.

Член 2

Наставата, од Студиската програма Lean management ќе започне да се изведува по добивањето согласност од Одборот за акредитација на високообразовните установи и по добивањето на согласност за исполнетост на условите за почеток со работа на студиската програма од страна на Агенцијата за квалитет на високото образование на Република Северна Македонија.

Член 3

Предлог Одлуката да се достави до Ректорска управа и Универзитетскиот Сенат за усвојување на Студиската програма по Lean management.

Член 4

Составен дел на оваа одлука е Елаборатот на Студиската програма Lean management.

Член 5

Оваа Одлука влегува во сила со денот на нејзиното донесување.

Универзитетот "Св. Кирил и Методиј" во Скопје, Машински факултет - Скопје Дскан

Проф. д-р Злятко Петрески М.П.

Доставено до:

Архивата на Машински факултет;

- Универзитетскиот сенат на Универзитет "Св. Кирил и Методиј" во Скопје

- Наставно-научен совет

- Елаборат





Универзитет "Св. Кирил и Методиј" во Скопје Ss. Cyril and MethodiusUniversity in Skopje **Одлука од УС** Ознака: **ОБ 5.5/13** Страна: 1 од 1

Бр. 02-181/24 30.1.2024 година Скопје

Република Северна Македонија Универзијет "СБ. КИРИА И МЕТОДИЈ"-СКОПЈе МАШИМСКИ ФАКУЛТЕТ СКОПЈЕ						
Примено:	30-0	1- 2024				
Орг.Един.	Број:	Прилог:	Вредност:			
20	1761	12				

Врз основа на член 94, став 1, точка 3 од Законот за високото образование (Службен весник на Република Македонија бр. 82/2018 и Службен весник на Република Северна Македонија бр. 178/2021) и член 157, став 1, точка 8 од Статутот на Универзитетот "Св. Кирил и Методиј" во Скопје (Универзитетски гласник бр. 425/2019), по предлог на Наставно-научниот совет на Машинскиот факултет, Универзитетскиот сенат на Универзитетот "Св. Кирил и Методиј" во Скопје, на 6. седница одржана на 30.1.2024 година, донесе

ОДЛУКА

за усвојување на Елаборатот за студиската програма од втор циклус, едногодишни студии по Lean management на Машинскиот факултет во Скопје

Член 1

Се усвојува Елаборатот за студиската програма од втор циклус, едногодишни студии по *Lean management* на **Машинскиот факултет во Скопје.**

Член 2

Наставата од студиската програма од втор циклус, едногодишни студии по Lean management, ќе започне да се изведува по добивањето согласност од Одборот за акредитација на високото образование и по добивањето согласност за исполнување на условите за почеток со работа на студиската програма од страна на Агенцијата за квалитет на високото образование на Република Северна Македонија.

Член 3

Одлуката се доставува до предлагачот и до Одборот за акредитација на високото образование на натамошна постапка за акредитација на студиската програма.

Член 4

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



3. Opinion of the Board for cooperation and trust with the public

Машински факултет Број 02-1805/9 11.12.2023 Скопје

Врз основа на член 122 од Законот за високото образование (Сл. Весник бр. 82/2018 и 178/2021) и член 93 од Статутот на Машински факултет во состав на Универзитетот "Св. Кирил и Методиј)" во Скопје (Универзитетски гласник бр. 465/2019 и 635/2022), Одборот за соработка и доверба со јавноста при Машинскиот факултет во Скопје, на 4-та седница одржана на 11.12.2023 година, го донесе

мислење

Се дава позитивно мислење за Елаборатот за Студиската програма Lean management на втор циклус на академски студии на Машинскиот факултет во Скопје во состав на Универзитетот "Св. Кирил и Методиј" во Скопје

Образложение

Одборот за соработка и доверба со јавноста на Машинскиот факултет во Скопје го разгледа Елаборатот на Студиската програма Lean management и донесе заклучок дека предложената студиска програма за акредитација е во согласност со модерниот развој на науката и потребите на индустријата и се очекува да оспособи високостручни кадри од соодветната област.

Поради сето тоа Одборот за соработка и доверба со јавноста на Машинскиот факултет во Скопје го даде своето позитивно мислење.

Одбор на Одборот за соработка со јавноста

Претседател проф. д-р Добре Рунчев

Доставено до:

- Архивата на Машински факултет;
- Универзитетскиот сенат на Универзитет "Св. Кирил и Методиј" во Скопје
- ОДСЈ

- Елаборат

4. Statement from the teacher for giving consent to participate in the teaching of certain subjects from the study program

On the basis of Article 61 paragraph 1 point 4 of the Law on Higher Education (Official Gazette of the Republic of Macedonia, no. 82/2018), I give the following

Република Северна Македонија УНИВЕРЗИТЕТ "СВ. КИРИЛ И МЕТОДИЈ"-СКОПЈЕ МАШИНСКИ ФАКУЛТЕТ Б.9. 08 - 16.20 /2 0 3 - 11- 2023 20 _ год. 0 К О П Ј Е

Елаборат за акредитирање на студиска програма од втор циклус

4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по

Lean management

Јас, Мирко Петрушевски, избран во звање вонреден професор и вработен на Машински факултет во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма <u>Lean management</u> на Машинскиот факултет во Скопје, по наставните предмети:

1. Одбрани поглавја од математика и информатика

Скопје, 6.11.2023

Подносител на изјава

On the basis of Article 61 paragraph 1 point 4 of the Law on Higher Education (Official Gazette of the Republic of Macedonia, no. 82/2018), I give the following

STATEMENT

For giving consent to participate in the teaching of the certain subjects/course from the study program of the second cycle of academic studies in

LEAN MANAGEMENT

I <u>Prof d-r Atanas Kochov</u>, elected to the title of full time professor at the Ss Cyril and Methodius University in Skopje, Faculty of mechanical engineering – Skopje, give my consent to participate in teaching from the study program LEAN MANAGEMENT of the Faculty for the following courses:

1. LEAN AND OTHER APPROACHES

Skopje, November 5th 2023

Statement submitted by

Prof d-r Atanas Kochov

Ропублика Северна Македонија Умиверзитет "СВ. КИРИА И Методиј"-сколје МАШИНСКИ ФАКУЛТЕТ Бр. 08-1620/3 21.11. 2023 год.

Елаборат за акредитирање на студиска програма од втор циклус

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по Lean Management

Јас Игор Шешо, избран во звање вонреден професор и вработен на Машинскиот факултет во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма Lean Management на Машинскиот факултет во Скопје, по наставните предмети:

1. Energy economics

Скопје,

Подносител на изјава

Елаборат за акредитирање на студиска програма од втор циклус

4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по

Lean Management

Јас д-р Глигорче Вртаноски, избран во звање **редовен професор** и вработен на **Машински факултет** во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма **Lean Management** на Машинскиот факултет во Скопје, по наставните предмети:

1. TQM

06.11.2023 г., Скопје,

Подносител на изјава

проф. д-р Глигорче Вртаноски

LAD TO CY

4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по

Lean management

Јас, Никола Тунески, избран во звање редовен професор и вработен на Машински факултет во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма **Lean management** на Машинскиот факултет во Скопје, по наставните предмети:

1. Applied Statistics

Скопје,

Подносител на изјава

4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по

LEAN MANAGEMENT

Јас д-р Јасмина Чалоска, избрана во звање **редовен професор** и вработен на **Машински факултет** во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма **LEAN MANAGEMENT** на Машинскиот факултет во Скопје, по наставните предмети:

- 1. Workplace safety management
- 2. Ergonomic systems

Скопје, 29.11.2023 год.

Подносител на изјава

проф. д-р Јасмина Чалоска

Man

Ропублика Северна Македонија УШКЕРЗИТЕТ *СВ. КИРИЛ И МЕТОДИЈ*СКОПЈЕ**Блаборат за акредитирање на студиска** МАШИНСКИ ФАКУЛТЕТ програма од втор циклус Бр. 08-1620/4 програма од втор циклус 29.11. 2023год.

4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по

Lean Management

Јас д-р Бојан Јованоски, избран во звање вонреден професор и вработен на Машински факултет во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма Lean Management на Машинскиот факултет во Скопје, по наставните предмети:

- 1. Lean Tools 1
- 2. Lean tools 2
- 3. Applied modelling and simulation in business processes
- 4. Lean Project

06.11.2023 г., Скопје,

Подносител на изјава

Вонр. проф. д-р Бојан Јованоски

Jennosey"



ОБ.2 МАШИНСКИ ФЛАРАТЕ Елаборат за акредитирање на студиска програма од втор циклус 29.10.002 год год
 4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма
 Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

Република Северна Македонија

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по

LEAN Maragement

Јас д-р Радмил Поленаковиќ, избран во звање **редовен професор** и вработен на **Машински факултет** во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма **LEAN Management** на Машинскиот факултет во Скопје, по наставните предмети:

- 1. Motivation and creative teams
- 2. Project Cycle Management
- 3. Total Productivity Maintenance
- 4. Organisational design Lean Approach

06.11.2023 г., Скопје,

Подносител на изјава

проф. д-р Радмил Поленаковиќ

torevallen

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ОБ.2 НОГУОЛИКА Северна Македонија ОБ.2 НОГБЕРЗИТЕТ "СЕ. КИРИЛ И МЕТОЛИЈ"-СКОПЈЕ Елаборат за акредитирање на студиска МАШИНСКИ ФАКУЛТЕТ програма од втор циклус Бр. 08 - 1620/10 29.11. 2023год. С К О П Ј Е

4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по

Lean management

Јас д-р Роберт Миновски, избран во звање редовен професор и вработен на Машински факултет во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма Lcan managment на Машинскиот факултет во Скопје, по наставните предмети:

1. Lean Thinking

2. Lean tools 2

3. Design of Quality Management Systems in accordance with ISO 9001

4. Lean project

Подносител на изјава

проф. д-р Роберт Миновски

Bluber

1

Републи з Северна Македонија Предоли з Северна Македонија Предоли за акредитирање на студиска Предоли и студиска програма од втор циклус Бр. 08 – 1620 / 11 29 · 11 · 20 25 год.

4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на втор циклус студии по Lean management

Јас д-р Трајче Велковски, избран во звање **доцент** и вработен на **Машински** факултет во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма Lean managment на Машинскиот факултет во Скопје, по наставните предмети:

- 1. Workplace safety management
- 2. Project Cycle Management
- 3. Lean management
- 4. Motivation and creative teams

Подносител на изјава

доц. д-р Трајче Велковски

AR

Голублика Соверна Македонија УШТОРЗИТЕТ ГОЛ. КИРИА И МЕТОДИЈ-СКОЛЈЕ ОБ.2 ПЛИЈИНСКИ ФАКУЛТЕТ Елаборат за акредитирање на студиска вр. 08 - 162.0 Б програма од втор циклус 2023 год. С К О П Ј Е

4. Изјава од наставникот за давање согласност за учество во изведување на настава по одредени предмети од студиската програма

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, број 82/2018) ја давам следната

ИЗЈАВА

за давање соїласност за учество во изведување на настава йо одредени йредмейи од сидудискайа йроїрама на видор циклус сидудии йо

Lean Management

Јас д-р Валентина Гечевска, избран во звање редовен професор и вработен на Машински факултет во Скопје на Универзитетот "Св. Кирил и Методиј" во Скопје давам согласност за учество во изведување на настава од Студиската програма Индустриско инженерство и менаџмент на Машинскиот факултет во Скопје, по наставните предмети:

1. Economical aspect of Lean (Економски аспекти на Lean)

Скопје, 06.11.2023

Подносител на изјава,

проф. д-р Вадентина Гечевска

APPENDIX NO. 3

1. Subject programs with information in accordance with Article 4 of the Regulation on the content of study programs ("Official Gazette of the Republic of Macedonia", no. 79 /20 23)

Add. 3			Course program for the second level (second cycle – postgraduate)					
1	Course titl	e	Lean Thinking					
2	Code	C	21 FAN01	21 FANOI				
3	Study grou	n(s)	Lean management	Lean management				
<u>ј</u> . Д	The organi	ip(s)	"Ss. Cyril and Met	hodius" Uni	versity	in Skonie	Faculty of	
т.	study prog	ram (unit	Mechanical Engine	ering - Sko	nie	ш экорје,	raculty 01	
	institute d	enartment)	Institute for Manuf	acturing En	oineeri	no and Mar	agement	
5	Level (firs	t second third	second	actaring En	5	ing und total		
	degree)	.,						
6.	Academic	year / semester	academic year	Ι	Seme	ester	I/winter – I/summer	
7	ECTS cred	lits	6					
8.	Professor		Prof. PhD Robert N	Ainovski				
9.	Language		English					
10	Prerequisit	tes for	None					
10.	enrolling t	he course						
11.	Course obj	jectives	The main objective	of the cour	se is to	prepare the	e participants	
	(competen	ces)	understand the gen	eral concept	t of Lea	an Managen	nent through	
			understanding the o	lifferences l	betwee	n the traditi	onal production	
			thinking and Lean	thinking.				
			Additionally, it sho	ould introdu	ce the p	participants	in the roots of the	
			Lean management	and they she	ould be	e able to rec	ognize the wastes in	
			the organization an principles.	d have unde	erstand	ing about pi	cacticing the Lean	
12.	Detailed co	ontent of the	Goals of one profit	oriented or	ganizat	tion. How d	oes Lean contribute	
	course and	units with the	to accomplishing th	nose goals. I	Definit	ion of Lean	. History of Lean and	
	learning re	sults per unit	Toyota Production	System. Le	an Prin	ciples. Und	erstanding the waste.	
			7(8) Types of wast	es. Introduc	tion to	House of L	ean. Methodology for	
			implementation of	Lean. Prere	quisite	s for Lean i	mplementation.	
13	Connection	n with other	/					
1.4	courses			1 .		1 /*	0 1: 11) : .	
14.	Study met	hods	Study methods: Int	eractive lect	ures, te	eam work (1	t applicable) project	
15	T-4-11		assignments $(ECTS = 20 - 190)$	1				
15.	I otal nour	S alt	$6 EC 15 \times 30 = 180$	I contrario (15	1ra v 2)	20 hours	
10.	Lectures/L	au	10.1.	Lectures (15 wee	$\frac{1}{1}$	30 hours	
			16.2.	Lao (stude	in wor	к)	50 nours	
	Project		17.1	Project as	ionme	nte	30 hours	
17	Work/Assi	onments	17.1.	Individual		monto	20 hours	
17.		Ginnents	17.2.	Self-study	assign	ments	50 hours	
18	Drerequisit	tes for taking	Seminar work deliv	ered and anr	roved		00 110013	
10	the final ex	kam	Seminar work denv	ered and app	noveu			
19	Points / M	arks						
	19.1.	Partial exams (points)				/	
	19.2.	Projects (point	s)				40	
	19.3.	Final exam (po	oints)				60	
20	Grading so	ale		Unc	ler 50		5 (five) (F)	
				5	1 - 64		6 (six) (D)	
				1	points			

				65 - 74 points		7 (seven) (C)
				75 - 84 points		8 (eight) (B-)
				85 - 94 points		9 (nine) (A-/B+)
				95 - 100 points		10 (ten)(A/A+)
21.	Course ev	valuation		Student question	naire	
	Textbook	S		·		
		Instruction mate	erials			
		No.	Author	Title	Publishe r	Year
22.	22.1.	1. 2. 3.	R. Minovski at all., J. Womack, D. Jones	Lean Management Lean Thinking Contemporary materials (presentations,	Seminar material s in scope of the InComS MEs project Free Press /	2018 2000 /
				papers) on Lean Management		
		Supplemental In	nstruction Materials			
		No.	Author	Title	Publishe r	Year
	22.2.	1.	L. Wilson	How to implement Lean Manufacturing	McGra w Hill	2010
		2.				
		3.				

Add. 3		Course program for the second level (second cycle – postgraduate) of studies			
1.	Course title	Lean tools 1			
2.	Code	2LEAN02			
3.	Study group(s)	Lean management			
4.	The organizer of the	"Ss. Cyril and Metho	dius" Un	iversity in Skopje	, Faculty of
	study program (unit,	Mechanical Engineer	ring - Sko	opje,	
	institute, department)	Institute for Manufac	turing Er	ngineering and Ma	inagement
5.	Level (first, second, third	second			
	degree)				
6.	Academic year / semester	academic year	Ι	Semester	I/winter – I/summer
7	ECTS credits	6			
8.	Professor	Associate professor l	PhD Boja	n Jovanoski	
9.	Language	English			
10	Prerequisites for	None			
10.	enrolling the course				

11.	Course of (competer	njectives nces)	The main objective of the course is to give the participants theoretical and practical experience on selected Lean Management tools i.e. to make them competent to understand and implement those tools.				
12.	Detailed of course and learning r	content of the d units with the esults per unit	House of Lean and the importance of the Lean tools. Theoretical explanation and analysis of case studies of selected Lean tools, like 5S. Visualization. Takt time. Poka Yoke, etc.				
13	Connection courses	on with other	/				
14.	Study me	thods	Interactive lectures and/or team work	s, auditory and/or l on project assign	aboratory pr nents, selfru	actice, selfrunning nning assignments	
15.	Total hou	rs	6 ECTS x 30 = 180	0 hours	,	00	
16.	Lectures/	Lab	16.1.	Lectures (15 we	eks x 2)	30 hours	
			16.2.	Lab (student wo	rk)	30 hours	
			16.3.				
	Project		17.1.	Project assignme	ents	30 hours	
17.	Work/Ass	signments	17.2.	Individual assign	nments	30 hours	
			17.3.	Self-study		60 hours	
18	Prerequis	ites for taking	Seminar work deliv	ered and approved			
	the final e	xam					
19	Points / N	larks	• • •			1	
	19.1.	Partial exams (points)			/	
	19.2.	Projects (point	s)			50	
	19.3.	Final exam (po	oints)		50		
20	Grading s	cale		Under 50		5 (five) (F)	
	0			51 - 64	6 (six) (D)		
				points			
				65 - 74 points		7 (seven) (C)	
				75 - 84 points		8 (eight) (B-)	
				85 - 94 points		9 (nine) (A-/B+)	
	~			95-100 points		10 (ten)(A/A+)	
21.	Course ev	aluation		Student question	inaire		
	Textbook	s					
		Instruction mate	erials				
		No.	Author	Title	Publisher	Year	
		1.	Lonnie Wilson	How to		2010	
				Implement	McGraw		
	22.1			Lean	-Hill		
	22.1.			Manufacturing	XX 7°11	2006	
		2.	Javier Santos,	Improving	Willy	2006	
			Iose Manuel	With Lean	and Sons		
22			Torres	Thinking			
22.		3.		Thinking			
		Supplemental In	nstruction Materials				
		No	Author	Title	Publisher	Year	
		1	John Nicholas	Leon		2018	
		1.	John Micholas	Production	Press	2018	
	22.2.			for	11000		
				Competitive			
				Advantage			
		2.					
		3.					

Add. 3 Course program for the second level (second cycle -				cycle – postgraduate)			
1	Course titl	e	Motivation and cr	Motivation and creative teams			
2	Code	C	21 FAN03				
3.	Study grou	n(s)	Lean management				
4.	The organi	izer of the	"Ss. Cvril and Meth	nodius" Unive	ersity in Skopie.	Faculty of	
	study prog	ram (unit,	Mechanical Engine	ering - Skopj	e,	5	
	institute, d	epartment)	Institute for Manuf	acturing Engi	neering and Man	agement	
5.	Level (firs	t, second, third	second		0	0	
	degree)						
6.	Academic	year / semester	academic year	Ι	Semester	I/winter – I/summer	
7	ECTS cred	lits	6				
8.	Professor		Prof. PhD Radmil I	Polenakovikj			
0			Ph.D / Assistant Pr	ofessor Trajcl	he Velkovski		
9.	Language	<u> </u>	English				
10.	enrolling t	tes for he course	None				
11.	Course obj	jectives	Students will be cap	pable to recog	gnize different m	otivational theories;	
	(competen	ces)	to implement behav	vioral and cog	gnitive approache	es of motivation in	
			teams; to motivate	employees to	work according	LEAN principles; to	
10	D 1 1 1	6.1	manage creative tea	ams in LEAN	surroundings	C	
12.	Detailed co	ontent of the	Motivational theori	es; Psycholog	gical mechanisms	s for motivation;	
	course and	units with the	Behavioral approac	to motiva	tion; Cognitive a	approaches to	
	learning re	suns per unit	Which teams gave	hy principles	, now to develop	n and working in	
			I FAN teams: What	t are I FAN te	eams?	II and working III	
13	Connection	n with other					
15	courses						
14.	Study met	hods	Interactive lectures,	, auditory and	l/or laboratory pr	actice, selfrunning	
			and/or team work	on project as	signments, selfru	nning assignments	
15.	Total hour	s	6 ECTS x 30 = 180	hours			
16.	Lectures/L	ab	16.1.	Lectures (15	5 weeks x 2)	30 hours	
			16.2.	Lab (student	t work)	0 hours	
			16.3.				
17	Project		17.1.	Project assig	gnments	60 hours	
17.	Work/Assi	ignments	17.2.	Individual a	ssignments	30 hours	
			17.3.	Self-study		60 hours	
18	Prerequisit the final ex	tes for taking kam	Seminar work delive	ered and appro	oved		
19	Points / M	arks					
	19.1.	Partial exams (points)			/	
	19.2.	Projects (point	s)			40	
	19.3.	Final exam (po	ints)			60	
20	Grading sc	ale		Unde	r 50	5 (five) (F)	
				51	- 64	6 (six) (E)	
				ро	oints		
				65 - 74 po	oints	7 (seven) (D)	
				75 - 84 po	oints	8 (eight) (C)	
				85 - 94 po	oints	9 (nine) (B)	
				95 – 100 po	oints	10 (ten)(A)	
21.	Course eva	aluation		Student que	stionnaire (evalu	ation form)	
	Textbooks						
22.	22.1.	Instruction mate	erials				

	No.	Author	Title	Publishe r	Year
	1.	Polenakovikj R.	Development of human resources (internal textbook)	FME, UKIM	2010
	2.	Different authors	Selected case studies, videos, Journal papers, etc		/
	3.	Carolina Machado, J. Paulo Davim	Organizational Behaviour and Human Resource Management	Springer	2018
	Supplemental Ir	struction Materials			
	No.	Author	Title	Publishe r	Year
	1.	Gary Dessler	Human Resource Management (16th edition)	Pearson	2020
22.2.	2.	Debra Patterson	Human Resource Management	Open Library	2023
	3.	J. Haden	The Motivation Myth: How High Achievers Really Set Themselves Up to Win	Portfoli o	2018

Add	1. 3	Course program for the second level (second cycle – postgraduate)				
		of studies				
1.	Course title	Lean tools 2				
2.	Code	2LEAN04				
3.	Study group(s)	Lean management				
4.	The organizer of the	"Ss. Cyril and Metho	dius" Uni	versity in Skopje,	Faculty of	
	study program (unit,	Mechanical Engineer	ring - Skop	oje,		
	institute, department)	Institute for Manufac	turing Eng	gineering and Mai	nagement	
5.	Level (first, second, third	second				
	degree)					
6.	Academic year / semester	academic year	Ι	Semester	I/winter – I/summer	
7	ECTS credits	6				
8.	Professor	Prof. PhD Robert Mi	novski			
		Associate professor I	PhD Bojan	Jovanoski		
9.	Language	English				
10	Prerequisites for	None				
10.	enrolling the course					
11.	Course objectives	The main objective of the course is to give the participants theoretical				
	(competences)	and practical experie	nce on sel	ected Lean Manag	gement tools i.e. to	
	/	make them competer	nt to under	stand and implem	ent those tools.	

f the Lean tools. Theoretical dies of selected Lean tools, like operators, etc. laboratory practice, selfrunning ments, selfrunning assignments						
lies of selected Lean tools, like operators, etc. laboratory practice, selfrunning ments, selfrunning assignments						
laboratory practice, selfrunning ments, selfrunning assignments						
laboratory practice, selfrunning ments, selfrunning assignments						
laboratory practice, selfrunning ments, selfrunning assignments						
aboratory practice, selfrunning ments, selfrunning assignments						
30 hours						
6.1. Lectures (15 weeks x 2) 30 hours						
$\frac{2}{30}$ hours						
ents 30 hours						
nmonta 30 hours						
60 hours						
00 11001 S						
the final exam						
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40						
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/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-)						
/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+)						
/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+)						
/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) maire						
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/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) maire Publishe Year r 2010 McGra w-Hill Willy 2006 and Sons Publishe Year r 2010						
/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) maire Publishe Year r 2010 McGra w-Hill Willy 2006 and Sons Publishe Year r 2010 McGra Willy 2006 and Sons Publishe Year r CRC 2018						
/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) maire 2010 McGra w-Hill Willy 2006 and Sons Publishe Year r 2010 McGra w-Hill Villy 2006 and Sons CRC Press						
/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) maire Publishe Year r 2010 McGra w-Hill Willy 2006 and Sons Publishe Year r 2010 McGra Willy 2006 and Sons Publishe Year r CRC 2018 Press						
/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) maire Publishe Year r 2010 McGra w-Hill Willy 2006 and Sons Publishe Year r CRC 2018 Press						
Project assignments 30 hours Individual assignments 30 hours Self-study 60 hours ork delivered and approved / 40 60						

Add. 3			Course program for the second level (second cycle – postgraduate) of studies					
1.	Course titl	e	Applied modelling and simulation in business processes					
2.	Code	.•	2LEAN05					
3.	Study grou	up(s)	Lean management					
4.	The organ	izer of the	"Ss. Cyril and Methodius" University in Skopje, Faculty of					
	study prog	gram (unit,	Mechanical Engine	Mechanical Engineering - Skopje,				
	institute, d	lepartment)	Institute for Manuf	acturing Engi	neering and	l Management		
5.	Level (firs	st, second, third	second	00	0	8		
6	degree)				~	· · · · · · · · · · · · · · · · · · ·		
6.	Academic	year / semester	academic year	1	Semester	Il/summer – Il/win	ter	
7	ECTS cred	dits	6	6				
8.	Professor		Associate professor	r PhD Bojan J	ovanoski			
9.	Language		English					
10.	enrolling t	tes for the course	None					
11.	Course ob	jectives	Creating simulation	n models of re	al problems	s and better understandin	ng	
	(competen	ices)	how certain phenor	mena in reality	y work thro	ugh models. Creating	•	
			strategies based on	quantitative r	nethods, be	tter understanding of		
			complex business p	problems, prol	blem analys	is and finding optimal		
			solutions for them.					
12.	Detailed c	ontent of the	Introduction to con	nplex business	s systems. I	Dynamics of the systems.		
	course and	l units with the	Modeling process.	Introduction t	o simulatio	n software. Structure and	d	
	learning re	esults per unit	behavior of dynam	ic systems. Pr	esenting an	d analyzing the created		
			computer model. C	yclical diagra	ms and flow	w diagrams. Dynamics of	f	
			inventory and flow	s (as elements	s of each mo	odel). Delays. Forecastin	ıg	
			modeling. Presentin	ng new aspect	ts in simulat	tion and modeling.		
12	C ···	·.1 .1	Creating a complex	k model.				
13	Connectio courses	n with other	/					
14.	Study met	hods	Interactive lectures	, auditory and	/or laborate	bry practice, selfrunning		
	-		and/or team work on project assignments, selfrunning assignments					
15.	Total hour	S	6 ECTS x 30 = 180 hours					
16.	Lectures/L	Lab	16.1.	Lectures (15 weeks x 2)) 30 hours		
			16.2.	Lab (student work)		30 hours		
			16.3.					
	Project		17.1.	Project assig	gnments	30 hours		
17.	Work/Ass	ignments	17.2.	Individual a	ssignments	30 hours		
			17.3.	Self-study		60 hours		
18	Prerequisi	tes for taking	Seminar work deliv	ered and appro	oved			
10	Doints / M	arks						
17	19.1.	Partial exams	(points)			/		
	19.2.	Projects (point	s)			50		
	19.3.	Final exam (po	(points)			50		
20	Grading scale			Under 50		5 (five)	(F)	
	Grading Searce			51 -	64	6 (six)		
				poi	nts		. /	
				65 - 74 poi	nts	7 (seven) ((C)	
				75 - 84 poi	nts	8 (eight) (I	B-)	
				85 - 94 poi	nts	9 (nine) (A-/E	3+)	
				95-100 points 10 (te		10 (ten)(A/A	\ +)	
21.	Course eva	aluation		Student questionnaire				

	Textbooks						
		Instruction mate	erials				
22.		No.	Author	Title	Publish er	Year	
	22.1.	1.	Sterman, J.D.	Business Dynamics, Systems Thinking and Modeling for a Complex World	McGre w Hill Higher Educati on, USA	2004	
		2.	Stewart Robinson	Simulation: The Practice of Model Development and Use	John Wiley & Sons	2014	
		<u>3.</u>					
		Supplemental Ir	istruction Materials	1		I	
		No.	Author	Title	Publish er	Year	
	22.2.	1.		Tutorials from the simulation software			
		2.	Manuel Laguna Johan Marklund	Business Process Modeling, Simulation and Design	Prentice Hall	2023	
		3.	Jerry Banks	Handbook of simulation	John Wiley & Sons	1998	

Add. 3		Course program for the second level (second cycle – postgraduate)				
		of studies				
1.	Course title	Organisational desi	gn - Lean	Approach		
2.	Code	2LEAN06				
3.	Study group(s)	Lean management				
4.	The organizer of the study program (unit, institute, department)	"Ss. Cyril and Methodius" University in Skopje, Faculty of Mechanical Engineering - Skopje, Institute for Manufacturing Engineering and Management				
5.	Level (first, second, third degree)	second				
6.	Academic year / semester	academic year	Ι	Semester	II/summer - II/winter	
7	ECTS credits	6				
8.	Professor	Prof. PhD Radmil Polenakovikj				
9.	Language	English				
10.	Prerequisites for enrolling the course	None				
11.	Course objectives	Students will be capable to recognize the importance of organizational				
	(competences)	design and its relatio	n to organ	izational strategy	and performances; to	
		develop LEAN struc	tures			

12.	Detailed content of the course and units with the learning results per unitOrganisational Design Theory; Key Concepts of the Organisational Design Process; Linking Organisational Strategy to Organisational Design; Organisational Structure; Processes and Lateral Capability; Agility; Lean approaches towards organizational design					the Organisational to Organisational Lateral Capability; design
13	Connection courses	on with other	/	C	2	
14.	Study met	thods	Interactive lectures and/or team work	, auditory and/or la on project assignm	aboratory p nents, selfru	ractice, selfrunning
15.	Total hou	rs	6 ECTS x 30 = 180) hours		
16.	Lectures/Lab		16.1.	Lectures (15 wee	eks x 2)	30 hours
			16.2.	Lab (student wor	·k)	0 hours
			16.3.			
	Project		17.1.	Project assignme	60 hours	
17.	Work/Ass	signments	17.2.	Individual assignments		30 hours
			17.3.	Self-study		60 hours
18	Prerequisi	tes for taking	Seminar work deliv	ered and approved		
	the final e	xam				
19	Points / M	larks	·			
	19.1.	Partial exams ((points)			/
	19.2	Projects (point	s)			40
	10.2	Final around (no				60
	19.3.	Final exam (po	omts)	1		00
20	Grading s	cale		Under 50		5 (five) (F)
				51 - 64		6 (six) (E)
				points		
				65 - 74 points		7 (seven) (D)
				75 - 84 points		8 (eight) (C)
				85 - 94 points		9 (nine) (B)
	~			95 - 100 points		10 (ten)(A)
21.	Course ev	aluation		Student question	naire	
	Textbook	S				
		Instruction mate	erials			
		No	Author	Title	Dublich	Voor
		INO.	Autioi	The	ruonsn	i cai
		1	Javier Villalba-	The Hoshin	Produc	2017
		1.	Diez	Kanri Forest	tivity	2017
			DIVE	Lean Strategic	Press	
				Organizational		
				Design		
	22.1.	2.	Different authors	Selected case		/
22.				studies, videos,		
				Journal papers,		
				etc		
		3.	Richard M.	Organizational	Cambri	2020
			Burton, Børge	Design: A	dge	
			Obel, Dorthe	Step-by-Step	Univer	
			Døjbak	Approach 4th	sity	
			Håkonsson	Edition	Press;	
		Supplemental In	nstruction Materials			
	22.2.	No.	Author	Title	Publish	Year
					er	

	1.	Donald L. Anderson	Organization Design: Creating Strategic & Agile Organizations	SAGE Publica tions	2018
	2.	Jez Humble , Joanne Molesky	Lean Enterprise: How High Performance Organizations Innovate at Scale	O'Reill y Media	2020
	3.				

Add. 3		Course program for the second level (second cycle – postgraduate)					
		of studies					
1.	Course title	Design of Quality Management Systems in accordance with ISO 9001					
2.	Code	2LEAN07					
3.	Study group(s)	Lean management					
4.	The organizer of the study program (unit,	"Ss. Cyril and Methodius" University in Skopje, Faculty of Mechanical Engineering - Skopje,					
	institute, department)	Institute for Manuf	acturing En	gineering and M	lanagement		
5.	Level (first, second, third degree)	second					
6.	Academic year / semester	academic year	Ι	Semester	II/summer – II/winter		
7	ECTS credits	6					
8.	Professor	Prof. PhD Robert N	/linovski				
9.	Language	English					
10.	Prerequisites for enrolling the course	None					
11.	Course objectives (competences)	Understanding the point of the standard.	need for im nalysis and	plementation of or practical imp	the standard ISO 9001, lementation of parts of		
12.	Detailed content of the course and units with the learning results per unit	Family of standards ISO 9000. Requirements of the standard ISO 9001. Prerequisites for successful implementation of ISO 9001. Implementation process of ISO 9001. What comes after implementation of ISO 9001 – integrating ISO 9001 and Lean.					
13	Connection with other courses	/					
14.	Study methods	Interactive lectures, team work (if applicable) project assignments					
15.	Total hours	6 ECTS x 30 = 180 hours					
16.	Lectures/Lab	16.1.	Lectures (15 weeks x 2)	30 hours		
		16.2.	Lab (stude	ent work)	30 hours		
		16.3.					
	Project	17.1.	Project as	signments	30 hours		
17.	Work/Assignments	17.2.	Individual	assignments	30 hours		
		17.3.	Self-study		60 hours		
18	Prerequisites for taking	Seminar work delivered and approved					
	the final exam						
19	Points / Marks						
		T					
-----	-----------	------------------	----------------------	---	---------------	--	--
	19.1.	Partial exams (points)			/	
	19.2.	Projects (point	s)			40	
	19.3.	Final exam (po	oints)			60	
20	Grading s	cale		Under 50		5 (five) (F)	
				51 - 64		6 (six) (D)	
				points			
				65 - 74 points		$\frac{1}{2} \frac{1}{2} \frac{1}$	
				/5 - 84 points		$\frac{8 \text{ (eight) (B-)}}{9 \text{ (nino) (A / P+)}}$	
				95 - 100 points		$\frac{9 \text{ (IIIIC)} (A-/D+)}{10 \text{ (ten)} (A/A+)}$	
21.	Course ev	aluation		Student question	naire		
	Textbook	s		1			
	Textoook	Instruction mate	ariala				
		N N		TT: 1	D 11	37	
		No.	Author	Intle	Publis	Year	
		1	/	Contemporary	/	/	
		1.	7	materials	,	,	
				(presentations,			
				papers,) on			
				QMS and Lean			
	22.1.	2.	n.n.	Quality	Intern	2015	
				management	ationa		
				Systems -	l Organ		
				(ISO	izatio		
				9001:2015)	n for		
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Stand		
22.					ardiza		
					tion		
		3.					
		Supplemental In	nstruction Materials				
		No.	Author	Title	Publis	Year	
					her		
		1.	Micklewright,	Lean ISO 9001,	Ameri	2010	
			Mike	Adding Spark	can Societ		
				9001 OMS and	y for		
	22.2.			Sustainability	Qualit		
				to your Lean	y,		
				Efforts	Qualit		
					У		
					Press		
		2.					
		3.					

Add. 3		Course program for the second level (second cycle – postgraduate) of studies
1.	Course title	Lean project
2.	Code	2LEAN08
3.	Study group(s)	Lean management

4.	The organ	nizer of the	"Ss. Cyril and Meth	"Ss. Cyril and Methodius" University in Skopje, Faculty of						
	study prog	gram (unit,	Mechanical Engine	ering - Skopj	je,					
_	institute, o	department)	Institute for Manufa	acturing Engi	ineerin	ng and Ma	nagement			
5.	Level (fir	st, second, third	second							
(degree)	1	1 .		0		TT / TT / · ·			
6. 7	Academic	year / semester	academic year	1	Seme	ster	II/summer – II/winter			
/	ECTS cre	dits	0	<i>C</i> 1 '						
δ.	Professor		Prof. PhD Robert N	11novski	r	-1-1				
9	Language		English	PhD Bojan .	ovanc	OSK1				
	Prerequisi	ites for	None							
10.	enrolling	the course	Titolic							
11.	Course ob	ojectives	The initially recom	mended impr	oveme	ents using	the Lean tools can be			
	(competer	nces)	applied, experiment	ted and furthe	er imp	roved in th	ne Lean laboratory.			
		,	Experience in exper	rimenting and	i evalu	lating scer	narios will be gained.			
12.	Detailed of	content of the	 Developin 	ig a project-p	lan					
	course and	d units with the	 Creating 	a systematic	c app	roach in	the experimentation			
	learning r	esults per unit	process							
			 Getting sc 	enarios						
			 Developin 	ıg analysis, d	ecisio	n and repo	orts			
			 Developin 	ig implement	ation	plan				
13	Connectio	on with other	/							
	courses									
14.	Study met	thods	Interactive lectures, auditory and/or laboratory practice, selfrunning							
15	T-4-11		and/or team work on project assignments, selfrunning assignments							
15.	I otal nou	rs [ab	$\frac{6 \text{ ECTS x } 30 = 180 \text{ hours}}{16 \text{ Lextrace} (15 \text{ multare 2})} = 20 \text{ hours}$							
10.	Lectures	Lau	16.1.	Lectures (15 weeks x 2)		$\frac{(S \times Z)}{(X)}$	30 hours			
			16.2.	Lab (studen	it worr	x)	50 110015			
	Project		17.1	Project assi	onmer	nts	30 hours			
17.	Work/Ass	signments	17.1. Froject assignme			ments 30 hours				
- / ·			17.2.	Solf study	issigni	60 hours				
18	Droroquis	ites for taking	17.3. Seminar work delive	self-sludy	oved		00 liours			
10	the final e	wam	Seminar work denve	and appro-	oveu					
19	Points / M	larks								
17	19.1.	Partial exams (points)				/			
	19.2	Projects (point)	s)				40			
	10.2		3) ·				40			
	19.3.	Final exam (po	oints)				60			
20	Grading s	cale		Unde	er 50		5 (five) (F)			
				51	- 64		6 (six) (D)			
				po	oints					
				<u>65 - 74 pc</u>	oints	7 (seven) (C				
				75 - 84 pc	oints	8 (eight) (B-)				
	$\frac{85 - 94 \text{ points}}{100 \text{ points}} = \frac{9 \text{ (nine)}}{100 \text{ points}}$									
21	Course	aluation		95 - 100 pc	oints	nira	10 (ten)(A/A+)			
21.	Course ev	aiuation		student que	suonn	laire				
	Textbook	S								
22		Instruction mate	erials							
<i>22</i> .	22.1.	No.	Author	Title		Publish	Year			
				•		er				

	1.	Lonnie Wilson	How to		2010
			Implement	McGra	
			Lean	w-Hill	
			Manufacturing		
	2.	Javier Santos,	Improving	Willy	2006
		Richard Wysk,	Production	and	
		Jose Manuel	With Lean	Sons	
		Torres	Thinking		
	3.				
	Supplemental Ir	nstruction Materials			
	No.	Author	Title	Publish	Year
				er	
22.2.	1.				
	2.				
	3.				
	22.2.	1. 2. 3. Supplemental In No. 22.2. 1. 2. 3. 3. 3.	1. Lonnie Wilson 2. Javier Santos, Richard Wysk, Jose Manuel Torres 3. Supplemental Instruction Materials No. Author 22.2. 1. 2. 3. 3. 3.	1. Lonnie Wilson How to Implement Lean 2. Javier Santos, Richard Wysk, Jose Manuel Torres Improving Production 3. 3. 22.2. 1. 2. 1. 3. 1. 3. 3.	1.Lonnie WilsonHow to Implement Lean Manufacturing2.Javier Santos, Richard Wysk, Jose Manuel TorresImproving Production Mith Lean ThinkingWilly and Sons3

Add	. 3	Course program for of studies	or the seco	nd level (second	cycle – postgraduate)	
1.	Course title	Applied statistics				
2.	Code	2LEAN09				
3.	Study group(s)	Lean management				
4.	The organizer of the	"Ss. Cyril and Meth	nodius" Uni	versity in Skopje	, Faculty of	
	study program (unit,	Mechanical Engine	ering - Skoj	pje,		
	institute, department)	Institute for Manufa	acturing En	gineering and Ma	nagement	
5.	Level (first, second, third degree)	second				
6.	Academic year / semester	academic year	Ι	Semester	II/summer – II/winter	
7	ECTS credits	6				
8.	Professor	Nikola Tuneski				
		Associate professor	Mirko Peti	rushevski		
9.	Language	English				
10.	Prerequisites for	completed undergraduate studies				
11	Compare this stime a	Tutus 1	.1	· · · · · · · · · · · · · · · · · · ·	·····	
11.	(competences)	nuroduction to the	elements of	tion Cose studios	ustical estimates	
	(competences)	software.	eering prac	lice. Case studies	with suitable	
12.	Detailed content of the	Estimates. Point est	timate. Inter	rval estimates (co	nfidence intervals) and	
	course	test of hypothesis: f	for the prop	ortion, for the me	an, for the dispersion.	
		Linear regression a	nd correlati	on. Test on the di	stribution.	
13	Connection with other	/				
1.4	courses	T 1 .	1.	1/ 1 1 /	. 10 :	
14.	Study methods	Interactive lectures,	, auditory a	nd/or laboratory p	bractice, self running	
15	Total have	and/or teamwork of	$\frac{190}{100}$	signments, self ru	nning assignments	
13.	Loctures/Lob	0 EC 15 X 50 nours	-180 nours		20 hours	
10.	Lectures/Lab	10.1.	Lectures	mt wonle)	30 hours	
		10.2. Lab (student Work) 30 hours 16.2. Dractice 0 hours				
	Project	10.3.	Project as	rianments	30 hours	
17	Work/Assignments	17.1.		- ·		
1/.	work/Assignments	17.2.	Individual	assignments	30 hours	
		17.3.	Self-study		60 hours	

18	Prerequisi the final e	tes for taking xam	Seminar work delivered and approved						
19	Points / M	Marks							
	19.1.	Partial exams (points)			0			
	19.2.	Projects (point	s)			50			
	19.3.	Final exam (po	oints)			50			
20	Grading s	cale		Under 50		5 (five) (F)			
				51 - 64		6 (six) (D)			
				points	7(sover)(C)				
				65 - 74 points	$\frac{7 \text{ (seven) (C)}}{2 \text{ (sight) (D)}}$				
				75 - 84 points		$\frac{8 \text{ (eight) (B-)}}{9 \text{ (ninc) (A / B+)}}$			
				85 - 94 points		$9 (\text{mine}) (A - / B^+)$ 10 (top) (A / A+)			
21.	Course ev	aluation		Student question	inaire	10 (tell) (A / A +)			
	Textbook	2		1					
	Textoook	Instruction moto	miala						
		Instruction mate							
		No.	Author	Title	Publish	Year			
		1	Walnala D E	Drohohility Pr	Prontice	2007			
		1.	Walpole K.E., Myers R H	Statistics for	Hall	2007			
			Myers S.L., Ye	Engineering &	Tiun				
			K.	Scientists					
		2.	J.P. Marques de	Applied	Springe	2013			
	22.1.		Sa	Statistics using	r-Verlag				
				SPSS,					
				STATISTICA					
22	-	2	Tunaski N	and MAILAB Problems in					
22.		5.	Tuneski, IN.	probability and					
				statistics in					
				progress. (in					
				Macedonian)					
		Supplemental In	nstruction Materials						
		No.	Author	Title	Publish	Year			
					er				
		1.	Mendenhal W.,	Statistics for	Maxwel	2015			
	22.2.		Sincich T.	Engineering	Macmill				
				and the	an				
		2		50101008					
		2.							
		5.							

Add. 3		Course program for the second level (second cycle – postgraduate) of studies
1.	Course title	Economical aspect of Lean
2.	Code	2LEAN10
3.	Study group(s)	Lean Management

4.	The organ	izer of the	"Ss. Cyril and Methodius" University in Skopje, Faculty of Mechanical					
	study prog	ram (unit,	Engineering - Skopje,					
	institute, d	epartment)	Institute for Manufacturing Engineering and Management					
5.	Level (firs	t, second,	second					
6	third degree	ee)	a a damia a		Т	Compatan	II/minton	
0. 7	Academic ECTS grad	year/semester	academic y	ear	1	Semester	11/summer – 11/winter	
8	Professor	1115	0 Prof Dr V	alentina	Geceveka			
9	Language		English	aicinina	Geeevska			
	Prerequisit	tes for	None					
10.	enrolling t	he course						
11.	Course ob	jectives	Algorithmi	c and no	n-algorithmi	e methods for int	elligent processes	
	(competen	ces)	design and	their app	olication in p	roduction techno	logies and systems.	
			Basic conc	epts and	algorithms	for heuristic mo	deling: decision	
			making, kr	iowledge	e bases & exp	bert systems, ger	netic algorithms,	
			modeling	f intellio	unns, iuzzy	nogic, neural network	works. Design and	
			processes	and sma	rt technologi	es application in	n smart concepts	
			(factory of	the fut	ure, industry	4.0, smart factor	ry, smart products).	
12.	Detailed co	ontent of the	Lean financ	cial mode	els. Business r	nodel for value cr	ceating. Financial models	
	course		and costs	estimatin	ig of Lean to	ools. Lean busin	less modeling, mapping	
			business di	rivers an	d Lean KPI.	Analytical findin	ng analysis by financial	
			performance	es and L	ean KPI. Lea	in changes and te	chnology adopting (JIT,	
			VSM, Lea	an manu Taonaitia	ifacturing).	Management acc	counting and financial	
			reporting. Transition to Lean financial models. Finding organization					
			operational success factors and costly improvement. Detecting hidden					
			manufacturing. Comparison analysis with direct costing. ABC, TPC, TC,					
			VC methods. Development of Order Activity Product Costing (OAPC vs.					
			ABC). Lea	n approa	ich and impa	ct of Pareto distr	ribution for product cost	
			calculation	s. Agi	le and S	Scrum Lean	techniques for 3E	
10	a vi	·.1 .1	product/pro	ocess/ser	vice developr	nent.		
13	Connection	n with other	/					
14	Study met	hods	Interactive	lectures	auditory and	/or laboratory pra	actice self-running	
11.	Study met	nous	and/or tean	iwork or	project assig	nments, self-run	ning assignments	
15.	Total hour	S	6 ECTS x 3	30 hours=	=180 hours			
16.	Lectures/L	.ab	16.1.	Lecture	es		30 hours	
			16.2.	Lab (st	udent work)		30 hours	
			16.3.	Practic	e		0 hours	
	Project		17.1.	Project	assignments		30 hours	
17.	Work/Assi	ignments	17.2.	Individ	ual assignme	nts	30 hours	
			17.3.	Self-stu	ıdy		60 hours	
18	Prerequisit	tes for taking	Seminar we	ork deliv	ered and appr	roved		
	the final ex	xam						
19	Points / M	arks	(
	19.1.	Partial exams	(points)			0		
	19.2.	Projects (poir	nts)			50		
	19.3.	Final exam (p	ooints)			50		
20	Grading so	cale		Under	50	5 (five) (F)		
				51 -	64 points	6 (six) (D)		
				65 - 74	points	7 (seven) (C)		
				75 - 84	points	8 (eight) (B-)		
				85 - 94	points	9 (nine) (A- /	B+)	

				95 - 100 points	10 (ten) (A /	A+)				
21.	Course ev	valuation		Student questionnaire						
	Textbooks									
		Instruction materials								
		No.	Author	Title	Publisher	Year				
	22.1	1.	Meade D.	Financial Models and Tools for Managing Lean	T&F Publ.	2012				
	22.1.	2.	Blank S, Ries E.	Introduction to Lean Financial Model	AW- Pub.Comp.	2016				
		3.	Parmenter D.	Lean Practices to Transform Financial Results	Elsevier	2018				
22.		Supplemental Instruction Materials								
		No.	Author	Title	Publisher	Year				
	22.2	1.	Anderson D.	Engineering to Rapidly Develop Low-Cost, High- Quality Products for Lean Production	CRC Press, T&F	2018				
	22.2.	2.	Leyborn E.	Directing The Agile Organization: A Lean Approach To Business Management	IT Publishing	2013				
		3.								

Add	. 3	Course program f	or the second	d level (second cy	cle – postgraduate) of	
		studies				
1.	Course title	Lean & Other Ap	proaches			
2.	Code	2LEAN11				
3.	Study group(s)	Lean Management				
4.	The organizer of the	"Ss. Cyril and Meth	nodius" Univ	ersity in Skopje, H	Faculty of Mechanical	
	study program (unit,	Engineering - Skop	je,			
	institute, department)	Institute for Manufa	acturing Engi	ineering and Mana	agement	
5.	Level (first, second,	second				
	third degree)				1	
6.	Academic year/semester	academic year	Ι	Semester	II/summer – II/winter	
7	ECTS credits	6				
8.	Professor	Prof. Dr. Atanas Ko	ochov			
9.	Language	English				
10	Prerequisites for	N/Ā				
10.	enrolling the course					
11.	Course objectives	The course on Lear	managemen	t and other approa	aches is designed in a	
	(competences)	way to bring in the	quick realiza	tion of the many t	ools and techniques	
		employed by Lean to improve efficiency and quality of businesses across				
		many industries. One of the new modern approaches is the cleaner				
		production technology	ogy (CPT) in	a small and medi	um enterprise. With this	
		course and the exar	nples, it prov	ides, the student v	will be able to	

			implemen student's	implement the teachings quicker than expected. It also depends on student's level of interest and for the widespread of Lean management					
10	$D \leftarrow 1 = 1$	and CP1.							
12.	Detailed c	content of the	Course c	content:					
	course		following	Within Lean manageme	the Lean Princi	rtain order that when			
			nut to use	can successfully implem	ent the notions	of Lean management			
			vs Cleane	r production technologies	s and low carbo	n economy (LCE)			
			principles	, within the required proc	cesses. These pi	inciples of Lean			
			managem	ent and CPT, LCE, the er	nd result is a cu	stomer satisfaction and			
			increase in	n efficiency and quality, o	contribution to	the principles of			
			circular ec	conomy (CE). Topics cov	vered in this cou	urse will include:			
			• Identify	ving the value – Identify t	the value of the	product from the			
			perspec	tive of the many custome	ers the product	is catering to;			
			Mappin Natural	g the principles of CP1,	LCE, CE;	5 D minainlag			
			Natural Creatin	resources efficient usage	e, 3K principles	est ride towards the			
			custom	ers	uets the smooth				
13	Prereauisi	ites	N/A						
14.	Study met	thods	Interactive	e lectures, auditory and/o	r laboratory pra	ctice, self-running			
			and/or tea	mwork on project assign	ments, self-run	ning assignments			
15.	Total hour	rs	6 ECTS x 30 hours=180 hours						
16.	Lectures/I	Lab	16.1. Lectures			30 hours			
		16.2.		Lab (student work)		30 hours			
	D . (16.3.	Practice		0 hours			
17	Project 17.1.				30 hours				
17.	. work/Assignments 17.2.		Self study		30 hours				
18	Droroquisi	ites for taking	17.5. Seminor v	ork delivered and approx	ved	oo nours			
10	the final e	exam	Seminar v	fork derivered and appro-	veu				
19	Points / M	larks							
	19.1.	Partial exams	(points)	0					
	19.2.	Projects (poin	its)			50			
	19.3.	Final exam (p	oints)			50			
20	Grading s	cale		Under 50		5 (five) (F)			
				51 - 64 points		6 (six) (D)			
				<u>65 - 74 points</u>		7 (seven) (C)			
				75 - 84 points		8 (eight) (B-)			
				85 - 94 points		9 (nine) (A - / B +)			
21	Course av	valuation		95 - 100 points		$10 (ten) (A / A^+)$			
21.		aluation		Student questionnane					
	Textbooks	S							
		Instruction ma	terials			r			
		No.	Author	Title	Publisher	Year			
		1.	Michael	The Lean Strategy:	McGraw-	March 23, 2017			
22.	22.1		Balle	Using Lean to Create	Hill				
	22.1.		and	Competitive	Education; 1				
			Daniel	Advantage, Unleash	edition				
			Jones	Deliver Sustainable					
				Growth					

	2.	Paul Myerson	Lean Supply Chain and Logistics Management	McGraw- Hill Education; 1 edition	February 27, 2012
	3.	James P. Womack and Daniel T. Jones	Lean Thinking: Banish Waste and Create Wealth in Your Corporation	Free Press; 2nd edition	November 23, 2010
	4.	UNIDO	Cleaner production technologies: Low Carbon economy	UN press	2014
	5.	David Mann	Creating a Lean Culture	Routledge; 3 edition	October 24, 2014
	Supplemental	Instruction 1	Materials		
	No.	Author	Title	Publisher	Year
	1.	Jason Little	Lean Change Management: Innovative practices for managing organizational change	Happy Melly Express; 2 edition	October 8, 2014
22.2.	2.	Don P. Clausing	Total Quality Development: A Step-By-Step Guide to World-Class Concurrent Engineering (ASME Press series on international advances in design productivity)	Amer Society of Mechanical	April 1, 1994
	3.	Erik Young	The Power of Lean Process: Increase Profits, Delight Customers and Improve Your Company's Culture	McGraw- Hill Education;	2014

Add. 3		Course program for the second level (second cycle – postgraduate) of studies						
1.	. Course title Workplace safety management							
2.	Code	2LEAN12						
3.	Study group(s)	Lean management						
4.	The organizer of the	"Ss. Cyril and Methodius" University in Skopje, Faculty of						
	study program (unit,	Mechanical Engineering - Skopje,						
	institute, department)	Institute for Manufac	turing En	gineering and Ma	anagement			
5.	Level (first, second, third	second						
	degree)				_			
6.	Academic year / semester	academic year	Ι	Semester	II/summer - II/winter			
7	ECTS credits	6						
8.	Professor	Prof. PhD Jasmina (Chaloska					
		Ph.D / Assistant Pr	ĸi					
9.	Language	English						

10.	Prerequisi	ites for the course	None						
11.	Course ob (competer	ojectives nces)	To create a good safety culture, health and safety program, written action plan to identify and control hazards, define safety responsibilities and respond to emergencies that result in the prevention of accidents and occupational diseases. The objective of a course is to integrate safety and health into all work practices and conditions.						
12.	Detailed o	content of the	Safety policy, iden	fety policy, identification and correct unsafe acts and conditions with potential to cause injury or disease identification the cause of an					
	learning r	esults per unit	injury or disease t	y or disease to prevent recurrences including near miss incidents					
		-	which could have	which could have resulted in injury or disease, Hazard Identification					
			System, risk as Implementation an	ssessment, Work	COSH system	es, Monitoring for			
13	Connection courses	on with other	/						
14.	Study mer	thods	Interactive lectures	s, auditory and/or l	aboratory pi	ractice, self running			
15	Total have		and/or team work	on project assign	nents, self r	unning assignments			
15.	I otal hou	rs Lab	6 ECIS x 30 = 180	J hours	$akc \times 2$	30 hours			
10.	Lectures/1	Lau	16.2	Lectures (15 web	rk	30 hours			
			16.3	Luo (student wo	IK)	50 110015			
	Project		17.1.	Project assignme	nts 30 hours				
17.	Work/Assignments		17.2.	Individual assign	nments	ments 30 hours			
			17.3.	Self-study		60 hours			
18	Prerequisi	ites for taking	Seminar work deli	vered and approve	d				
	the final e	exam			-				
	D · /)	r 1							
19	Points / N	larks			-				
19	Points / N 19.1.	Partial exams ((points)			/			
19	Points / M 19.1. 19.2.	Partial exams (Projects (point	(points) (s)			/ 40			
19	Points / M 19.1. 19.2. 19.3.	Partial exams (Projects (point Final exam (po	(points) (s) (points)			/ 40 60			
19 20	Points / M 19.1. 19.2. 19.3. Grading s	Partial exams (Projects (point Final exam (po cale	(points) rs) pints)	Under 50		/ 40 60 5 (five) (F)			
19 20	Points / M 19.1. 19.2. 19.3. Grading s	Partial exams (Projects (point Final exam (po cale	(points) (s) pints)	Under 50 51 - 64		/ 40 60 5 (five) (F) 6 (six) (D)			
19 20	Points / M 19.1. 19.2. 19.3. Grading s	Partial exams (Projects (point Final exam (po cale	(points) (points)	Under 50 51 - 64 points		/ 40 60 5 (five) (F) 6 (six) (D)			
19 20	Points / M 19.1. 19.2. 19.3. Grading s	Partial exams (Projects (point Final exam (po cale	(points) (points)	Under 50 51 - 64 points 65 - 74 points		/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C)			
19 20	Points / M 19.1. 19.2. 19.3. Grading s	Partial exams (Projects (point Final exam (po cale	(points) (s) pints)	Under 50 51 - 64 points 65 - 74 points 75 - 84 points		/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 0 (ning) (A /(B+))			
19 20	Points / M 19.1. 19.2. 19.3. Grading s	Partial exams (Projects (point Final exam (po cale	(points) (s) pints)	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 85 - 94 points		/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+)			
20	Points / M 19.1. 19.2. 19.3. Grading s	Partial exams (Projects (point Final exam (po cale	(points) (points)	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 85 - 94 points 95 - 100 points		/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+)			
19 20 21.	Points / M 19.1. 19.2. 19.3. Grading s	Partial exams (Projects (point Final exam (po cale	(points) (s) pints)	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 85 - 94 points 95 - 100 points Student question	naire Studer	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire			
19 20 21.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Partial exams (Projects (point Final exam (po cale	(points) (s) pints)	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 85 - 94 points 95 - 100 points Student question	naire Studer	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire			
19 20 21.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Partial exams (Projects (point Final exam (po cale valuation s	(points) (s) pints) erials	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 85 - 94 points 95 - 100 points Student question	naire Studer	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire			
19 20 21.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Partial exams (Projects (point Final exam (po cale valuation s Instruction mate No.	(points) (s) pints) erials Author	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 85 - 94 points 95 – 100 points Student question	naire Studer	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire Year			
19 20 21.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Partial exams (Projects (point Final exam (po cale valuation s Instruction mate No.	(points) (s) pints) erials Author	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 95 - 100 points Student question Title	naire Studer Publish er	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire Year			
19 20 21.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Partial exams (Projects (point Final exam (po cale valuation s Instruction mate No. 1.	(points) (s) pints) erials Author J.Chaloska	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 95 - 100 points Student question Title Workplace	Publish er Internal	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire Year 2017			
19 20 21. 22.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Iarks Partial exams (Projects (point Final exam (point) cale valuation s Instruction mate No. 1.	(points) (s) pints) erials Author J.Chaloska	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 95 - 100 points Student question Title Workplace safety	Publish er Internal book,	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire Year 2017			
19 20 21. 22.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Partial exams (Projects (point Final exam (po cale valuation s Instruction mate No. 1.	(points) (s) pints) erials Author J.Chaloska	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 95 - 100 points Student question Title Workplace safety management	Publish er Internal book, MFS	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire Year 2017			
19 20 21. 22.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Partial exams (Projects (point Final exam (po cale valuation s Instruction mate No. 1. 2.	(points) (s) pints) erials Author J.Chaloska Roger L. Brauer	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 95 - 100 points Student question Title Workplace safety management Safety and Health for	Publish er Internal book, MFS John Wilay	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire Year 2017 2016			
19 20 21. 22.	Points / M 19.1. 19.2. 19.3. Grading s Course ev Textbook	Partial exams (Projects (point) Final exam (point) cale valuation s Instruction mate No. 1. 2.	(points) is) pints) erials Author J.Chaloska Roger L. Brauer	Under 50 51 - 64 points 65 - 74 points 75 - 84 points 95 - 100 points Student question Title Workplace safety management Safety and Health for Engineers	Publish er Internal book, MFS John Wiley and	/ 40 60 5 (five) (F) 6 (six) (D) 7 (seven) (C) 8 (eight) (B-) 9 (nine) (A-/B+) 10 (ten)(A/A+) nt questionnaire Year 2017 2016			

	3.	Benjamin O. Alli	Fundamental principles of occupational health and safety	ILO
	Supplemental Ir	struction Materials		
	No	Author	Title	Publis

	Supplemental Ir	struction Materials			
	No.	Author	Title	Publish	Year
				er	
	1.	James Reason	Managing the	Ashgate	2015
22.2.			Risks of	Publishi	
			Organizational	ng	
			Accidents		
	2.				
	3.				

Add	1. 3	Course program for the second level (second cycle – postgraduate) of studies						
1.	Course title	Total productive Maintenance						
2.	Code	2LEAN13						
3.	Study group(s)	Lean management						
4.	The organizer of the	"Ss. Cyril and Meth	odius" Un	iversity in Skopje,	Faculty of			
	study program (unit,	Mechanical Enginee	ering - Sko	pje,				
	institute, department)	Institute for Manufacturing Engineering and Management						
5.	Level (first, second, third	second						
(degree)							
0. 7	Academic year / semester	academic year	academic year I Semester II/summer – II/s					
0	Professor	0 Deef DED De decil De Leerderecile:						
0.	Professor	PIOL PILD Kaulill P	olenakovn	-J				
9.	Language	English						
10	Prerequisites for	None						
10.	enrolling the course							
11.	Course objectives	Students will be cap	able to rec	ognize the need fo	r implementation of			
	(competences)	new methods for maintenance in the production companies; planning						
		and implementation	of TPM (Fotal productive N	laintenance)			
12.	Detailed content of the	Introduction to main	ntenance m	anagement; struct	ure of maintenance			
	course and units with the	function in producti	on compar	ies; Maintenance i	in service sector;			
	learning results per unit	Different methods o	of Maintena	ince; Reliability; P	reventive and			
		Predictive Maintena	ince; Intro	fuction of TPM; T	PM and tools for			
		process improvement	nts in main	tenance; Softwer s	upport to			
12	Composition with other	Maintenance; LEAN	N and main	tenance				
15		1						
14	Study methods	Interactive lectures	auditory	nd/or laboratory n	actica calfrunning			
14.	Study methods	and/or team work of	on project	assignments selfru	nning assignments			
15	Total hours	6 ECTS x 30 = 180	hours	issignments, sennu	anning assignments			
16	Lectures/Lab	16.1.	Lectures (15 weeks x 2	30 hours			
10.		16.2.	Lab (stude	ent work)	0 hours			
		16.3.						

	D		17.1	D · · · ·		(0.1
17	Project		1/.1.	Project assignme	ents	60 hours
17.	WORK/Ass	signments	17.2.	Individual assign	ments	30 hours
			17.3.	Self-study		60 hours
18	Prerequis	ites for taking	Seminar work deliv	ered and approved		
10	the final e	exam Aculta				
19	19 1	Partial exams	(points)			/
	10.2					10
	19.2.	Projects (point	ts)			40
	19.3.	Final exam (pe	oints)			60
20	Grading s	cale		Under 50		5 (five) (F)
				51 - 64		6 (six) (E)
				points		7 () (D)
				65 - /4 points		$\frac{1}{2} \frac{1}{2} \frac{1}$
				75 - 84 points 85 - 94 points		$\frac{8 \text{ (eight)} (C)}{9 \text{ (ninc)} (P)}$
				95 - 100 points		$\frac{9 \text{ (lille) (B)}}{10 \text{ (ten)}(A)}$
21.	Course ev	aluation		Student question	naire	
	Textbook					
	TEXIDOOK	5	• •			
		Instruction mat	erials			
		No.	Author	Title	Publish	Year
					er	
		1.	Donev V	Maintenance	System	2010
		2	Different outhors	Salastad assa	Ť	
	22.1.	2.	Different autions	studies videos		
				Journal papers		
				etc		
		3. Joel Levitt		Lean	Industr	2008
				Maintenance	ial	
					Press,	
		~			Inc.;	
		Supplemental I	nstruction Materials			
22.		No.	Author	Title	Publish	Year
					er	2021
		1.	K. Peng	Equipment	Produc	2021
				Management in	tivity Droce	
				Maintenance	Press	
				Era: A New		
	<u></u>			Alternative to		
	22.2.			Total		
				Productive		
				Maintenance		
				(TPM)		
		2.	M. Stephens	Productivity	Purdue	2022
				and Keliability-	Univer	
				Maintenance	Press	
				Management	1 1000	

	3.	N. Rich	Total	Liverp	2001
			Productive	ool	
			Maintenance:	Busine	
			The Lean	SS	
			Approach	Publish	
				ing	

Add	Add. 3 Course program for the second level (second cycle - postgraduate) of studies							
1.	Course title	TQM						
2.	Code	2LEAN	2LEAN14					
3.	Study group(s)	Lean M	Lean Management					
4.	The organizer of the study program	"Ss. Cy	"Ss. Cyril and Methodius" University in Skopje,					
	(unit, institute, department)	Faculty	Faculty of Mechanical Engineering – Skopje					
		Institut	of Production Engineer	ring and Management				
5.	Level (first, second, third degree)	Second	degree					
6.	Academic year / semester	academ	c year I Sem	lester II/summer – II/winter				
7.	ECTS credits		6 ECT	ſS				
8.	Professor	Prof. D	. Sc. Gligorche Vrtanos	ki				
9.	Prerequisites for enrolling the course	None						
		Comple	ted undergraduate studi	es				
10.	Course objectives (competences):							
	This course will contribute to getti	ng acquir	es knowledge about th	e overall activities that are				
	undertaken within an organization to a	achieve th	goals of the Total Qual	ity Management philosophy.				
11.	1. Course content:							
	Introduction to Total Quality Manage	ment phil	sophy as a tool for imp	proving the performances of				
	companies. Basics of TQM. Custome	r focus ar	d satisfaction. Participa	tion and teamwork. Process				
	management and continuous improve	ement. In	rastructure, practice, qu	ality tools and techniques.				
	Quality function deployment. Leaders	hip and st	ategic planning. Manag	ement of measurements and				
	strategic information. Human resource	es manage	ment. Performance mea	sures. Audit, evaluation and				
	final scores. Organization and implem	entation of	f TQM.					
12.	Study methods: Interactive lectures, and	uditory an	l/or laboratory practice,	self running and/or team				
	work on project assignments, self runi	ning assig	iments					
13.	Total hours		6 ECTS x 30 = 180 hot	lrs				
14.	Hours allocation per activity:		30+20+80+20+30=180	hours				
15.	Lectures/Lab	15.1.	Lectures	30 hours				
			(15					
			weeks x					
			2)					
		15.2.	Lab	20 hours				
			(student					
			work)					
16.	Project Work/Assignments	16.1.	Project	80 hours				
			assignme					
			nts					
		16.2.	Individu	20 hours				
			al					
			assignme					
			nts					
		16.3.	Self-	30 hours				
			study					
17.	Points/Marks:							
	17.1. Exams			30 points				

	17.2.	I	Projects			60 points	
	17.3.	A	Attendance			10 points	
18.	Grading	g scale		Under 50		Fail 5 (five) (F)	
				51 - 64	Sufficient 6 (six) (D		
				points			
				65 - 74		Good 7 (seven) (C)	
				points			
				75 - 84	Ve	ery Good 8 (eight) (B-)	
				points			
				85 - 94	Exc	ellent 9 (nine) (A-/B+)	
				points			
				95 - 100	Exe	cellent 10 (ten) (A/A+)	
				points			
19.	Prerequ	isites	for taking the final exam	Seminar works d	elivered and ap	proved	
20.	Langua	ge		English			
21.	Course	evalua	ition	Student question	uestionnaire and other methods for continu ation		
				self evaluation			
22.	Textbo	oks					
	22.1	Instr	uction materials	- 1			
		No.	Author	Title	Publi	Year	
					sher		
		1.	Gligorche Vrtanoski	Unauthorized lec	tures Faculty	2018	
				of the Methods a	nd of		
				Techniques of To	QM Mechan		
					1cal		
					Engine		
		2	Stanhan Gaarga Arnald	Total Quality	John	1008	
		۷.	Weimenskinch	Total Quality	JOIIII Wilvo	1998	
			weinierskirch	Strategies and	w liye		
				Techniques	& Sons		
		3	John Oakland	TOM Text with	Butter	2003	
		5.		Cases	worth	2003	
					Heinem		
					ann		
	22.2	Supp	emental Instruction Materia	ls	•	·	
		No.	Author	Title	Publishe	Year	
					r		
		1.	Fiorenzo Franceschini	Advanced Qualit	y ST.	2002	
				Function	Lucie		
				Deployment	Press		
		2.	Tauseef Aized	Total Quality	InTech	2012	
				Management and	L		
				Six Sigma			
		3.	Graeme Knowles	Quality	Bookbo	2011	
1		1	1	Management	on.com		

Add. 3 Course program for the second level (second cycle - postgraduate) of				
1.	Course title	Ergonomic systems		
2.	Code	2LEAN15		
3.	Study group(s)	Lean Management		
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, s	second	, third degree)		Se	econd			
6.	Acader	nic ye	ar / se	mester		ac	cademic year I	Semester	II/sum	mer – II/winter
7	ECTS	credits				6				
8.	Profess	or				Pr	rof. PhD Jasmina Cl	haloska		
9.	Prerequ	uisites	for en	rolling the course		None				
10.	Course Enhance range of schedu student materia organis	objec ce und of circu ling, e s in ar al and sation.	tives (erstand umstan evaluat ny orga ideas	competences): ding in an area of erg ices. The student is e tion and written com anisation who can ap from this ergonomic	gonom xpecte nmuni oply er s cour	nic ed ica rgo rse	s systems, and to de to develop skills in r ation. This course is ponomics in their wor to a real ergonomic	velop skill research, ir designed k. The car cs investig	s applic nvestiga to be adidates ation of	cable in a wide tion, planning, undertaken by will apply the f value to their
11.	Course The co biomec display assessm standar tasks w	conte ourse te chanics scree nent, v rds and vithin d	nt: opics s; worl n equ virtual d com organiz	include: introduction place design; work s ipment; effects of e design of working pla petencies when appli- zations.	n to en seating nviror aces, p lying o	rgo g; nm ora er§	onomics; the body a work related upper l nental factors; influe actice within organiza gonomics; presentat	at work; a imb disord ence of wo ations; eth ion skills;	nthropc lers; ma ork org ical issu practic	ometry; simple nual handling; anization, risk ues; legislation, al ergonomics
12.	Study 1 work o	Study methods: Interactive lectures, auditory and/or laboratory practice, self running and/or team work on project assignments, self running assignments								
13.	Total hours				0		6 ECTS x 30 = 180	hours		
14.	Hours allocation per activity:						30+30+30+30+60=	180 hours		
15.	Lectures/Lab 15.				15.1.		Lectures (15 weeks x 2) 3		30 hours	
					15.2.		Lab (student work)			30 hours
16.	Project	Work	/Assig	gnments	16.1.		Project assignments	5		30 hours
					16.2.		Individual assignments			30 hours
					16.3.		Self-study			60 hours
17.	Points/	Marks	:							
	17.1.	E	Exams							70 points
	17.2.	Р	roject	5						20 points
	17.3.	A	Attenda	ance						10 points
18.	Gradin	g scale	e	Unde	r 50%					5 (five) (F)
		0		51	- 64%	,				6 (six) (D)
				65	- 74%					7 (seven) (C)
				75	- 84%	,				8 (eight) (B-)
				85	- 94%				9 (n	ine) (A-/B+)
10	Drorogi	licitor	for tal	95 -	100%	Se	aminar work daliver	ad and ann	10 roved	(ten)(A/A+)
1 <i>7</i> .	Longe		iui tal	ang the fillar exall		50		la ana app	uoveu	
20.	Langua	ige				EI				
21.	Course	evalu	ation			St	ludent questionnaire			
22.	Textbo	oks								
	22.12	Instru	uction	materials						
		No.		Author			Title	Publis	her	Year
		1.	J. Ch	aloska		Eı	rgonomic	Interna	al	2017
						sy	vstems	book MFS	,	

	2.	R.S. Bridger	Introduction to Ergonomics	Taylor & Francis	2003
	3.				
22.2	Supp	lemental Instruction Materials			
	No.	Author	Title	Publisher	Year
	1.	Scott Openshaw, Erin Taylor	Ergonomics and Design	Allsteel Inc.	2006

Add	1. 3	Course program for the second level (second cycle – postgraduate) of studies				
1	Course title	Energy economics				
2	Code	2LEAN16				
3	Study group(s)	Lean Management				
4	The organizer of the	"Ss Cyril and Metho	odius" Ui	niversity in Sko	pie Faculty of Mechanical	
	study program (unit	Engineering - Skopie	e	n erendy in one	pje, i dealey of meenamen	
	institute. department)	Institute for Manufa	cturing E	ngineering and	Management	
5.	Level (first, second, third	second	0	8 8	8	
	degree)					
6.	Academic year / semester	academic year	Ι	Semester	II/summer – II/winter	
7	ECTS credits	6				
8.	Professor	Associate professor	Igor Shes	ho		
9.	Language	English				
10.	Prerequisites for	-				
11	enrolling the course		• 11 (··· · · 1 1	• 1 1 .•	
11.	Course objectives	Definition of econom	nically ef	ficient technolo	bgies, by conducting a	
	(competences)	detailed techno-econ	iomic ana	ilysis with the s	A natural and antimization	
		technology for energy	gy conver	sion processes.	Analysis and optimization	
		during the definition	of system	ns (devices) for	r the implementation of	
		production (thermal	energy n	lew and existing	cooling air conditioning	
		industrial technologi	cal proce	ants), neating,	cooling, an conditioning,	
		Acquiring knowledg	e on calc	ulation of LCO	F (Levelized Cost of	
		Electricity) net prese	ent value	(NPV) interna	al rate of return (IRR)	
		conducting analysis	of life co	sts - Life Cycle	Cost Analysis. Using	
		economic software (SAM-Sv	stem Advisor N	(odel) for the analysis of	
		investments in renew	vable ene	rgy sources		
12.	Detailed content of the	Study of the method	ology for	calculation of	LCOE (Levelized Cost of	
	course	Electricity), net pres	ent value	(NPV), interna	al rate of return (IRR),	
		analysis of life costs	- Life Cy	cle Cost Analy	vsis. Application of	
		economic software (SAM-Sy	stem Advisor N	Model) for the analysis of	
		investments in system	ms for the	e transformatio	n of renewable energy	
		sources with application	tion to: e	lectricity produ	ction (thermal energy	
		plants), heating, cool	ling, air c	onditioning, in	dustrial technological	
		processes.				
13	Connection with other courses	/				
14.	Study methods	Interactive lectures,	auditory	and/or laborato	ry practice, self running	
		and/or teamwork on	project a	ssignments, sel	f running assignments	
15.	Total hours	6 ECTS x 30 hours=	180 hour	s		

16.	Lectures/Lab		16.1.	Lectures		30 hours
			16.2.	Lab (student work	x)	30 hours
			16.3.	Practice		0 hours
	Project		17.1.	Project assignment	its	30 hours
17.	Work/Ass	signments	17.2.	Individual assignment	nents	30 hours
			17.3.	Self-study	Self-study 60 hours	
18	Prerequisi	ites for taking	Seminar wor	k delivered and app	roved	
10	the final e	xam				
19	Points / N	larks	(nointa)			0
	19.1.	Partial exams (points)			0
	19.2.	Projects (point	s)			50
	19.3.	Final exam (po	oints)			50
20	Grading s	cale		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)
21	C	1		95 - 100 points	•	10 (ten) (A)
21.	Course ev	aluation		Student questionn	aire	
	Textbook	S				
		Instruction mate	erials			
		No.	Author	Title	Publisher	Year
		1.	Multiple	Modeling and	Intech	2012
			authors	Optimization of		
			edited by	Renewable		
			Arzu	Energy Systems		
			Şencan			
		2	Şahın Waltar	A Managal fair	NI-4 1	2005
		2.	Walter	A Manual for	National Denouvable	2005
			Daniel I	Evaluation of	Energy	
	22.1		Packey	Energy	Laboratory	
	22.1.		and	Efficiency and	Luceratory	
			Thomas	Renewable		
22.			Holt	Energy		
				Technologies		
		3.	Jefferson	Sustainable	Ars	2012
			W. Tester,	energy:	Lamina	
			Elisabeth M. Drolto	choosing among		
			M. Drake, Michael I	options		
			Driscoll			
			Michael W.			
			Golay			
		Supplemental In	nstruction Mate	erials		
		No.	Author	Title	Publisher	Year
	22.2.	1.				
		2.				
		3.				

Add	. 3		Course program for the second level (second cycle – postgraduate)					
1	<u> </u>	1	of studies					
1.	Course tit	le	Project Cycle Mar	agement				
2.	Code		ZLEAN1/					
<i>3</i> .	Study grou	up(s)	Lean management		anaitas in Classi	- Familty of		
4.	The organ	izer of the	Ss. Cyrll and Meu	aming Shap	is stop	e, Faculty of		
	study prog	gram (unit,	Institute for Monuf	ering - Skop	je, incoming and M	anagamant		
5	Loval (fire	t second third	institute for Manuf	acturing Eng	meening and M	anagement		
5.	degree)	si, second, tillid	second					
6.	Academic	vear / semester	academic vear	I	Semester	II/summer – II/winter		
7	ECTS cree	dits	6					
8.	Professor		Prof. PhD Radmil I	Polenakovikj				
			Ph.D / Assistant Pr	ofessor Trajo	che Velkovski			
9.	Language		English					
10.	Prerequisi enrolling t	tes for he course	None					
11.	Course ob	jectives	Students will be car	pable to reco	gnize the need	for working in teams;		
	(competen	ices)	planning and imple	mentation of	f complex proje	cts; to implement		
			project managemen	t tools (logic	cal framework r	natrix, time		
			management, perfo	rmance man	agement, WBS,	etc.); to lead project		
			teams					
12.	Detailed c	ontent of the	Historical overview of project management; project organizational					
	course and	l units with the	structure; time man	agement; scl	heduling, perfor	mance management		
	learning re	esults per unit	(KPI); cost management and budgeting; risk management; monitoring					
13	Connectio	n with other						
15	courses	ii with other	,					
14.	Study met	ethods Interactive lectures, auditory and/or laboratory practice, selfrunning						
			and/or team work	on project as	ssignments, self	running assignments		
15.	Total hour	S	6 ECTS x 30 = 180	hours		1		
16.	Lectures/I	Lab	16.1.	Lectures (15 weeks x 2)		30 hours		
			16.2.	Lab (studer	nt work)	0 hours		
			16.3.					
. –	Project		17.1.	Project assi	ignments	60 hours		
17.	Work/Ass	Ignments	17.2.	Individual	assignments	30 hours		
			17.3.	Self-study		60 hours		
18	Prerequisi	tes for taking	Seminar work delive	ered and appr	roved			
10	the final e	xam						
19	Points / M	arks	(n ainta)			1		
	19.1.	Partial exams (<u>)</u>			/		
	19.2.	Projects (point	s)			40		
	19.3.	Final exam (po	oints)			60		
20	Grading so	cale		Unde	er 50	5 (five) (F)		
				51	- 64	6 (six) (D)		
				p	oints	- () (2)		
	65 - 74 points 7 (sever					7 (seven) (C)		
				<u>75 - 84 p</u>	oints	8 (eight) (B-)		
				85 - 94 p	oints	9 (nine) (A-/ B +)		
21	Conversion	almation		<u>95 – 100 p</u>	oints	10 (ten)(A/A+)		
21.	Course ev	aluation		student que	estionnaire			
22	Textbooks	5						
	22.1.	Instruction mate	erials					

		No.	Author	Title	Publish	Year
					er	
		1.	Polenakovikj R.,	Project	FME,	2019
			Jovanovski B.	management	UKIM	
				(Internal		
				textbook)		
		2.	Different authors	Selected case		
				studies, videos,		
				Journal papers,		
		2		etc		
		J. Sumplemental In				
		Supplemental II	Istruction iviaterials			
		No.	Author	Title	Publish	Year
				G 6.1	er	2017
		1.	J. Gido, J.	Successful	Cengag	2017
			Clements	Project	e	
				$(7^{\text{th}} \text{ ed})$	Learni	
		2	Project	(/ cu.)	Droject	2021
		۷.	Management	Project	Manag	2021
	22.2.		Institute	Management	ement	
				Body of	Institut	
				Knowledge	e	
				(PMBOK(R)		
				Guide-Sixth		
				Edition / Agile		
				Practice Guide		
				Bundle (Pmbok		
				Guide)		
		3.				

APPENDIX NO. 4

1. Data for persons who teach and for mentors of doctoral studies in accordance with Article 7 of the Rulebook on the content of study programs ("Official Gazette of the Republic of Macedonia", no. 79 /20 23)

Add	. 4	Info	ormation about th	ne teachers that lecture at the first, second and third study program and are					
		men	ntors on the doct	oral thesis					
1.	Name(I	irst, L	ast)	Robert Minovski					
2.	Date of	birth	(m 1	20.11.1964					
3.	Scientif	ic degr	ee/Title	PhD DD: T 1 : 10 :					
4.	Title of	the sci	ientific degree	PhD in Technical Scier	nces	T			
5.	Y ear and institution of the			Education	Year	Inst	itution		
	scientifi	ic degr	ee	PhD in Technical	1999	Fac	ulty of Mechanical		
				Sciences		eng	ineering - Skopje		
				M.Sc. in Mechanical	1994	Fac	ulty of Mechanical		
				Engineering		eng	ineering - Skopje		
				B.Sc. in Mechanical	1989	Fac	ulty of Mechanical		
				Engineering		eng	ineering - Skopje		
6.	Area, fi	eld and	l particular	Area	Field	Spe	cialty		
	specialt	y of m	aster of science	Technical sciences	Mechanical				
	degree				Engineering				
7.	Area, fi	eld and	l particular	Area	Field	Spee	cialty		
	specialt	y of D	octoral degree	Technical sciences	Industrial				
					Engineering				
					and				
					Management				
					Mechanical				
					engineering				
8.	3. If employed, state the			Institution			Title and area		
	instituti	on whe	title and area	UKIM, Faculty of Me	echanical Engineerin	ng	Full time professor		
	in which	h is not	nine and area				Mechanical		
	III WIIIC	11 15 11a	llicu	engineering					
9.	List of o	courses	s that the teacher	r is lecturing separately for first, second and third cycle					
	9.1.	List of	courses that the	teacher is lecturing in the	e first cycle				
		No.	Course		Study program/Inst	itutior	1		
	_	1.	Design of Info	ormation Systems	Industrial Enginee	ring a	nd Management		
	-	2.	Management	of Information	Industrial Enginee	ring a	and Management		
			Systems				8		
		3.	Work Study		Industrial Enginee	ring a	and Management		
	_	4.	Production Sy	vstems	Industrial Enginee	ring a	and Management		
	9.2.	List of	courses that the	teacher is lecturing in the	e second cycle	8	8		
	No. Course			0	Study program/Inst	itutior	1		
	1. Business Info			rmation Systems	Industrial Enginee	ring a	nd Management.		
				5	Modeling and Sim	ulatic	on of Plastic		
					Deformation Tech	nolog	ries and		
					Processes		,		
		2.	Restructuring	of Organizations	Industrial Enginee	ring a	nd Management		
		3.	Contemporary	v Production Systems	Industrial Enginee	ring a	and Management		
	-	4.	Motivation an	d Compensation	Industrial Enginee	ring a	and Management		
		-	Systems		industrial Engineering and Management				

		5.	Lean Thinking	5	Lean Management			
		6.	Lean Tools 2		Lean Management			
		7.	Design of Qua	ality Management	Lean Management,	Industrial Engineering and		
			Systems in ac	cordance with ISO	Management, Qual	ity Management (Faculty of		
		-	9001		Technology and M	etallurgy)		
		8.	Lean Project		Lean Management			
		9.						
	9.3.	List o	f courses that the	teacher is lecturing in the	e third cycle			
		No.	Course		Study program/Insti	tution		
		1.	Performance	Measurement Systems	Industrial Engineer	ing and Management		
		2.	Integrated Qu	ality Management	Industrial Engineer	ring and Management		
		2	processes	· 1.1' 1	L. 1 1 E	1.		
		3.	Approaches f	or modeling and	Industrial Engineer	ring and Management		
		4	Simulation of	t business	L 1 1 E	1 1 1 1		
		4,	Managerial p	roduction	Industrial Engineer	and Management		
10	Calaat		philosophies					
10.		ed resu	its in the past inv	e years				
	10.1.	No	Author	Title		Publisher/voor		
		1 1	Author Minovski P	Lean implementation or	d implications:	International Journal of		
		1.	Iovanoski	experiences from Mace	donia	Loop Six Sigma Vol. 12 No.		
			B Galevski	experiences from wheek	donna	1 pp 78 97 2021		
			P.			1, pp. 78-97, 2021		
		2.	Stanojeska,	Top Management Role	Top Management Role in Improving the			
			М.,	State of QMS under the	Influence of	Engineering and		
			Minovski, R.,	Employee's Involvement	nt: Best Practice	Management JIEM, 13(1):		
			Jovanoski, B.	from the Food Processin	ng Industry	93-119, 2020		
		3.	Jovanoski,	Integration of value stre	am mapping &	18th International Scientific		
			B., Minovski,	discrete event simulation	n: A case study	Conference on Industrial		
			R., Todorov,	from Lean		Systems – Industrial		
			M.,			Innovation in Digital Age,		
			veikovski,			2020 published in P. Lelie et al		
			1., Iovanovski			(Ed_s) : IS 2020		
			D			LNMUINEN Springer		
			5.			nature: 201–207.		
						http://doi.org/10.1007/978-		
						3-030-97947-8 27		
		4.	Stojanovska,	Motivation for patenting	g – Delphi method	ANNALS of Faculty		
			J., Minovski,	approach		Engineering Hunedoara –		
			R.,			International Journal of		
			Jovanoski, B.			Engineering Tome XVIII		
						[2020], Fascicule 2 [May],		
		-			C 1	p.p. 83-89, 2020		
		5.	I odorov, M.,	Key Performance Indica	ators for lean:	International Journal of		
			Jovanoski, D. Minovalci	Literature review and re	commendations	Modern Studies in		
			D., IVIIIIOVSKI,			Mechanical Engineering		
			.			(IJIVISIVIE), 5 (1), pp. 27-36,		
	10.2	D (C		2019		
	10.2.	Partic	ipation in scienti	Tic national and internatio	onal projects (up to 5)	Dublisher		
		1NO.	Author D. Miniwalai	Increasing the competit	wanage of the	Fublisher/year Financed by the European		
		1.	rt al	domestic SMEs in order	r to improve their	Commission through IDA I		
			οt. al.	cooperation with foreign	n investors'	2017-2019		

	-		• •	
			companies (InComSMEs), project	
	-		coordinator and consultant	
	2.	A. Kocov, R. Minovski	Mapping economic, innovation and scientific potential for Smart	GIZ funded project, 2019
		et.al.	Specialization, member	
	3.	B. Jovanoski,	Learn4SMEs- Learning Factory for	EIT-M funded project, 2022
		R. Minovski	Improving Digital Competitiveness and	
		et. al.	Industry 4.0 Readiness of SMEs in	
			Balkans, member	
	4.	B. Jovanoski,	Advanced skills for competitive	Project financed by RCF,
		R. Minovski	manufacturing for developing a study	2022-
		et. al.	programme "Production supervisor	
			according to the needs of Lean Industry	
			4.0", member	
	5.	B. Jovanoski,	CompetenSEE - Hybrid training course for	EIT-M funded project,
		R. Minovski	promoting competence development in	2023-
		et. al.	manufacturing in South-East Europe,	
			member	
10.3.	Printe	d books in the la	st five years (up to 5)	D 11:1 /
	No.	Author	litle	Publisher/year
	1.	R. Minovski,	Increasing the competitiveness of the	In scope of the project
		Jovanoski,	SMEs using contemporary production	financed by the European
		B., Javan a alti D	approaches: book of cases.	Commission through IPA I,
	2	Jovanoski, D.		2017-2019
	2.			
10.4	J. Drinte	d professional p	aners in the last 5 years (up to 5)	
10.4.	No	Author	Title	Publisher/vear
	1	A	An Overview of the Digital Transformation	19th International Scientific
		Argilovski.	and Industry 4.0 Technologies	Conference on Industrial
		B. Jovanoski,	Implementation Frameworks	Systems - IoT Technologies
		R. Minovski	1	(IS'23), paper id. 03841
	2.	Stanojeska,	Assessment of the vitality of organizational	Proceedings of the XII
		М.,	learning, customer focus, and continuous	International Symposium
		Minovski, R.	improvement in Macedonian food	Engineering Management
		& Jovanoski	processing industry from TQM perspective	and Competitiveness (EMC
		В.		2022), pp. 112-118, 2022
	3.	Musliji, A.,	Digital twin applications in manufacturing	Proceedings of the 8th
		Jovanovski,	- literature review and research directions	International Conference on
		B., Minovski,		Industrial Engineering, pp.
		R.,		126-129, 2022
		Argilovski,		
		A.		
	4.	Argilovski,	Industry 4.0 for more competitive SMEs:	Proceedings of the 15th
		A.,	Review of existing Industry 4.0 Maturity	EPIEM Conference 2022 -
		Jovanovski,	Models	Creating a European IEM
		B., Kochov,		Future at the Intersection
		A., Minavalri D		Sustainability" np 41 47
		willovski, K.		- Sustainability, pp. 41-47,
	5	Iovanoski	Scheme for selecting the best simulation	Proceedings of the IV
	5.	B	approach for a suitable management level	international symposium
		Dinovski R	approach for a suitable management level	Engineering management
				and competitiveness (EMC
				2010 nn 57-62 2010
		1		2010/, pp. 57 02, 2013

11.	Superv	vision (m	nentorship) of u	ndergraduate, mast	ster and doctoral studies students				
	11.1.	Underg	graduate	0	Over 30				
	11.2.	Master			Over 10				
	11.3.	Doctor	al		3				
12.	For me	entors of	doctoral these	s, selected papers	for the last four/five years	or the last four/five years			
	12.1.	Proof o	of printed scient	ific research paper	s in international scientific	journals or international			
		scientif	fic publications	in the given field ((up to six) in the last five years				
		No.	Author	Title		Publisher/year			
		1.	Stanojeska,	Top Management	t Role in Improving the	Journal of Industrial			
			M., Minanalai	State of QMS und	der the Influence of	Engineering and			
			P	from the Food Pr	ocessing Industry	$03_{-110} 2020$			
			Jovanoski	from the Food Frocessing industry		75-117, 2020			
			B.						
		2.	Jovanoski,	Integration of val	ue stream mapping &	18th International Scientific			
			В.,	discrete event sin	nulation: A case study	Conference on Industrial			
			Minovski,	from Lean		Systems – Industrial			
			R., Iodorov,			Innovation in Digital Age,			
			velkovski			published in B Lalic et al			
			T.,			(Eds.): IS 2020.			
			Jovanovski,			LNMUINEN, Springer			
			D.			nature: 201–207.			
						http://doi.org/10.1007/978-			
		2	<u>Ctairman1-</u>	Madianatian famina	tenting Delations the 1	<u>3-030-97947-8</u> 27			
		3.	Stojanovska, 1	Motivation for pa	itenting – Delphi method	ANNALS of Faculty			
			J., Minovski	approach		International Journal of			
			R.,			Engineering Tome XVIII			
			Jovanoski,			[2020], Fascicule 2 [May],			
			В.	-		p.p. 83-89, 2020			
		4.	Todorov,	Key Performance	Indicators for lean:	International Journal of			
			M., Jawanashi	Literature review	and recommendations	Modern Studies in			
			B			Mechanical Engineering			
			Minovski,			(IJMISIME), 5 (1), pp. 27-36,			
			R.			2015			
		5.	Jovanoski,	Scheme for select	ting the best simulation	Proceedings of the IX			
			В.,	approach for a su	itable management level	international symposium			
			Minovski,			Engineering management			
			К.			2019) pp 57-62 2019			
		6.	B.	Introducing Hybr	id Learning to Learning	19th International Scientific			
		-	Jovanoski,	Factories	8 8	Conference on Industrial			
			S. Nixdorf,			Systems - IoT Technologies			
			P. Hoier, K.			(IS'23), paper id. 01941,			
			Kruusamäe,			2023			
			г. экаціс, А						
			Argilovski.						
			R.						
			Minovski,						
			M. Golec,						
			M. Hegedić,						
			F. Ansarı						

12.2.	Proof of at least two printed scientific research papers in international scientific journals with impact factor in the given field in the last five years								
	No	Author	Title	Publisher/vear					
	1.	Minovski, R., Jovanoski, B., Galevski, P	Lean implementation and implications: experiences from Macedonia	International Journal of Lean Six Sigma, Vol. 12 No. 1, pp. 78-97, 2021					
	2.								
12.3.	Proof	of at least three	participation in international meetings in the	e last four years					
	No.	Author	Title	International meeting/conference					
	1. 2.	M. Stanojeska, R. Minovski, B. Jovanoski Argilovski, A., Lovanovski	The Most Influential Policy and Infrastructures Factors in QMS – Practices from the Food Processing Industry Mapping the current research on the different viewpoints regarding relationship	XIII International Symposium Engineering Management and Competitiveness (EMC 2023), pp. 83-91, 2023 Proceedings of the 8th International					
	2	B., Minovski, R. & Musliji, A.	between Lean and Industry 4.0	Conference on Industrial Engineering, pp. 94-97, 2022					
	5.	Karov, I., Argilovski, A., Angelova, J., Minovski, R. Jovanovski, B.	simulation: a Lean case study.	Proceedings of the XX International Scientific Conference "Management and Engineering '22", pp. 43-48, 2022					

Add. 4	Information about th are mentors on the d	ne teachers that lecture at t loctoral thesis	he first, second	d and third study program and
1.	Name (First, Last)	Radmil Polenakovikj		
2.	Date of birth	March 14, 1967		
3.	Scientific degree / Title	Ph.D.		
4.	Title of the scientific degree	Ph.D. in Technical Sci	ences	
5.	Year and institution of the	Education	Year	Institution
	scientific degree	Ph.D in Mechanical Engineering	2001	Faculty of Mechanical engineering - Skopje
		M. Sc. in Mechanical Engineering	1994	Faculty of Mechanical engineering - Skopje
		B. Sc. in Mechanical Engineering	1992	Faculty of Mechanical engineering - Skopje
6.		Area	Field	Specialty

	Area,	field an	nd particular	Technical	sciences	ľ	Mechanical	Organization of	
	specia	alty of n	naster of science			e	engineering	production	
	degre	e							
7.	Area,	field an	d area of	Area		I	Field Specialty		
	docto	ral degr	ee	Technical	-	I	Industrial	21100 Methods for	
				technolog	ical sciences	s I	Engineering and	analyzing the structure	
						ſ	Management	and functioning of the	
8.	If em	ployed,	state the institution	Institution	l		Title and area		
	where	e he/she		Faculty of	Mechanica	1	Full time professor	Industrial Engineering	
	works	s and the	e title and area in	Engineeri	ng – Skopie		and Management (2)	1100 Methods for	
	which	n is nam	ed	Ss. Cyril a	and Methodi	usa	analyzing the structu	re and functioning of the	
				University	v in Skopje	C	organizations)	C	
9	Listo	f course	es that the teacher is	lecturing se	enarately for	r fir	est second and third	cycle	
9.	0.1	T ist o	of courses that the te	acher is les	turing in the	1 III	st, second and third	cycle	
	9.1.	List 0			turing in the		st cycle	tion	
		1	Entronronourshin	Study program/institution		f Maahaniaal			
		1.		ductrial En	ainaanina		M EME LIVIM		
		۷.	and Management	(IEM)	gineering	IIC)	IVI, FIVIL, UKIIVI		
		2	Monogomont	(12101)		IEI	M EME LIVIM		
		3. 4	Organizational P	abariar	ehavior IEM		EM EME LIKIM		
		4.							
	0.2	5. Innovation Management				IE			
	9.2.	List o	Courses that the te	acher 1s lec	turing in the	e se	cond cycle		
		NO.	Course	· · ·	(1	Su	udy program/institu	10n	
		I. Motivation and c			ns (With Dhd)	IE	M, MF, UKIM		
		2.	Project Cycle Management (with Ass.			IEI	M, MF, UKIM		
			Prof. Trajce Velk	ovski Phd) gement IEN					
		3.	Innovation Mana			IEM, MF, UKIM			
		4.	Logistics and Sup	ply Chain		IEI	M, MF, UKIM		
			Management						
		5.	Total productive	Maintenan	Maintenance IS		ISPPI, UKIM		
	9.3.	List o	of courses that the te	acher is lec	turing in the	e thi	ird cycle		
		No.	Course			Stı	Study program/institution		
		1.	Entrepreneurship	and innova	ition	IEI	M, UKIM		
		2	Management	a Dovalann	pont (with	IEI			
		۷.	Ass Prof Traice	S Developii Velkovski	PhD)				
		3	Project Managem	ent (with n	rof Vanco	IEI	Μ ΠΚΙΜ		
		5.	DOney PhD)	ioni ("nui p	ion vuneo				
10.	Selec	ted worl	c in the past five yea	ırs					
	10.1.	Relev	ant scientific printed	d paper (up	to 5)				
		No.	Author		Title			Publisher/year	
		1.	Mila Velkovska, R	Radmil	"Exploring	g the	e Potential of a	Springer Nature	
			Polenakovikj, Val	entina	Regional C	ωV	E in Green	Switzerland AG, 2023	
			Gecevska, Bojan J	ovanovski,	Innovation	: In	sights from Skopje		
			I rajce Velkovski		Kegion", C	nar	oter in the Book:		
		2.	Radmil Polenakov	ik, Bojan	Developme	ent	of modules for	UNIDO office in	
			Jovanovski, Trajce		green and e	entr	epreneurial learning	g Vienna, 2023	
			velkovski, Mila V	elkovska	IOT VET ec	luca	ation (Salam Colleg	e	

	3.	Mila Velkovska, Radmil Polenakovikj, Valentina Gecevska, Trajce Velkovski, Bojan Jovanovski, Liljana Polenakovikj, Nastasija Shterjova Uzunovska, Jelena Kostikj	Recognizing new trends in VET towards green transition: Experience from North Macedonia	15th annual International Conference of Education, Research and Innovation: Transforming Education, Transforming Lives, 09-11 November, 2022, Seville, Spain
	4.	Trajce Velkovski, , Radmil Polenakovikj, Bojan Jovanovski, Mila Velkovska, Liljana Polenakovikj, Nastasija Shterjova Uzunovska, Jelena Kostikj	Analysis of Innovative and Entrepreneurial Potential of Five Western Balkan Universities Supported by the HEI-INOVATE Initiative	15th annual International Conference of Education, Research and Innovation: Transforming Education, Transforming Lives, 09-11 Nov, 2022, Seville, Spain
	5.	Tasevska T, Glavas Dodov	Spray-dried snail mucus as raw	Macedonian
		M, Shalabalija D, Mihailova L, Polenakovikj R	material with potential for chronic wound treatment	bulletin, 2022
10.2.	Partici	pation in scientific national an	nd international projects (up to 5)	•
	No.	Author	Title	Publisher/year
	1.	Polenakovikj R, et al.	Project: "Building Capacity Towards Sustainable Human Capital Development" - funded by	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
	2.	Polenakovikj R, et al.	Project: "Enhancing ESM's (Power Plants of North Macedonia) role in North Macedonia's Just Transition" - funded by EBRD	PwC North Macedonia Advisory services, Skopje Office 2023- 2024
	3.	Charalabidis Y, Gecevska V., Polenakovikj R. et al	Project: "HEI Consortium Innovation and Entrepreneurship in the Domains of Digital Transformation, Circular Economy and Sustainable Development (PROMETHEUS)" - funded by EIT Manufacturing	University of the Aegean – Research Unit (UAEGEAN) Mytilini, Greece, 2021 - 2023
	4.	Stojanovic G, Polenakovikj R, et al.	Project: WBC-RRI.NET: Embedding RRI in Western Balkan Countries: Enhancement of Self-Sustaining R&I Ecosystems; funded by Program: Horizon 2020-SwafS-2020-1	Technical Faculty, University of Novi Sad, Serbia, 2021 - 2024

		5.	Jovanovski B., Polenakovikj R., Velkovski T., et al.	Project: GREENOVET: European VET Excellence Platform for Green Innovation, funded by Erasmus + programme KA3 Action, EACEA 33/2019	FH JOANNEUM Gesellschaft mbH, Graz, Austria, 2021 - 2024
·	10.3.	Printed	books in the last five years (u	up to 5)	
		No.	Author	Title	Publisher/vear
		1.	Polenakovikj R., Markovska M, Stankovska I., Jovanovski B.	Innovation management	NCDIEL print, 2019
		2.	Polenakovikj R., Gecevska V.	Innovation (9 th grade for primary schools)	Ministry of education and science, 2019
		3.	Polenakovikj R., Jovanovski B., Stankovska I.	Project Management (internal university textbook)	Faculty of Mechanical Engineering, 2019
		4.			
ľ	10.4.	Printed	professional papers in the las	t 5 years (up to 5)	
		No.	Author	Title	Publisher/year
		1.	Jovanovski B., Velkovski V., Polenakovikj R., Amevi Y., Franz A.	Making generations of engipreneurs – Boost entrepreneurial competences, intentions, and mindset of STEM students in a bootcamp	Proceedings of 1st International Conference on Academia-Industry Cooperation for Innovation", online and at the University of Vlora "Ismail Qemali", 15 Sep 2022, Vlore, Albania
		2.	Polenakovikj R.	Rapid assessment of the climate change integration in the education (Report)	UNDP office in Skopje, January 2021
		3.	Polenakovikj R, Holanders H., Kocov A, et al.	Mapping economic, innovation and scientific potential in Republic of North Macedonia (report), GIZ funded project	NCDIEL print, October 2019
		4.	Stankovska I., Polenakovikj L., Polenakovikj R., Shterjova N., Velkovski T.	Analysis of entrepreneurial educators for boosting the entrepreneurial potential in Europe	12th annual International Conference of Education, Research and Innovation, 11-13 November, 2019, Seville, Spain
		5.			
	Supervi	sion (n	nentorship) of undergraduate, r	master and doctoral studies students	3
	11.1.	Underg	graduate	Over 170	

1

	11.2.	Master			Over 60 (5 in pro	ogress)		
	11.3.	Doctora	al		8 finished and 2 in progress			
12.	For me	entors of	doctoral thesis, selected w	ork for t	he last four / five	years		
	12.1.	Proof of publicat	f printed scientific papers tions in the related field (u	in internation internation in internation in internation in internation in internation internation in internation intern	ational scientific j n the past five yea	ournals or in	nternational	
		No.	Author	Titl	e		Publisher/y	/ear
		1.	Velkovski T., Polenakovi R., Jovanovski B., Velkov	kj Infl vska the	uence of KnowHu HEInnovate resul	ab project to ts and	Proceeding Internation	gs of 1st al
			M., Kostikj J	prio thro Hub	ority areas for imp ough the Commerc	rovement cialisation	Conference Academia- Cooperatic Innovation at the Univ Vlora "Ism 15 Sep 202 Albania	e on Industry on for ", online and versity of nail Qemali", 22, Vlore,
		2.	Jovanovski B. R., Velkov T., Polenakovikj R., (aditors):	rski Con Cen	treept and Strategy tre of Vocational	of the Excellence	Faculty of Engineerin	Mechanical g, UKIM, 2021
		3.	Van Der Molen S., Kralev Polenakovikj R., Istrefi A Ursu S.	v P., Mar ., hub need cou	pping of digital in s (DIHs) and iden ds within Western ntries and of prosp	novation tification of Balkans pective	Civitta Bel March 202	grade, 1
		4.	Polenakovikj R., et al.	Con clus func	ncept model for de sters (monography ded by Ministry o	eveloping of v – project f economy)	NCDIEL p 2020	print, Skopje,
		5.	Stankovska I., Velkovski Polenakovikj R., Polenakovikj L., Shterjov N., Jovanovski B.	T., Con entr 'a wes esta	nparative analysis epreneurial behav tern Balkan unive blishing commerc	of the vior of five ersities for cialization	13th annua Internation Conference Education,	l al e of Research
		6.	Krstev D., Polenakovik R	Usin rela logi	ng SPSS for data a tionship between stics and circular	analysis of reverse economy	Internation Conference Education Sciences, I Economics 2020	al Virtual e – and Social Business and s, 10 June
	12.2.	Proof of impact	f at least two printed scien factor in the related field i	ntific pape n the pas	ers in internationa at five years	al scientific j	ournals that	t have
		No. 1.	Author Penaluna A, Penaluna K, Polenakovikj R.	Title Dev educ curr Mac	e reloping entrepren cation in national ricula: lessons fron cedonia and Wales	eurial school m North s	Publisher/y Entreprene education. 4:1-9.	vear purship 2020 Oct
	12.3.	Proof of	f at least three internationa	al meetin	gs' participation i	n the past fo	ur years	
		No.	Author	Title		Internationa meeting/con	l Iference	year
		1.	Jovanovski B., Polenakovikj R., Stankovska I., Velkovski T., Jovanoski B	Innovativ and smal Are their drivers d	veness of micro l enterprises – · innovation lifferent?	18th Interna Scientific C on Industria – Industrial	tional onference l Systems Innovation	2020

2.	Polenakovikj R.,	A methodology for	12th annual	2019
	Stankovska I., Penaluna	closing the gap between	International	
	A., Penaluna K.,	the competences of	Conference of	
	Jovanovski B.	students and recent	Education, Research	
		graduates and labour	and Innovation, 11-13	
3.	Polenakovikj L.,	Analysis of	13th annual	2020
	Petrovski D.,	entrepreneurial	International	
	Polenakovikj R.,	competences among	Conference of	
	Stankovska I., Velkovski	primary school students in	Education, Research	
	T., Shterjova N.	North Macedonia using	and Innovation, 09-11	
		EntreComp model	November, 2020,	
			Seville, Spain	

Add	. 4	Info	ormation about the tea	achers that lectu	chers that lecture at the first, second and third study program and			
	n	are	mentors on the docto	oral thesis				
1.	Name(First, La	lst)	Valentina Ge	cevska			
2.	Date of	f birth		09.09.1965				
3.	Scienti	fic degre	ee/Title	VIII / Dr.				
4.	Title of	f the scie	entific degree	Doctor in Technical Sciences				
5.	Year a	nd institu	ution of the	Education	Year	Institution	1	
	scienti	fic degre	e	B.Sc, in	1989	Faculty of	f Mechanical	
				Mechanical		Engineeri	ng-Skopje	
				Engineering				
				M.Sc. in	1995	Faculty of	f Mechanical	
				Mechanical		Engineeri	ng-Skopje	
				Engineering				
				Dr. in	2002	Faculty of	f Mechanical	
				Technical		Engineeri	ng-Skopje	
		~		Sciences		~		
6.	Area, f	ield and	particular specialty	Area	Field	Specialty		
	of mas	ter of sci	ience degree	Technical	Mechanical	Productio	n Process Planning	
_		~		sciences	engineering	~		
7.	Area, f	ield and	particular specialty	Area	Field	Specialty		
	of Doc	toral deg	gree	Technical	Mechanical	Productio	Production Engineering,	
				sciences	engineering	Technologies and Systems		
8.	If emp	loyed, sta be/she	ate the institution	Institution			Title and area	
	works	and the t	title and area in	University Ss. Cyril and Methodius,		odius,	Full time Professor,	
	which	is named		Faculty of Mechanical Engineering -		ering -	Production	
	winch	15 mannee	1	Skopje			engineering,	
							technologies and	
							systems;	
							Process organization	
9.	List of	courses	that the teacher is led	cturing separatel	y tor first, secon	d and third	cycle	
	9.1.	List of	courses that the teach	her is lecturing i	n the first cycle	/ T		
		No.	Course		Study program	/Institution		
		1.	Technological pro	cess design	Production En	gineering / l	Faculty of Mechanical	
				Engineering, U	niversity Sa	s. Cyril and Methodius		
					in Skopje			
		2.	Engineering econo	omic analysis	Industrial Engi	neering and	Management, Industrial	
					Design / Facul	lty of Mech	anical Engineering,	
					University Ss.	Cyril and M	lethodius in Skopje	
		3.	Management of ne	ew product	Industrial Engi	neering and	l Management,	
			development	Mechatronics / Faculty of Mechanical		Mechanical		

				Engineering, University Ss. Cyril and Methodius in Skopie
		4.	Computer Integrated Processes	Production Engineering, Mechatronics / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopje
			Production technologies	All study programmes / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopje
9	.2.	List of	courses that the teacher is lecturing i	n the second cycle
		No.	Course	Study program/Institution
		1.	Contemporary production processes and technologies	Advanced manufacturing systems and technologies / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopje
		2.	Intelligent processes and smart technologies	Advanced manufacturing systems and technologies, Modeling and simulation of plastic deformation technologies and processes /Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopje
		3.	Cutting metal manufacturing technologies (with cooperation of Prof. Dr. M. Tomov)	Advanced manufacturing systems and technologies / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopje
		4.	Engeering economic analysis	Industrial Engineering and Management, Product Lifecycle Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius- Skopje
		5.	Management of development for new products and services	Industrial Engineering and Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
		6.	Circular economy (with coope- ration of Prof. Dr. A. Kochov)	Industrial Engineering and Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
		7.	Product lifecycle management	Product Lifecycle Management; Metrology, management and control of quality / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
		8.	Eco-sustainability	Product Lifecycle Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
		9.	Innovation Management (with cooperation of Prof. Dr. R. Polenakovik)	Product Lifecycle Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
		10.	Quality Cost Management	Metrology, management and control of quality / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
		11.	Process Management	Management with Occupational Safety and Health Systems / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius- Skopje
9	.3.	List of	courses that the teacher is lecturing i	n the third cycle
		No.	Course	Study program/Institution
		1.	Engineering economical analysis	Industrial Engineering and Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje

		2.	Intelligent produce and computer inter processes	ction systems egrated	Mechanical En Engineering, U Skopje	gineering / Faculty of Mechanical niversity Ss. Cyril and Methodius-
10	Calaata					
10.		Selected results in the past five years				
	10.1.	No	Author	Title		Publisher/vear
		1	Feng H Zhang	Sensory evaluat	tion and	Journal of Food Processing and
			M., Gecevska V., Hao L., Zhang X.	prediction of bu physicochemica based on PCA-I method	al indicators PSO-LSSVM	Preservation, Wiley Periodicals LLC., ISSN: 1745-4549, J.Food Process Preserv.2022:00: e16343, Vol. 41/12, Jan 2022, WoS IF=2.19 Clarivate Analytics
		2.	Feng H., Zhang M., Gecevska V., Chen B., Saeed R., Zhang X.:	Modeling and evaluation of quality monitoring based on wireless sensor and blockchain technology for live fish waterless transportation		Computer and Electronics in Agriculture, Elsevier, 193 (2022) 106642, Jan 2022, WoS IF=4.59 Clarivate Analytics
		3.	Tomov M., Gecevska V., Vasileska E.	Modelling of multiple surface roughness parameters during hard turning: A comparative study between the kinematic- geometrical copying approach and the design of experiments method		Journal Advance in Production Engineering & Management Journal, Vol.17, No.1, March 2022, pp.75-88, WoS IF=3.382 Clarivate Analytics
		4.	Velkovska M., Polenakovikj R., Gecevska V., Jovanovski B., Velkovski V.	Mila Velkovska Polenakovikj, V Gecevska, Boja Trajce Velkovs	a, Radmil Valentina n Jovanovski, ki	Springer Nature Switzerland AG, 2023
		5.	Polenakovik R., Stankovska I., Jovanovski B., Gecevska V., Sutevski D., Velkovski T.	Innovativeness Companies: Evi Community Inn	in Macedonian idence from the novation Survey	Journal of Technical Gazzette, Vol.25, No.3, 2018, pp.910-915. [Indexed WoS SCI journals, IF=0,725 for 2018]
	10.2.	Partic	ipation in scientific n	ational and intern	national projects	(up to 5)
		No.	Author	Title		Publisher/year
	1. Gecevska V. HEI Consortium Innovation MK team and Entrepreneurship in the Domains of Digital Transformation, Circular Economy and Sustainable Development (PROMETHEUS) ID 21797		n Innovation urship in the gital , Circular Sustainable JS), ID 21797	2021-2023 Programme Horizon Europe: EIT European Institute for Innovation and Technology, HEI Initiative, EIT Manufacturing		
		2.	Gecevska V. Team leader for MK team	Save Life: Reorganizing Basic/Advanced Life Suppor Training Through the Use of Innovative Digital Materials (SaveLife)		2022-2024 ERASMUS + KA220-HED - Cooperation partnerships in higher education
		3.	Gecevska V.(team leader Macedonian side)	Integration of Id Blockchain tech PLM Strategy b perishable food management an	oT and mology into pased quality id traceability	Macedonian – China bilateral scientific project, 2020-2021

		4.	Gecevska V.	Embedding	RRI in Western	2021-2023
			External expert	Balkan Cou	ntries:	Horizon 2020 project Aggrement
			_	Enhancemen	nt of Self-	No.101006279-WBC-RRI-NET
				Sustaining F	R&I Ecosystems	
		5.	Gecevska V.	Strengthenin	ng capacities and	2018-2020
			expert	mechanisms	for supporting	IPA project
			-	Chapter 20 1	reform processes	1 1
	10.3.	Printe	d books in the last fi	ve years (up t	o 5)	
		No.	Author	Title	<i>i</i>	Publisher/year
		1.	Gecevska V.	Chapter 13:	Report on ICT in	book title, "Comparative Analysis
				Education in	n the Republic of	of ICT in Education between
				North Mace	donia	China and Central and Eastern
						European Countries", Springer
						Nature Singapore Pte Ltd., 2020,
						pp.50-75.
		2.	Cus F. Gecevska	ADVANCE	S IN	University Press, University of
			V.	PRODUCT	ION AND	Maribor, Slovenia, April 2018,
				INDUSTRL	AL	ISBN 978-961-286-028-8,
				ENGINEER	ING, Scientific	COBISS.SI-ID 91546369, 352 p.
				Monograph		-
		3.	Поленаковиќ Р.,	Иновации (учебник за 9-то	Министерство за образование и
			Гечевска В.	одделение)	-	наука, 2020
		4.	Поленаковиќ Р.,	Иновации и	I	Министерство за образование и
			Гечевска В.	претприемн	ништво (учебник	наука, 2020
				за II година	и гимназиско	
				образовани	е – проектна	
				активност)		
		D • .	1 C · 1	· 11 1 15		
	10.4.	Printe	d professional papers	s in the last 5	years (up to 5)	
	10.4.	Printe No.	d professional papers Author	Title	years (up to 3)	Publisher/year
	10.4.	Printe No. 1.	d professional papers Author Polenakovikj M.,	Title Circular Eco	pnomy	Publisher/year 12 International Scientific
	10.4.	No.	d professional papers Author Polenakovikj M., Gecevska V	Title Circular Eco Measuremer	pnomy nt Metrics'	Publisher/year 12 International Scientific Conference -Emerging trends in
	10.4.	No.	d professional papers Author Polenakovikj M., Gecevska V	Title Circular Ecc Measuremer Indicators	onomy nt Metrics'	Publisher/year 12 International Scientific Conference -Emerging trends in business economics: towards
	10.4.	No.	d professional papers Author Polenakovikj M., Gecevska V	Title Circular Ecc Measuremer Indicators	pnomy nt Metrics'	Publisher/year 12 International Scientific Conference -Emerging trends in business economics: towards competitiveness, digitalization
	10.4.	No.	Author Polenakovikj M., Gecevska V	Title Circular Ecc Measuremer Indicators	pnomy nt Metrics'	Publisher/year 12 International Scientific Conference -Emerging trends in business economics: towards competitiveness, digitalization and financial innovation,
	10.4.	No.	Author Polenakovikj M., Gecevska V	Title Circular Eco Measuremer Indicators	onomy nt Metrics'	Publisher/year 12 International Scientific Conference -Emerging trends in business economics: towards competitiveness, digitalization and financial innovation, Belgrade, Sebia, 2020.
	10.4.	Printe No. 1. 2.	d professional papers Author Polenakovikj M., Gecevska V Gecevska V.	Title Circular Ecc Measuremer Indicators	onomy nt Metrics'	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for Information
	10.4.	Printe No. 1. 2.	d professional papers Author Polenakovikj M., Gecevska V Gecevska V.	Title Circular Ecc Measuremer Indicators PLMConcep Product Dev	onomy nt Metrics' of for Virtual relopment through	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization for
	10.4.	Printe No. 1. 2.	Author Polenakovikj M., Gecevska V Gecevska V.	S in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool	onomy nt Metrics' ot for Virtual relopment through s Contribute to	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,
	10.4.	Printe No. 1. 2.	d professional papers Author Polenakovikj M., Gecevska V Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0	onomy nt Metrics' of for Virtual velopment through s Contribute to	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019
	10.4.	Printe No. 1. 2. 3.	Author Polenakovikj M., Gecevska V Gecevska V.	PLMConcer Product Dev Digital Tool Industry 4.0 Circular Ecc	onomy nt Metrics' of for Virtual relopment through s Contribute to onomy: Polices	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengthening
	10.4.	Printe No. 1. 2. 3.	Author Polenakovikj M., Gecevska V Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicion	onomy nt Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms for
	10.4.	Printe No. 1. 2. 3.	Author Polenakovikj M., Gecevska V Gecevska V.	S in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicio	onomy nt Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",
	10.4.	Printe No. 1. 2. 3.	Author Polenakovikj M., Gecevska V Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicion	onomy nt Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018
	10.4.	Printe No. 1. 2. 3. 4.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicion Rapid Asses	onomy nt Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth National
	10.4.	Printe No. 1. 2. 3. 4.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicion Rapid Assess current statu	onomy at Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and Third
	10.4.	Printe No. 1. 2. 3. 4.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicion Rapid Assess current statu developmen	onomy thetrics' ot for Virtual relopment through s Contribute to onomy: Polices es ssment Report for us of the research, t, innovation and	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report on
	10.4.	Printe No. 1. 2. 3. 4.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicit Rapid Assess current statu development technology	onomy thetrics' ot for Virtual velopment through s Contribute to onomy: Polices es ssment Report for us of the research, t, innovation and transfer related to	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under the
	10.4.	Printe No. 1. 2. 3. 4.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicion Rapid Assess current statu development technology f climate char	onomy thetrics' ot for Virtual relopment through s Contribute to onomy: Polices es es es es es es es es es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020
	10.4.	Printe No. 1. 2. 3. 4. 5.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicion Rapid Assess current statu development technology to climate chart Summary ref	onomy thetrics' ot for Virtual velopment through s Contribute to onomy: Polices es es es es es es es es es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth National
	10.4.	Printe No. 1. 2. 3. 4. 5.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicitar Rapid Assess current statu development technology to climate chart Summary re UNFCCC T	onomy the Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es es es es es es es es es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and Third
	10.4.	Printe No. 1. 2. 3. 4. 5.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicit Rapid Assess current statu development technology tech	onomy at Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es es es es es es es es es	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report on
	10.4.	Printe No. 1. 2. 3. 4. 5.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcer Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicion Rapid Assess current statu development technology to climate char Summary ret UNFCCC T Transfer: Cl Green Deve	onomy at Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es ssment Report for us of the research, t, innovation and transfer related to nge port on the 'echnology ear Mechanism for lopment, UNDP	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under the
	10.4.	Printe No. 1. 2. 3. 4. 5.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcer Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicit Rapid Assess current statu development technology f climate chart Summary ret UNFCCC T Transfer: Cl Green Deve Project	onomy thetrics' ot for Virtual relopment through s Contribute to onomy: Polices es ssment Report for us of the research, t, innovation and transfer related to nge port on the echnology ear Mechanism for lopment, UNDP	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2019
11.	10.4. Superv	Printe No. 1. 2. 3. 4. 5.	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V. Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcep Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicitar Rapid Assess current statu development technology 1 climate char Summary ret UNFCCC T Transfer: Cl Green Deve Project graduate, mas	onomy nt Metrics' of for Virtual relopment through s Contribute to onomy: Polices es es es es es es es es es es es es e	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2019ies students
11.	10.4. Superv 11.1.	Printe No. 1. 2. 3. 4. 5. ision (r Under	Author Polenakovikj M., Gecevska V Gecevska V. Gecevska V. Gecevska V. Gecevska V.	s in the last 5 Title Circular Ecc Measuremer Indicators PLMConcer Product Dev Digital Tool Industry 4.0 Circular Ecc and Practicitar Rapid Assess current statu development technology te	onomy nt Metrics' ot for Virtual relopment through s Contribute to onomy: Polices es ssment Report for as of the research, it, innovation and transfer related to nge port on the rechnology ear Mechanism for lopment, UNDP ter and doctoral stud 36 (last five years)	Publisher/year12 International ScientificConference -Emerging trends inbusiness economics: towardscompetitiveness, digitalizationand financial innovation,Belgrade, Sebia, 2020.6 th Conference for InformationTechnology and Digitalization forEconomic Grown, Beijing, China,June 2019IPA Workshop "Strengtheningcapacities and mechanisms forsupporting Chapter 20 reform",May 2018Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2020Macedonia's Fourth NationalCommunication and ThirdBiennial Update Report onClimate Change under theUNFCCC, 2019ies students

1	11.2	Darts	.1	E with companyorship		
12	11.3. For me	Doctora	u doctoral theses sel	5 with co-mentors	snip ve vears	
±2.	10.1					
	12.1.	Proof of scientifi	i printed scientific i	research papers in international s be given field (up to six) in the la	cientific journals or inter st five years	national
		No	Author	Title	Publisher/vear	
		1	Vagilarka E	Encrowingut adaptation	A dyanaad Taahnalaai	and
		1.	Vasileska E.,	Energy input adaptation	Advanced Technologie	$\frac{1}{2022}$
			Demir A.G.,	according to part geometry in	Materials, Vol. 4/, No	. 1 (2022),
			Colosimo B.M.,	selective laser melting through	11 - 1 /	
			Gecevska V.,	empirical modelling of		
		2	Previtali B.,	thermal emission		T 1
		Ζ.	Vasileska E.,	Employment of machine	International Scientific	Journal
			Chukaliev O.,	learning techniques for crop	Mathematical Modeli	ng", Issue
			Gerazov B.,	yield forecasting based on	3, pp. 86-90, 2022.	
		2	Gecevska V.	climate parameters		
		3.	Vasileska E.,	Crop yield forecasting based	IEEE Xplore, June 202	23
			Gecevska V.,	on climate data using		
			Chukaliev O.	Principal Component Analysis		
				and Machine Learning		
		4	F H 71	techniques		
		4.	Feng H., Zhang	Sensory evaluation and	Journal of Food Proces	ssing and
			M., Gecevska	prediction of bulk wine by	Preservation, wiley Pe	riodicals
			V., Hao L.,	physicochemical indicators	LLC., ISSN: 1/45-454	9, J.Food
			Zhang X.	based on PCA-PSO-LSSVM	Process Preserv.2022:	10: e16343,
				method	Vol. 41/12, Jan 2022,	WoS
		5	D 1 1 1 D		IF=2.19 Clarivate Ana	lytics
		Э.	Polenakovik R.,	Innovativeness in Macedonian	Journal of Technical G	azzette,
			Stankovska I.,	Companies: Evidence from	Vol.25, No.3, 2018, pp	.910-915.
			Jovanovski B.,	the Community Innovation	$\begin{bmatrix} \text{Indexed wos SCI jou} \\ \text{IE}_0 725 \text{ for } 2018 \end{bmatrix}$	rnais,
			Gecevska v.,	Survey	1F = 0, /25 for 2018]	
			Valkovski D.,			
		6	Pistovska D	Lean Improving	Journal of Production I	Inginogring
		0.	Gecevska D.,	Manufacturing Processes by	Publ University of Nov	vi Sad
			OCCUSKA V.	Optimizing Time Parameters	No 15 2018 V 3 22-3	7 Sau,
	12.2	Proof	f at least two printe	d scientific research papers in in	ternational scientific jour	z. nals with
	12.2.	impact	factor in the given	field in the last five years	Journal of the fourth of the f	
		No.	Author	Title	Publisher/year	
		1.	Feng H., Zhang	Modeling and evaluation of	Computer and Electron	nics in
			M., Gecevska	quality monitoring based on	Agriculture, Elsevier,	193 (2022)
			V., Chen B.,	wireless sensor and	106642, Jan 2022, Wo	S IF=4.59
			Saeed R.,	blockchain technology for live	Clarivate Analytics	
			Zhang X.:	fish waterless transportation		
		2.	Tomov M.,	Modelling of multiple surface	Journal Advance in Pr	oduction
			Gecevska V.,	roughness parameters during	Engineering & Manag	ement
			Vasileska E.	hard turning: A comparative	Journal, Vol.17, No.1,	March
				study between the kinematic-	2022, pp.75-88, WoS I	F=3.382
				geometrical copying approach	Clarivate Analytics	
				and the design of experiments		
				method		
	12.3.	Proof of	f at least three parti	cipation in international meeting	s in the last four years	
		No.	Author	Title	International	
					meeting/conference	
		1.	Gecevska V.	Possibilities of the UNFCCC	International	June 2020
				TT Technology Mechanism	Conference for	
				for supporting of the climate	Sustainable	
				technologies	Development.	

				Zagreb, Croatia,	
				online	
	2.	Vasileska E.,	Energy Input Adaptation to	Proceedings of 14th	September
		Demir A.G.,	Part Geometry in Selective	INTERNATIONAL	2021
		Colosimo B.M.,	Laser Melting Through	SCIENTIFIC	
		Gecevska V.,	Empirical Modelling	CONFERENCE	
		Previtali B.		MMA - Flexible	
				Technologies, Novi	
				Sad, Serbia	
	3.	Vasileska E.,	Crop yield forecasting based	Proceedings of 12 th	June 2023
		Gecevska V.,	on climate data using	Mediterranean	
		Chukaliev O.	Principal Component	Conference	
			Analysis and Machine	Embedded Computer	
			Learning techniques	Recourses – MECO	

Add	. 4	Information abou	t the teachers that	at lecture at the	e first, second	l and third study program and are	
	I	mentors on the do	octoral thesis				
1.	Name(First,	Last)	Atanas Kochov				
2.	Date of birth	1	March 8 th 1966				
3.	Scientific de	egree/Title	VIII / Dr.				
4.	Title of the	scientific degree	Doctor in Technical Sciences				
5.	Year and ins	stitution of the	Education	Year	Institution		
	scientific degree		VII/1 B.Sc,	1990	Faculty of M	Mechanical Engineering-Skopje	
			in				
			Mechanical				
			Engineering				
			VII/2 M.Sc.	1993	Faculty of M	Mechanical Engineering-Skopje	
			in				
			Mechanical				
			Engineering				
			VIII Dr. in	2001	Faculty of Mechanical Engineering-Skopje		
			Technical				
			Sciences				
6.	Area, field a	nd particular	Area	Field	Specialty		
	specialty of	master of science	Technical -	Mechanical	Production	Processes, technologies and	
	degree		technological	engineering	systems		
			sciences				
7.	Area, field a	nd particular	Area	Field	Specialty		
	specialty of	Doctoral degree	Technical -	Mechanical	Production	Engineering, Technologies and	
			technological	engineering	Systems		
			sciences		Industrial en	ngineering and managemen	
8.	If employed	, state the	Institution			Title and area	
	institution w	nere ne/sne	University Ss.	Cyril and Met	hodius,	Full time Professor, Production	
	in which is a	ne une and area	Faculty of Me	chanical Engin	eering -	engineering, technologies and	
	III WIIICH IS I	lanieu	Skopje	2	-	systems;	
						Organization of technology	
						processes	
9.	List of cours	ses that the teacher	is lecturing sepa	arately for first	, second and	third cycle	

	0.1	T ist a	f agging a that the tag all an is leather	in a in the first avala
	9.1.	List c	of courses that the teacher is lectur	Ing in the first cycle
		No.	Course	Study program/Institution
		1.	Technology of rapid prototyping	Production Engineering / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopje
		2.	Managemnt of technology innovation	Industrial Engineering and Management, Industrial Design / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopie
		3.	Sustainable production	Industrial Engineering and Management, Mechatronics / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopie
		4.	Computer Aided engineering	Production Engineering, Mechatronics / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopie
			Production technologies	All study programmes / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopje
	9.2.	List c	of courses that the teacher is lecturi	ing in the second cycle
		No.	Course	Study program/Institution
		1.	Concurrent engineering	Advanced manufacturing systems and technologies / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopie
		2.	Modeling and simulation of injection porcess, tool and mold desig	Advanced manufacturing systems and technologies, Modeling and simulation of plastic deformation technologies and processes /Faculty of Mechanical Engineering,
				University Ss. Cyril and Methodius in Skopje
		3.	Technology of metlaforming	Advanced manufacturing systems and technologies / Faculty
			processes	Methodius in Skopje
		4.	Six Sigma	Industrial Engineering and Management, Product Lifecycle Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
		5.	Lean approaches	Industrial Engineering and Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius- Skopje
		6.	Circular economy	Industrial Engineering and Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius- Skopje
			3D digitalization processes in manufacturing	Modeling and simulation of plastic deformation technologies and processes
			Technology of rapid prototyping – additive manufacturing	Modeling and simulation of plastic deformation technologies and processes
	9.3.	List c	of courses that the teacher is lectur	ing in the third cycle
		No.	Course	Study program/Institution
		1.	Managament of sustainable development	Industrial Engineering and Management / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius- Skopje
		2.	Modeling and simulation of metalforming processes	Mechanical Engineering / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
		3.	Advanced computer aided technologies in production systems	Mechanical Engineering / Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje
			Additive manufacturing	Mechanical Engineering / Faculty of Mechanical
				Engineering, University Ss. Cyril and Methodius-Skopje
10.	Select	ed resu	ults in the past five years	
	10.1	Relev	ant printed scientific papers (up to	5)

		No.	Author	Title	Publisher/year
		1.	Fisnik Osmani,	The Importance of SD	Vol. 14/No. 4; 2020, Technical Journal, IF 2.1,
			Atanas	Goals Indicators 7, 8, 9	DOI: 10.31803/tg-20200917084550 . Print:
			Kochov*.	and 12 in the Industry	ISSN 1846-6168, 2020
			Betim	Development by Using	,
			Shahani	Multi Criteria and	
			Mirieta Ilazi	Decision Making Method:	
		2	A Kochov A	Case Study: Six Sigma	Vol 14/No 4: 2020 Technical Journal IE 2.1
		Δ.	A.Kochov, A.	Droject for Deducing	V_{01} 14/100. 4, 2020, reclinical journal, in 2.1, DOI: 10.21802/ta 20201002115524 Drint:
			Algilovski	Monual Handling of	ISSN 1946 6169 December 2020
				Matariala in Deal	155N 1840-0108, December 2020
				Materials in Real	
		2	C IV: 1:	Manufacturing Company;	
		3.	S.Kjosevski,	Sustainable Transport	Vol. 14/No. 3, 2020, Technical Journal, IF 2.1,
			A. Kochov,	Indicators in the Context of	DOI: 10.31803/tg-20200/061/5206, Print:
			D.Danev, A.	Introducing of Electric	ISSN 1846-6168, September 2020
			Kostikj	Passenger Cars	
		4.	Ognen	"Mold Design and	III International Scientific Conference
			Tuteski,	Production by Using	INDUSTRY 4.0 (2018), Number 1. p. 47-50
			Atanas, Kocov	Additive Manufacturing	
				(AM) - Present Status and	
				Future Perspectives".	
		5.			
	10.2.	Partic	pation in scientifi	c national and international pro-	ojects (up to 5)
		No.	Author	Title	Publisher/year
		1.	R.Minovski,	Increazing competitiveness	IPA 2017-2019
			B.Jovanoski,	of domestic SME's in	
			A.Kochov and	order to improve their	
			others	cooperation with foreign	
				investors companies	
				[InComSMEs]	
	·	2.	A.Kochov and	Mapping economic.	GIZ funded project: Project No. 16.2171.3-
			Team of	innovative and scientific	007.000. 2019-2020
			experts	potential in Macedonia	
		3	A Kochov and	DIGagCOV-Digitalization	Ministry of Science of Montenegro 2020
		5.	team from	and digital payment for	initially of Science of Montenegro, 2020
			UDG	SME's in Montenegro	
			Montengro	Sivil's in Montenegro	
		4	A Kochoy and	Physical 3D prototype for	Innovation voucher Fund for innovation
		т.	A.Kochov and	new product development	Skopia Macadonia 2020
			others	for Rade Konchar TEP &	Skopje, Maccuolla 2020
				SMELT ING	
		5		SMEET ING	
ŀ	10.3	J. Drint	d books in the last	five years (up to 5)	
	10.5.	No	Author	Title	Publisher/year
		1	Ognen Tutaski	Chapter 9: Design	University of Maribar Pross
		1.		Chapter 9. Design	
			& Atalias	Brototyme using Additive	Advances in Production and Industrial
			Kochov	Manufa aturin a Mathada	Engineering: Scientific Monograph
		2	Daniela	Chapter 12: A start (
		Ζ.	Daniela Mladara 1	Chapter 12: Assessment of	University of Maribor Press
			Iviladenovska	Alternatives for Natural	Advances in Production and Industrial
			& Atanas	Gas 1/1 Supply in	Engineering: Scientific Monograph
			Kochov	Macedonia versus	
				Technical Indicators	
		3.	Fisnik Osmani,	Application of AHP	Series: Environmental Science, Engineering
			Atanas	Methodology for decision	and Technology
			Kochov		

				 making in Cleaner 	BISAC: TEC009060; TEC031010
				production	DOI: https://doi.org/10.52305/CEQH2502
		4			
	10.4.	Printed professional papers in the last 5 years (up to 5)			
		No.	Author	Title	Publisher/year
		1.	S.Kjosevski,	An indicators based	Ntl. Congress: Motor Vehicles & Motors 2018,
			A.Kochov	approach towards decision	Kragujevac, Serbia October 4 th - 5 th 2018
				making and policy making	ngs 573-578
				regarding introducing	pg3 57 5 57 6
		-		electric vehicles	
		2.	Ognen	"The Application Of	Conference INDUSTRY 4.0 (2019), Number 3.
			I uteski,	Additive Manufacturing In	p. 364-367.
			Atanas, Kocov	Developing 3d Printed	
				Prostetnics And Orthouc	
		3	Bojan Mitev	Modeling and simulation	International Scientific Conference Machines
		5.	Atanas	of forging processes	Technologies Materials 11-14 03 2020
			Kochov	or rorging processes	Borovets Bulgaria Proceedings Vear III Issue 1
			11001101		(16) Borovets Bulgaria 2020 Volume I
					Machines Technologies Materials Issn 2535-
					0021 (Print) ngs: 42-46
		4	А Кочов	Испитување механички	Апликативен-стручен труд за потребите на
			О.Тутески	карактеристики на	компанијата ТЕП Раде Кончар, Скопје, јуди
				изолатор СИМ12 и СИМ	2020
				24	2020
		5.			
		6.			
11.	Supervision (mentorship) of undergraduate, master and doctoral studies students				
	11.1.	1.1. Undergraduate 21 (last five years)			
	11.2.	Maste	r	15(last five years	5)
	11.3.	. Doctoral 7 (in last five yea			ars)
12.	For mentors of doctoral theses, selected papers for the last four/five years				
	12.1. Proof of printed scientific research papers in international scientific journals or international scie				ional scientific journals or international scientific
		public	cations in the give	n field (up to six) in the last fi	ve years
		No.	Author	Title	Publisher/year
		1	Fisnik Osmani,	The Importance of SD	TECHNICAL IOUDNIAL 14 4(2020) 524
			Atanas	Goals Indicators 7, 8, 9	TECHNICAL JOURNAL 14, 4(2020), 524-
			Kochov, Betim	and 12 in the Industry	530;155N 1846-6168 (Print), 155N 1848-5588
			Shabani,	Multi Critoria and	(Online) https://doi.org/10.51805/tg- 20200017084550
			Mirjeta Ilazi	Decision Making Method	20200917084550
		2		Decision Waking Wethod	Scientific Technical Union of Mechanical
		2	Bojan Mitev,	Modeling of forging	engineering Industry 4.0 Volume 1
			Atanas	processes	Machines, Technologies, Materials, Year III.
			Kochov	Processor.	Issue 1(16), Borovets, Bulgaria
		3		APPLICATION OF	
				GOAL PROGRAMMING	
			A topog	IN THE MANAGEMENT	Interntional Journal of Science, Enviroment
			Atanas	OF THE INSTALLATION	and Technology, Vol.8, No.4, 2019, 766-776;
			Nocnov, Minista Ilazi	OF THE HEATING	ISSN 2278-3687 (O) 2277-663X (P)
			winjeta nazi	SYSTEM IN NON-	
				BUSINESS FACILITIES	
		4	Fisnik Osmani,	DEFINING	Belgrade School of Engineering Management
			Atanas	INDICATORS WITH A	Belgrade Proceedings of the 2nd International
			Kochov	DECISION- MAKING	
ROLE THAT IMPACT scientific Conference on Circula ON SUSTAINABLE Bioeconomy "CIBEK 2019"; pgs DEVELOPMENT IN THE INDUSTRY			lar and s 100-111		
---	-----------------	--	---	--	--
	5	Ognen Tuteski, Atanas, Kocov	"Mold Design and Production by Using Additive Manufacturing (AM) - Present Status and Future Perspectives".	Scientific-Technical union of engineering "Industry 4.0"; IS 2535-0153; Year II Vol 1/3; II Scientific Conference INDUS Number 1. p. 47-50.	mechanical SN (Print) - II International TRY 4.0 (2018),
12.2.	Proof	f of at least two pri	inted scientific research papers	s in international scientific jourr	als with impact
	No. Author Titl		Title	Publisher/year	
	1	Prof. Dr.Sc. Atanas Kochov, Mr.Sc. Radmila Petrovska, Mr.Sc. Nikola Shopov Markovikj	MANAGEMENT OF NEW INNOVATIVE TECHNOLOGIES FOR DIGITAL TRANSFORMATION	"ISBN: 978-960-9416-24-5 ISS Published by SEERC (South Ea Research Centre) © Copyright Organizing Committee of the Triple Helix Congress on Resp Innovation & Entrepreneurshi pgs 131-134"	N: 2654-024X st European : 2019, The 2019 European onsible p (ETHAC2019);
	2	Bojan Jovanovski, Radmil Polenakovikj, Ivana Stankovska, Atanas Kochov, Robert Minovski	MODELLING THE INNOVATIVENESS OF MICRO AND SMALL ENTERPRISES	"ISBN: 978-960-9416-24-5 IS Published by SEERC (South F Research Centre) © Copyrigh Organizing Committee of the Triple Helix Congress on Resp Innovation & Entrepreneurshi pgs 134-139"	SN: 2654-024X East European t 2019, The 2019 European ponsible p (ETHAC2019);
	3	Ognen Tuteski, Atanas, Kocov	"The Application Of Additive Manufacturing In Developing 3d Printed Prostethics And Orthotic Devices"	Scientific-Technical union of engineering "Industry 4.0", IS 0153 (O) 253-0161; Conferen 4.0; Bulgaria (2019), Number	mechanical SN (P) 2535- ce INDUSTRY 3. p. 364-367.
12.3.	Proof	of at least three p	articipation in international m	eetings in the last four years	
	No.	Author	Title	International meeting/conference	
	201	Monika Fidanchevska, Bojan Mitev, Kristina Micova, Marko Naseski, Atanas Kochov	Design and mechanical properties of high-voltage transmission line composite insulators	"SCIENTIFIC TECHNICAL UNION OF MECHANICAL ENGINEERING, INDUSTRY - 4.0 YEAR IV, ISSUE 3 (20) ISSN 2535-0021 (PRINT) ISSN 2535-003X (ONLINE)"	2021
	2	Atanas Kochov, Aleksandar Argilovski	Case Study: Six Sigma Project for Reducing Manual Handling of Materials in Real Manufacturing Company	TECHNICAL JOURNAL 14, 4(2020), 499-506; ISSN 1846- 6168 (Print), ISSN 1848-5588 (Online) https://doi.org/10.31803/tg- 20201002115534	2020

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	3	Bojan Mitev, Atanas Kochov	Modeling and simulation of forging processes	INTERNATIONAL SCIENTIFIC JOURNAL "MATHEMATICAL MODELING" ; WEB ISSN 2603-2929; PRINT ISSN 2535-0986; YEAR IV, ISSUE 1, P.P. 13-17 (2020)	2020
	4	Stevan Kjosevski, Atanas Kochov, Aleksandar Kostikj	Sustainable Transport Indicators in the Context of Introducing of Electric Passenger Cars	TECHNICAL JOURNAL 14, 3(2020), 318-324 ISSN 1846- 6168 (Print), ISSN 1848-5588 (Online) https://doi.org/10.31803/tg- 20200706175206	2020
	5	Kjosevski Stevan, Kochov Atanas, Kostikj Aleksandar	AN INDICATORS BASED APPROACH TOWARDS DECISION MAKING AND POLICY MAKING REGARDING INTRODUCING ELECTRIC VEHICLES	Faculty of Engineering, University of Kragujevac; ISBN 978-86-6335-055-7; COBISS.SR-ID 268099340; Proceedings, Ecology, Vehicle and road safety- efficiency, 7th International congress Motor Vehicles & Motors 2018 pgs 573-579	2019

Add.	4 Information abou	t the teachers that lecture at	t the first, secor	ad and third study program and				
1	are mentors on th	e doctoral thesis						
$\frac{1}{2}$	Name (First, Last)	A mil 15 1066						
2.		April 13, 1966						
3.	Scientific degree / little	$\frac{\text{VIII / Dr. Sc.}}{\text{Dr. Sc.}}$						
4.	little of the scientific degree	Doctor in Technical Sci	ences	- · ·				
5.	Year and institution of the scientific	Education	Year	Institution				
	degree	Doctor in Technical	2003	Faculty of Mechanical				
		Science		Engineering - Skopje				
		M.Sc. in Mechanical	1996	Faculty of Mechanical				
		Engineering		Engineering - Skopje				
		B.Sc. in Mechanical	1991	Faculty of Mechanical				
		Engineering		Engineering - Skopje				
6.	Area, field and particular specialty	of Area	Field	Specialty				
	master of science degree	Technical-technology	Mechanical	Production Processes,				
		sciences	engineering	Technologies and				
				Systems, Composite				
				materials				
7.	Area, field and particular specialty of	f Area	Field	Specialty				
	Doctoral degree	Technical-technology	Mechanical	Production Processes,				
		sciences	engineering	Technologies and				
				Systems, Composite				
				materials				
8.	If employed, state the institution	Institution		Title and area				
	where he/she works and the title and	UKIM, Faculty of Mech	nanical	Full time Professor, Production				
	area in which is named	Engineering		technologies and systems				
9.	List of courses that the teacher is led	cturing separately for first, s	second and third	1 cycle				
	9.1. List of courses that the teache	r is lecturing in the first cyc	ele					
	No. Course		Study program	n/institution				
	1. Design, Testin	g and Maintenance of	Production En	gineering				
	Machine Tools							

	2.		Quality Management		Industrial Engineering and Management		
	3.		Machines and Tools for the Machi with Cutting	ining	Production Engineering Production Engineering		
	4.		Computer Aided Product Develop	ment			
	5.		Technologies of Composite Mater	ials	Production Engineering		
	6.		Virtual Manufacturing		Production Engineering		
9.2.	List of	courses	that the teacher is lecturing in the	second o	cycle		
	No.		Course		Study program/institution		
	1.		Maintenance of Technology Syste	ems	Advanced Manufacturing	System and	
					Technology	-	
	2.		Management of Processes and Me	trics	Advanced Manufacturing Technology	System and	
	3.		Management of Development of N	New	Metrology, Management a	nd Ouality Control	
			Products and Processes			()	
	4.		Methods and Techniques of TOM		Metrology, Management a	nd Quality Control	
	5		Development and Management of	,	Product Life-Cycle Manage	rement – PLM	
			Products				
	6.		ТОМ		LEAN, Virtual Manufactu	ring Engineering	
93	List of	courses	that the teacher is lecturing in the third cycle		cle		
	No		Course		Study program/institution		
	1		CAx Technologies		Mechanical Engineering		
	2		Substitution of the Materials		Mechanical Engineering		
	3		Management of Development of New		Mechanical Engineering		
	5.		Products				
)	Select	ed wor	k in the past five years				
•	10.1	Relev	vant scientific printed paper (up to 4	5)			
	10.11	No	Author	Title		Publisher/Vear	
		No. Author		Remi	lating Water Tariffs in	I dournal of the Instit	
		1.	Vrtanoski	Repu	blic of Macedonia. Initial	of Economic - Skor	
			Vitunoski	Asses	ssments	No 3/2018 2018	
				113503	551101115	110.5/2010, 2010.	
		2.	Kaltrine Jakupi, Gligorche	Desig	on and Manufacturing of	Mechanical	
			Vrtanoski, Vladimir Dukovski,	3D Pi	rinted Parts for	Engineering –	
			Gezim Hodolli	Radic	otherapy Application	Scientific Journal.	
						Vol. 40, No. 1, pp.	
						11–15 (2022)	
		3.	Zoran Pandilov, Betim Shabani,	Rever	rse Engineering – An	ACTA Technica	
			Dejan Shishkovski, Gligorche	Effec	tive Tool for Design and	Corviniensis –	
			Vrtanoski	Deve	lopment of Mechanical	Bulletin for	
				Parts	1	Engineering, Tome	
						(2018) Fascicule 2	
						(April – June), e-	
						ISSN: 2067 - 3809	
						(online)	
		4.	Goce Boceski, Gligorche	Myste	ery Shoppers and Net	Mechanical	
			Vrtanoski	Prom	oter Score Tools for	Engineering Scient	
				Custo	omer Satisfaction	Journal No.1 Vol.3	
				Impro	ovement	Skopje 2020, 2020.	
		5.	Gligorche Vrtanoski, Tasko	Dyna	mic Testing of Innovative	ANNALS of Facul	
			Smileski	Railw	vay Brake System for	Engineering	
				Freig	ht Wagons	Hunedoara –	
						International Journ	
				1		of Engineering,	

				Romania, Tome 12, 1, 2019, 2019.
10.2.	Partic	ipation in scientific national and i	nternational projects (up to 5)	
	No.	Author	Title	Publisher/year
	1.	Gligorche Vrtanoski (Team Leader):	<i>EBRD Project No. C32161:</i> Rail Corridor VIII: First Phase / Fleet Renewal Project - Design and Implementation of Energy Management Information System in the Rail Sector, (01/2016 – Present (12/2023), Client: / Funding: EBRD Grant to MRT JSC Skopje and PERI Skopje / EBRD Grant, SubContractor: PADECO, Tokyo, Japan, Position: Local Team Leader and Railway	International Project funding by the European Bank for Reconstruction and Development (EBRD) / (01/2016 – 12/2023).
			D 11: Ot 1 E	
	2.	Gligorche Vrtanoski (Team Leader): Gligorche Vrtanoski (Expert):	Rolling Stock Expert.EBRD Project No. C32418CC:Business Segmentation andFleet Management AdvisoryServices for Railway TransportCompany, (11/2015 – Present(04/2020), Client: / Funding:EBRD Grant to Ministry ofTransport and Communication /EBRD Grant, SubContractor:PricewaterhouseCoopers,Rome, Italy, Position: LocalTeam Leader and FleetManagement Expert.Project No. T22517D: GhanaValue for Money AssessmentServices Advisory Services forRailway Development Line,(09/2022 – 03/2025), Client: /Funding: Ministry of RailwayDevelopment Ghana,Contractor: Crown Agents	International Project funding by the European Bank for Reconstruction and Development (EBRD)/ (11/2015 – 04/2020). International Project funding by Ministry of Railway Development Ghana / (09/2022 – 03/2025).
			Limited - UK, Position: Railway Expert	
	4.			
	5.			
10.3.	Printe	d books in the last five years (up to	o 5)	
	No.	Author	Title	Publisher/Year
	1.			
	2.			
	3.			
	4.			
	5.			
10.4	Printe	d professional papers in the last 5	vears (up to 5)	1
10.1.	No	Author	Title	Publisher/Vear
	1			
	2			
	2.			
	3.			
	4.			1

		5.							
11.	Superv	vision (m	entorship) of undergraduate, m	aster and	doctoral studies stu	udents			
	11.1.	Underg	graduate		Over 70				
	11.2.	Master	·		22				
	11.3.	Doctor	al		7				
12.	For me	ntors of	doctoral thesis, selected work	for the las	st four / five years				
	12.1.	Proof c	of printed scientific papers in in	ternationa	l scientific journal	s or intern	ational pub	lications in	
		the rela	ated field (up to 6) in the past fi	ive years	-		-		
		No.	Author	Title	;		Publisher/	'Year	
		1.							
		2.							
		3.							
		4.					ļ		
		5.					ļ		
		6.					<u> </u>		
	12.2.	Proof of at least two printed scientific papers in international scientific journals that have impact							
		factor 1	in the related field in the past fi	ve years					
		No.	Author	Title			Publisher/	Year	
		1.							
	10.0	2.					<u> </u>		
	12.3.	Proof c	of at least three international me	eetings' pa	rticipation in the p	bast four y	ears	X 7	
		No.	Author	litle		Internation	onal	Year	
						Conform			
		1				Conterer			
		2							
		3							
1		5.							

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(First	st, Last)	Jasmina Chalo	Jasmina Chaloska				
2.	Date of bi	rth	3.9.1963					
3.	Scientific	degree/Title	VIII					
4.	Title of th	e scientific degree	Ph D					
5.	Year and i	institution of the scientific	Education	Year	Institution	L		
	degree		B.Sc, in Mechanical Engineering	1987	Faculty of Skopje	Mechanical Engineering		
			M.Sc. in Mechanical Engineering	1993	Faculty of Skopje	Faculty of Mechanical Engineering Skopje		
			PhD in Technical Sciences	2002	Faculty of Skopje	Mechanical Engineering		
6.	Area, field	l and particular specialty	Area	Field	Specialty			
	of master of science degree		Technical Science	Mechanical Engineering	Production and system	n engineering, technologies ns		
7.	Area, field and particular specialty		Area	Field	Specialty			
	of Doctoral degree		Technical	Mechanical	Productio	n engineering, technologies		
			Science	Engineering	and syster	ns		
8.	3.		Institution			Title and area		

	If employed, state the institution where he/she works and the title and area in which is named		University "St Skopje, Facult Engineering -	University "St. Cyril and Methodius" in Skopje, Faculty of Mechanical Engineering - Skopje		Full professor, 21403 Production engineering, technologies and systems and 21105 Organization of technological processes	
9.	List of	courses	that the teacher is lect	turing separately	for first, second	and third cy	rcle
	9.1.	List of	courses that the teach	er is lecturing in	the first cycle		
		No.	Course		Study program/	Institution	
		1.	Forming machines	and tools	PE/FME		
		2.	Ergonomics		PE, IEM/FME		
		3.	Non-conventional	processing	PE/FME		
			methods				
		4.	Computer modelin	g of die design	PE/FME		
	9.2.	List of	courses that the teach	er is lecturing in	the second cycle		
		No.	Course		Study program/	/Institution	
		1.	Advanced knowled	lge of non-	Advanced prod	uction syste	ems and technologies/FME
			conventional proce	ssing methods			
		2.	Occupational risk r	nanagement	IEM, Occupation	onal Safety	and Health Systems
	0.2	T :	<u> </u>	• • • •	Management/F	ME	
	9.3.	List of	courses that the teach	er is lecturing in	the third cycle	/T	
		1 1	Course Sefety and risks at	work	Study program	Institution	
		1.	Information tools f	or modeling			
		2.	and simulation of f	orming	I L/I WIL		
			processes	oming			
10.	Selecte	ed result	s in the past five years	S	•		
	10.1.	Releva	int printed scientific pa	apers (up to 5)			
		No.	Author	Title		Publisher/year	
		1.	Trajce Velkovski,	Methodology fo	r prevention	19th International Scientific	
			Jasmina Chaloska,	through design in occupational		Conference on Industrial Systems,	
			Zlatko Petreski,	safety		INTERN	ET of THINGS
			Aleksandra		TECHNOLOGIES, IS		DLOGIES, IS 23, 5-6,
			Hristova		O		.023, Novi Sad, Serbia.
		2	Traice Velkovski	Exploring the g	alitative	19th Inter	national Scientific
		2.	Jasmina Chaloska,	dimensions of in	ndividual	Conferen	ce on Industrial Systems.
			Zlatko Petreski,	motivation of er	nployees in	INTERN	ET of THINGS
			Dragan	selected macedo	mian	TECHNO	DLOGIES, IS '23, 5-6,
			Mitkovski,	manufacturing c	companies for	October 2	023, Novi Sad, Serbia.
			Vladimir	occupational he	alth and safety		
			Mučenski	trainings: a self-	determination		
		2		theory perspecti	ve		
		3.	Veikovski Trajce,	Analysis of the	s a method for		CONFERENCE Sentember
			Anachkova iviaja,	passive control	of traffic noise	$12_{-15}20^{\circ}$	23 Konaonik Serbia
			Simona Chaloska		of duffie holde	12-13.202	.5, Ropaolink, Serola
		Simona, Chaloska					
	Jasmina, Petreski Zlatko						
		4.	Traiče Velkovski	Identification of	safety	18th Inte	rnational Scientic
			Jasmina Chaloska,	indicators in the	manufacturing	Conferen	ce on Industrial Systems
			Vladimir	industry in reput	blic of north	Industrial	Innovation in Digital Age,
			Mučenski, Bojan	macedonia		IS '20, 7-	9, October 2020, Novi Sad,
			Jovanoski, Bojan			Serbia.	
			Jovanovski				

	5. Trajce Velkovski, Jasmina Chaloska, Zlatko Petreski, Aleksandra Hristova		Trajce Velkovski, Jasmina Chaloska, Zlatko Petreski, Aleksandra Hristova	Methodolog through desi safety	y for prevention gn in occupational	19th International Scientific Conference on Industrial Systems, INTERNET of THINGS TECHNOLOGIES, IS '23, 5-6, October 2023, Novi Sad, Serbia.	
	10.2.	Partici	pation in scientific na	tional and int	ernational projects (u	p to 5)	
		No.	Author	Title		Publisher/year	
		1.	J. Chaloska member of Macedonian team from University Ss.Cyril and Methodius	Increasing c strengthenin regional CS labor condit dialogue wit institutions	apacities and g the role of Os for improving ions and labor h public	Меѓународен проект финансиран од ЕУ, 2016-2019	
		2.	J. Chaloska member of Macedonian team from University Ss.Cyril and Methodius	European V Platform for GREENOV	ET Excellence Green Innovation - ET	Меѓународен проект финансиран од ЕУ (ERASMUS + програма), имплементиран од Машински факултет, 2020-2024, 2020-2024	
	3.		J. Chaloska, Project coordinator	Revision of hazardous o for early reti extended ser	the list of ccupations eligible rement with vice period (ESP)	World Bank under the project Social Insurance Administration Project (SIAP) at the Ministry of Labor and Social Policy in North Macedonia, 08.2021-12.2023	
			J.Chaloska, KE	Improving the Working Conditions		IPA II, EU funded project with the Ministry of Labour and Social Policy,2017-2023	
	10.3.	Printed	books in the last five	e years (up to	5)	2 / ·	
		No.	Author	Title		Publisher/year	
		1.					
		2.					
		3.					
	10.4.	Printed	professional papers	in the last 5 years (up to 5)			
		No.	Author	Title		Publisher/year	
		1.					
		2.					
		3.					
		4.					
		5.					
11.	Superv	vision (m	entorship) of underg	raduate, maste	er and doctoral studies	s students	
	11.1.	Underg	graduate		118		
	11.2.	Master			16		
	11.3.	Doctor	al		4		
12.	For me	ntors of	doctoral theses, sele	ected papers f	for the last four/five y	/ears	
	12.1.	Proof of printed scientific republications in the given fie		esearch paper eld (up to six)	s in international scie in the last five years	entific journals or international scientific	
		No.	Author	Title		Publisher/year	
		1.					
		2.					
		3.					
		4.					
		5.					
		6.	1	1			

12.2.	Proof of at least two printed scientific research papers in international scientific journals with impact								
	factor in	in the given field in the last five years							
	No.	Author	Title Publisher/year						
	1.								
	2.								
12.3.	Proof of	f at least three partic	ipation in international meetings	in the last four years					
	No.	Author	Title	International					
				meeting/conference					
	1.								
	2.								
	3.								
	12.2.	12.2. Proof or factor in No. 1. 2. 12.3. Proof or No. 1. 2. 12.3. Jacobian (State State St	12.2. Proof of at least two printed factor in the given field	12.2. Proof of at least two printed scientific research papers in interfactor in the given field in the last five years No. Author Title 1. 2. 12.3. Proof of at least three participation in international meetings No. Author Title 1. 2. 12.3. Proof of at least three participation in international meetings No. Author Title 1. 2. 3.					

Add. 4 Information about the teachers the		that lecture at th	e first, second and third	study pr	rogram and are				
	mentors on the doctoral thesis			T					
1.	Name(F	First, Las	st)	Nikola Tunes	Nikola Tuneski				
2.	Date of	birth		16.07.1971					
3.	Scientif	ic degree	e/Title	Ph.D.	Ph.D.				
4.	Title of the scientific degree			Ph.D. in mathe	ematical sciences				
5.	Year and institution of the scientific			Education	Year	Instit	ution		
	degree			Ph.D. in	1999	Unive	ersity of Belgrade,		
				mathematics		Serbi	a		
				M. Sc. in	1997	UKIN	М,		
				mathematics		Mace	edonia		
				B. Sc. In	1994	UKIN	М,		
				Engineering		Mace	donia		
6.	Area, fi	eld and p	particular specialty of	Area	Field	Speci	alty		
	master of	of scienc	e degree	Mathematics	Probability	Rand	om processes		
7.	Area, fi	eld and p	particular specialty of	Area	Field	Speci	alty		
	Doctora	al degree		Mathematics	Complex analysis	Geon	netric function		
						theory	у		
8.	If emplo	oyed, sta	te the institution where	Institution			Title and area		
	ne/sne	nd that	the and area in which is	Faculty of Mechanical Engineering			Full Professor,		
	works a	ind the ti	the and area in which is	Ss. Cyril and Methodius University		1	Mathematics		
	nameu			Skopje and infe			and informatics		
9.	List of o	courses t	hat the teacher is lecturing	separately for first, second and third cycle					
	9.1.	List of c	courses that the teacher is l	ecturing in the first cycle					
		No.	Course		Study program/Institut	ion			
		1.	Mathematics 1		all on MFS				
		2.	Mathematics 2		all on MFS				
		3.	Numetical Mathematics	5	Welding and welded c	onstruct	ions		
		4.	Computers and Application	tive Software	Industrial design				
	9.2.	List of c	courses that the teacher is l	ecturing in the se	econd cycle				
		No.	Course		Study program/Institut	ion			
	1. Selected topics in mathe		ematics and	all on MFS					
	informatics								
	2. Probability models and		simulations	Mechatronics					
	3. Applied statistics			Lean management					
	4.								
		5.							
		6.							
		7.							
1		8.							

	0.2	9.	<u> </u>	1 . • • •	1 . 1 . 1		
	9.3.	List of	f courses that the teacher is	lecturing in the t	hırd cycle		
		No.	Course		Study program/Institutio	on	
		1.	Theory and Application	n of	Mathematical sciences a	and application	
		_	Differential Subordinat	ions			
		2.	Theory of Univalent Fu	inctions and its Mathematical sciences		and application	
			Application				
		3.					
		4,					
10.	Selecte	ed resu	ts in the past five years				
	10.1.	Relev	ant printed scientific papers	(up to 5)			
		No.	Author	Title		Publisher/year	
		1.	M. Elin, F. Jacobzon, N. Tuneski	The Fekete-Sze filtration of gen	ego problem and herators	Rendiconti del Circolo Matematico di Palermo II Ser., Vol. 72 (2023), 2811–2829	
		2	M Obradovic N	Two types of t	he second Hankel	2011–2029. Acta et	
		2.	Tuneski	determinant for general class S	The class U and the	Commentationes Universitatis Tartuensis de Mathematica, Vol. 27, No. 1 (2023), 59- 67.	
		3.	M. Obradovic, N. Tuneski	Certain propert univalent funct coefficients	ties of the class of ions with real	Bulletin of the Korean Mathematical Society, Vol.50, No.5 (2023), 1253-1263.	
		4.	M. Obradovic, N. Tuneski	Coefficients of for the subclass	the inverse of functions s of the class $U(\lambda)$	<i>The Journal of</i> <i>Analysis,</i> Vol. 30, No. 1 (2022), 399-404.	
		5.	P. Zaprawa, M. Obradovic, N. Tuneski	Third Hankel d of univalent sta	leterminant for the class arlike functions	Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas, Vol 115, (2021), art.no. 49.	
	10.2.	Partic	ipation in scientific national	and internationa	al projects (up to 5)		
		No.	Author	Title		Publisher/year	
		1.					
		2.					
		3.					
		4.					
		5.					
	10.3.	Printe	d books in the last five year	s (up to 5)			
		No.	Author	Title		Publisher/year	
		1.	Thomas, Derek K.; Tuneski, Nikola; Vasudevarao, Allu	Univalent func	tions. A primer	De Gruyter Studies in Mathematics, 2018.	
		2.	Daniel Bodnar, Vera Despotivic, Paul Dixon, Richard Frewin and Nikola Tuneski	Revised Glossa Surveillance To	ary of Market erms	the Working Party on Regulatory Cooperation and Standardization Policies (WP.6) – United Nations Economic Commission for Europe, 2022.	

		3.					
	10.4.	Printe	d professional papers in the	last 5 years (up to 5)			
		No.	Author	Title	Publisher/year		
		1.	I. Hendrikx, N. Tuneski	The need for adequate sampling in a	2020 IEEE Symposium		
				well-functioning market surveillance	on Product Compliance		
				system	Engineering - (SPCE		
					<i>Formana)</i> , 202001, pp. 1-5.		
		2.					
		3.					
		4.					
		5.					
11.	Superv	vision (1	nentorship) of undergradua	te, master and doctoral studies students			
	11.1.	Under	graduate				
	11.2.	Maste	r				
	11.3.	Docto	ral				
12.	For me	entors o	f doctoral theses, selected	papers for the last four/five years			
	12.1.	Proof of printed scientific research papers in international scientific journals or international					
		scientific publications in the given field (up to six) in the last five years					
		No.	Author	Title	Publisher/year		
		1.					
		2.					
		3.					
		4.					
		5.					
	12.2	0. Draaf	of at locat true minted acies	tifia nagaanah nan ang in international asia	utific i comunal a verith		
	12.2.	impac	t factor in the given field in	the last five years	nume journais with		
		No.	Author	Title	Publisher/year		
		1.					
		2.					
	12.3.	Proof	of at least three participation	on in international meetings in the last for	ir years		
		No.	Author	Title	International		
		L			meeting/conference		
		1.					
		2.					
1		3.					

Add. 4 Information about the		Information about th	he teachers that lecture at the first, second and third study program and are				
		mentors on the doct	oral thesis				
1.	Name (Fi	rst, Last)	Bojan Jovanoski				
2.	Date of b	irth	13 th December, 1982				
3.	Scientific	degree/Title	PhD				
4.	Title of th	ne scientific degree	PhD in Technical Sciences				
5.	Year and institution of the		Education	Year	Institution		
	scientific	degree	Ph.D. in Mechanical	2014	Faculty of Mechanical		
			Engineering		engineering - Skopje		
			M. Sc. in Mechanical	2009	Faculty of Mechanical		
			Engineering		engineering - Skopje		
			B. Sc. in Mechanical	2006	Faculty of Mechanical		
			Engineering		engineering - Skopje		
6.	6.		Area	Field	Specialty		

	Area, specia	rea, field and particular becialty of master of science egree		Technic	al sciences	Mechanical Engineering			
7.	Area.	field and	particular	Area		Field	Spe	cialty	
	specia	lty of Do	octoral degree	Technic	al sciences	Mechanical	Ind	ustrial Dynamics	
8.	If emp	loyed, st	ate the	Instituti	on			Title and area	
	institu works in whi	tion whe and the ch is nar	re he/she title and area ned	UKIM, Faculty of Mechanical Engineering			Full time professor Mechanical		
9	List of	courses	that the teacher	is lecturi	ng senarately fo	or first second and third	cvcle	engineering	
2.	9.1.	List of	courses that the	teacher is	eacher is lecturing in the first cycle				
	-	No. Course			8	Study program/Institut	ion		
		1.	Operations res	earch 1		Industrial engineering	and r	nanagement/ Faculty of	
		2.	Production Pla	anning an	d control	Industrial engineering Mechanical Engineering	and r	nanagement/ Faculty of konje	
		3.Modelling an business proc4.Technology r			on of	Industrial engineering Mechanical Engineerir	and r ng - S	nanagement/ Faculty of kopje	
					nt	Industrial engineering Mechanical Engineering	and r	nanagement/ Faculty of konje	
	5 Industry 4.0					Industrial engineering	and r	nanagement/ Faculty of	
	9.2.	List of	courses that the	teacher is	lecturing in the	e second cycle	ig - 5	корје	
		No. Course				Study program/Institut	ion		
		1.	Lean tools 1			Lean Management/Fac	ulty o	of Mechanical	
						Engineering - Skopje			
		2.	Lean tools 2			Lean Management/Fac	ulty	of Mechanical	
		2	Leon project			Engineering - Skopje	aultar d	of Mechanical	
		5.	Lean project			Engineering - Skopje			
		4.	Применето м	иоделирање и		Industrial engineering and management/ Faculty of			
			симулација в	во деловните системи		Mechanical Engineering - Skopje			
		5.	Планирање и	управува	ање на	Industrial engineering and management/ Faculty of			
		6	производство	TO		Mechanical Engineering - Skopje			
		0.	синцир	на вредн	осниот	Project Lifecycle management/ Faculty of Mechanical Engineering - Skonie			
		7.	Технолошки	менацие	нт и	Industrial engineering and management/ Faculty of			
		<i>,</i> .	иновации			Mechanical Engineering - Skopje			
		8.	Моделирање	и симула	ција на	Management of securit	y and	safety systems/ Faculty	
			ризик			of Mechanical Enginee	ering	- Skopje	
	9.3.	List of	courses that the	teacher is	lecturing in the	e third cycle			
		No.	Course			Study program/Institut	ion		
		1.	Managerial pr	oduction	philosophies	Industrial engineering	and r	nanagement/ Faculty of	
	 Modelling and s approaches of but 3. 				Mechanical Engineerin	$\log - 2$	okopje		
			business	processes	Industrial engineering and management/ Faculty of Mechanical Engineering - Skopje				
10	Select	-+, ed result	l s in the nast five	Vears					
10.	10.1	Releva	nt printed scient	fic paper	s(up to 5)				
	10.11	No.	Author	puper	Title		Pub	lisher/year	

		1.	Jovanoski, B., et. al.	FunFactory: Understanding, Learning and Practicing Lean	Proceedings of the Conference on Learning
	-			Through Game	Factories (CLF) 2021
		2.	Argilovski, A.,	An overview of the digital	19th International Scientific
			Jovanoski, B., Minovalci, D	transformation and industry 4.0	Conference on Industrial
			WIIIOVSKI, K.	frameworks	Technologies np 34-39 4-
				indifieworks	6 October 2023. Novi Sad.
					Serbia
		3.	Jovanoski, B.,	Scheme for selecting the best	Proceedings of the IX
			Minovski, B.	simulation approach for a suitable	International symposium
				management level	and competitiveness (FMC
					2019), pp. 57-62, 2019
	-	4.	Minovski, R.,	Lean implementation and	International Journal of
			Jovanoski, B., Galevski,	implications: experiences from	Lean Six Sigma.
			Р.	Macedonia	doi.org/10.1108/IJLSS-10-
					2016-0057, 2018
	-	5.	Todorov, M.,	Key Performance Indicators for	International Journal of
			Jovanoski, B.,	lean: Literature review and	Modern Studies in
			Minovski, R.	recommendations	Mechanical Engineering
					(IJMSME), 5 (1), pp. 27- 36., 2019
10.2.		Partic	ipation in scientific nationa		
	-	No.	Author	Title	Publisher/year
		1.	Coordinator	Lean Industry 4.0 for more	2022-2023, Bilateral
				competitive production and	Macedonian-Austrian
	-	2	Coordinator	I conf Oweste Investigation of	2022 Scientific project
		۷.	Coordinator	new Industry 4.0 technologies to	financed by UKIM
				reduce Lean wastes in production	inteneed by citing
				processes	
		3.	Member	Gecevska, V., Jovanoski, B., et al.,	2020-2021, Bilateral
				Integration of IoT and Blockchain	Macedonian-Chinese
				technology into PLM strategy-	scientific project
				traceability	
	-	4.	Member	Velkovski, T., Jovanoski, B., et al,	2020-2024, Erasmus+
				GREENOVET: European VET	
				Excellence Platform for Green	
		5	Member	Innovation P. Minovski, P. Jovanovski, D.	2017-2019 IPA
		5.	Wiember	N. Willovski, B. Jovanovski, D.	2017-2019, II A
				Increasing the competitiveness of	
				the domestic SMEs in order to	
				improve their cooperation with	
				foreign investors' companies	
	10.2	Drinta	d books in the last five year	[InComSMEs] rs (up to 5)	
	10.3.	No	Author	Title	Publisher/vear
	-	1.	Јованоски, Бојан	Решени примери од инлустриско	UKIM, 2023
			, ,	инженерство и менаџмент со	, -
				методи од операциски	
	-			истражувања	
		2.			

		-						
	10.4							
	10.4.	Printe	d professional papers in the	$\frac{1}{2}$ last 5 y	ears (up to 5)	~		
		No.	Author	Title		Publisher/year		
		1.	R. Minovski, B.	Increas	ing the competitiveness of	FME-InComSMEs, 2019		
			Jovanovski, D.	the SM	Es using contemporary			
		2	Jovanoski and others	produc	tion approaches: case study.			
		2.	Б. Јованоски, Р.	Импле	ментација на "модул за	FME-InComSMEs, 2019		
			Поленаковик	ефикас	сност" со цел мерење на			
				перфор	омансите во Раде Кончар			
		2	Γ.Ι			EME La Came SME a 2010		
		3.	Б. ЈОВАНОСКИ, Р. По почиски страни	Подоој	рување на производните	FME-InComSMEs, 2019		
			Поленаковик	СМЕЛ	тицг			
		1	E Jonanoorn	Полоб		EME InComSMEg 2010		
		4.	Б. ЈОВАНОСКИ	подоој		FINE-InComSMES, 2019		
				преку і	надірадување на процесот			
		5	Іораноски Б	J ann S	ix Sigma of year			
		5.	Јованоски, D., Минорски, Р	Lean S	ix Sigina, obyku	CIRRO, 2023		
			Аргиновски, 1.,					
11	Superv	vision (1	mentorship) of undergradu	ate mast	er and doctoral studies students	3		
11.	11 1	Under	oraduate	ite, mast		,		
	11.1.	Maste	r		3			
	11.2.	Docto	ral		$\frac{3}{2}$ (in progress)			
12	Eor m	Docio.	f doctoral theses selected	ad papers for the last four/five years				
12.	12.1	Droof	of printed scientific research	h nonor	in international scientific jour	mals or international		
	12.1.	scienti	if is nublications in the give	n field (s = 1 in the last five years			
		No	Author	Title	up to six) in the last live years	Dublisher/voor		
		1	Argilovski A	Industr	v 1.0 for more competitive	Proceedings of the 15th		
		1.	Jovanovski, R.,	SMEs	Review of existing Industry	EPIEM Conference 2022 -		
			Kochov A &	40 Ma	turity Models	Creating a European IFM		
			Minovski R	1.0 1014	turity models.	Future at the Intersection		
			1.1110 . 5111, 10			"Innovation – Digitalisation		
						– Sustainability", pp. 41-		
						47. 1-4 June 2022, Graz,		
						Austria, 2022		
		2.	Stojanovska, J.,	Motiva	tion for patenting – Delphi	ANNALS of Faculty		
			Minovski, R.,	method	l approach	Engineering Hunedoara –		
			Jovanoski, B.			International Journal of		
						Engineering Tome XVIII		
						[2020] Fascicule 2 [Mav]		
						n n 83-89 2020		
						p.p. 00 03) 2020		
		3	Stanoieska M	Top M	anagement Role in	Iournal of Industrial		
		51	Minovski, R.,	Improv	ring the State of OMS under	Engineering and		
			Jovanoski, B.	the Infl	uence of Employee's	Management IIFM 13(1)		
			,	Involve	ement: Best Practice from the	93-119 2020		
				Food P	rocessing Industry	55 115, 2020		
		4.	Minovski, R	Lean ir	nplementation and	International Journal of		
			Iovanoski B	implica	ations: experiences from	Lean Six Sigma		
			Galevski, P.	Maced	onia	doi.org/10.1108/IJLSS-10-		
			,			2016-0057, 2018		
						,		
		5.	Todorov, M.,	Key Pe	rformance Indicators for	International Journal of		
			Jovanoski, B.,	lean: L	iterature review and	Modern Studies in		
			Minovski, R.	recomm	nendations	Mechanical Engineering		

				(IJMSME), 5 (1), <u>1</u> 36., 2019	op. 27-						
	6.	Argilovski, A., Jovanovski, B., Kochov, A. & Minovski, R.	Industry 4.0 for more competitive SMEs: Review of existing Industry 4.0 Maturity Models.	Proceedings of the EPIEM Conference Creating a Europea Future at the Inters "Innovation – Digi – Sustainability", p 47. 1-4 June 2022,	15th e 2022 - an IEM section talisation op. 41- Graz,						
12.2.	Proof of at least two printed scientific research papers in international scientific journals with impact										
	factor	in the given field in the	e last five years	D 11:1 /							
	NO.	Author		Publisher/year	-1 - £						
	1.	Jovanoski, R., Jovanoski, B., Galevski, P.	implications: experiences from Macedonia	Lean Six Sigma. doi.org/10.1108/IJJ 2016-0057, 2018	LSS-10-						
12.3.	2. Proof	of at least three particip	ation in international meetings in the las	st four years							
12.3.	No.	Author	Title	International							
	1	A nailarralri A	An arrantiarra of the digital	meeting/conference	2022						
	1.	Argilovski, A., Jovanoski, B., Minovski, R.	An overview of the digital transformation and industry 4.0 technologies implementation frameworks	19th International Scientific Conference on Industrial Systems – IoT Technologies, pp. 34-39. 4-6 October 2023,	2023						
	2.	Argilovski, A., Jovanoski, B., Minovski, R. & Musliji, A.	Mapping the current research on the different viewpoints regarding relationship between Lean and Industry 4.0	Novi sad, Serbia Proceedings of the 8th INTERNATIONAL CONFERENCE ON INDUSTRIAL ENGINEERING, pp. 94-97. 29-30 September 2022, Belgrade, Serbia	2022						
	3.	Argilovski, A., Jovanovski, B., Kochov, A. & Minovski, R.	Industry 4.0 for more competitive SMEs: Review of existing Industry 4.0 Maturity Models.	Proceedings of the 15th EPIEM Conference 2022 - Creating a European IEM Future at the Intersection "Innovation – Digitalisation – Sustainability", pp. 41-47. 1-4 June 2022, Graz, Austria							

Add. 4		Information about the tea	eachers that lecture at the first, second and third study program and				
		are mentors on the docto	ral thesis				
1.	Name(Fir	st, Last)	Igor Shesho				
2.	Date of bi	urth	1.07.1982				
3.	Scientific	degree/Title	VIII/PND				
4.	Title of th	e scientific degree	Ph.D. in Technical Sciences				
5.	Y ear and	institution of the	Education	Year	r Institution		
	scientific	degree	PhD in	2015	Universit	y "SS.Cyril and	
			Technical		Methodiu	s" in Skopje	
			Sciences		Faculty of	f Mechanical	
				2000	Engineeri	ng	
			MSC Taalaa isaal	2009	Universit	ty "SS.Cyril and	
			Seieneeg		Feeulty of	s in Skopje	
			Sciences		Faculty 0	ng	
			BSc	2006	Universit	ng ty "SS Cyril and	
			Technical	2000	Methodiu	s" in Skonie	
			Sciences –		Faculty of	f Mechanical	
			Mechanical		Engineeri	ng	
			eng.		Linginio		
6.	Area, field	d and particular specialty	Area	Field	Specialty		
	of master	of science degree	Technical-	Thermotechnics	Heating V	Ventialtion and Air	
			technological		Condition	ning	
			sciences			-	
7.	Area, field	d and particular specialty	Area	Field	Specialty		
	of Doctor	al degree	Technical-	Energetics	Non conv	rentional energy	
			technological		sources, 2	20505	
			sciences			Γ	
8.	If employ	ed, state the institution	Institution			Title and area	
	where he/	sne the title and area in	University "SS	S.Cyril and Method	ius" in	Associate	
	which is r	a med	Skopje		ng professor, Non conventional		
	which is i	lunica	Faculty of Me	chanical Engineerin			
						energy sources,	
-	X 1 0			20505			
9.	List of co	urses that the teacher is lec	turing separatel	y for first, second ar	nd third cyc	le	
	9.1. L	Ist of courses that the teach	ter is lecturing i	n the first cycle	titution		
	IN	lo. Course			sitution		
	1.	. Renewable energy	sources	EE, TEI, MHT,	<u></u>		
	2.	. Thermal machines	and devices	MHT, AFI, HEI, N	API		
	3.	Applied software i	n thermal	EE, IEI			
	4	Dreiget in renewah	1	EE TEI			
	4.	sources	le ellergy	EE, IEI			
		Practice		TEI			
		Basic energy econo	omics	EE, TEI			
	9.2. L	ist of courses that the teach	ner is lecturing in	n the second cycle			
	No.Course1.Renewable energy Advance Level I2.Non – Convention			Study program/Ins	titution		
			sources -	EE, SEE, TEI			
			al power	TEI			
		plants – Advanced	Level I				
	3.	. Energy Economics		EE, TEI			
	4.	. Modeling and simu	ulation of	EE, TEI			
1		energy processes					

	9.3.	List of	f courses that the tea	cher is lecturing i	n the third cycle	
		No.	Course		Study program/Ins	titution
		1.	Energy efficiency	ý	Mechanical engine	eering
		2.	Nonconventional	power plants	Mechanical engine	eering
		3.	Renewable enrgy	v sources –	Mechanical engine	eering
			thermal transform	nation		2
		4,				
10.	Selecte	ed result	ts in the past five ye	ars		
	10.1.	Releva	ant printed scientific	papers (up to 5)		
		No.	Author	Title		Publisher/year
		1.	I.Shesho,	Optimal Integra	tion of Solar	Energija, ekonomija,
			R.Filkoski, D.	Assisted Heating Systems in		ekologija, 4, XXIII, 2021
			Tashevski,	Residential Bui	ldings	
			M.Uler-Zefikj			
		2.	B.Hoxha,	Analysis of Wir	nd Turbine	Sustainability, MDPI, 14,
			I.Shesho,	Distances Using	g a Novel	13688, 2022
			R.Filkoski	Techno-Spatial	Approach in	
		-		Complex Wind	Farm Terrains	
		3.	I.Shesho,	The Importance	of District	Energija, ekonomija,
			M.Uler-Zefikj,	Heating System	s in Periods of	ekologija, 2022, god. XXIV,
			R.Filkoski,	Energy Crisis: Case Study for the		br. 2
		4	D. I ashevski	City of Skopje	C 1 1 1	
		4.	I.Shesho,	Cost evaluation of technologies		ANNALS of Faculty
			A.Snesno	for space heatin	g, cooling and	Engineering Hunedoara –
				Domestic not w	attracenta in n N	Engineering
				Macedonia		Tome XX [2022]
		5	E Lazova	Assesment of th	ne macedonian	ANNALS of Faculty
		5.	L.Lazova, I.Shesho	nower system n	otential toward	Engineering Hunedoara –
			1.51105110	green energy tr	ansition	International journal of
				green energy the		engineering
						Tome XXI, 2023
	10.2.	Partici	pation in scientific r	national and intern	national projects (up	to 5)
		No.	Author	Title		Publisher/year
		1.	Group of authors	Development of	f an ORC plant for	Fund for Innovation and
				the use of waste	e heat - ORMAK	Technological Development,
						2019
		2.	Igor Shesho et.al	Techno-econom	nic and ecological	Faculty for Mechanical
				analysis of the p	potential for the	engineering Skopje 2019-2020
				implementation	of renewable	
				energy sources	in a central hot	
				water heating sy	stem in an urban	
	10.2	Drinta	d books in the last fo	cirvironment		
	10.3.	No	Author	Title		Publisher/year
		1	Л Ташарски		TUPGUIU	Decision for publishing a
		1.	Д.Ташевски, И Шещо	парни и гасни	туройни	teaching book pr. 02-215/1
			Ф Злравевски			2021 GrafoProm Bitola / 2023
		2	Д Ташевски	Термоенергетс	ки построіки	Decision for publishing a
		2.	И Шещо	Учебник (прво	излание)	teaching book nr $02-87/2$ in
			С. Арменски	у чеоник (прво издание)		progress, e-biblioteka UKIM
		3.	Д. Ташевски. И	Нуклеарни тер	моцентрали	Decision for publishing a
			Шешо,	Учебник (прво	издание)	teaching book nr. 02-86/2. in
			,	(progress, e-biblioteka UKIM
	10.4.	Printe	d professional papers	s in the last 5 year	rs (up to 5)	
		No.	Author	Title	- <i>i</i>	Publisher/year

		1.	Group of authors	Final design Wastewater Kocani – Me HVAC,	and construction of r Treatment Plant in echanical design	Faculty for Civil Enginee 2018	ering,	
		2.	I.Shesho et.al	Study, Asse remaining so boilers in Es "Energetika	ssment of the ervice life of WB SM, subsidiary " - Skopje	CIRKO, 2020		
		3.	I.Shesho	Ventilation biogas coge	of machine room with nerative devices	Bioenterprise, 2021		
		4.	I.Shesho	Techno-eco possibilities integrating a collectors for heating 1 cooling syst	nomic analyzes of the for a system with solar DHW and heating and em	h.Sileks,2022		
		5			X. SHCKS			
11	Superv	vision (m	entorshin) of under	adergraduate master and doctoral studies students				
	11.1.	Under	graduate	Bradade, ma	22	Statemb		
	11.2.	Master	•		3 (2 currently)			
	11.3.	Doctor	al					
12.	For me	entors of	doctoral theses, se	lected papers	for the last four/five y	ears		
	12.1.	Proof of scientia	Proof of printed scientific research papers in international scientific journals or international scientific publications in the given field (up to six) in the last five years					
		No.	Author	Title	· • /	Publisher/year		
		1.						
		2.						
	12.2.	Proof of impact	of at least two printe factor in the given	ed scientific re field in the la	esearch papers in intern st five years	ational scientific journals	with	
		No.	Author	Title		Publisher/year		
		1.						
		2.						
	12.3.	Proof	of at least three part	icipation in ir	ternational meetings in	the last four years		
		No.	Author	Title		International meeting/conference		
		1.						
		2.						
		3.						

Add. 4 Information about mentors on the d		t the teachers that lecture at the first, second and third study program and are						
1.	1. Name (First, Last)		Mirko Petrushev	Mirko Petrushevski				
2.	Date of b	irth	07.10.1978	07.10.1978				
3.	3. Scientific degree/Title		VIII / Dr.					
4.	Title of the scientific		Doctor in Mathematical Sciences					
	degree			-				
5.	Year and	institution of the	Education	Year	Institution			
	scientific degree		B. Sc. in	1994-1999	Faculty of Natural Sciences			
			Mathematics		and Mathematics - Skopje			
			M.Sc. in	2000-2006	Faculty of Natural Sciences			
			Mathematics		and Mathematics - Skopje			

				Dr. in		2006-2010	Faculty of Natural Sciences	
				Technic Science:	al s		and Mathematics - Skopje	
6.	Area,	field and pa	ırticular	Area		Field	Specialty	
	specia scienc	alty of master of ce degree		Natural Mathem sciences	and atical	Mathematics	Analysis and functional analysis	
7.	Area,	field and pa	articular	Area		Field	Specialty	
	specialty of Doctoral degree with the corresponding code of the field of the Doctoral degree according to International Frascati classification of 2015 and relevant domestic acts which establish scientific areas third level - fields		Mathem	atical	Mathematics	Graph Theory (10910)		
8.	If emp	oloyed, state	e the	Institutio	on	Title	Scientific Area	
	institu works in whi accord Frasca 2015 a acts w scient fields	nstitution where he/she works and the title and area n which is named j according to International Frascati classification of 2015 and relevant domestic acts which establish scientific areas third level -		Univers Cyril an Method Faculty Mechan Enginee Skopje	ity Ss. id ius, of ical ering -	Associate Professor, Mathematics and Informatics	Mathematics (10900)	
9.	List of	f courses th	at the teach	er is lectu	ring sep	parately for first, second and	third cycle	
	9.1.	List of con	urses that th	e teacher	is lectur	ring in the first cycle		
		No.	Course			Study program/Institution		
		1.	Mathema	natics 1		All programmes/ Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje		
		2.	Mathema	tics 2		All programmes/ Faculty of Mechanical Engineering, University Ss. Cyril and Methodius-Skopje		
		3.	Engineeri	ng		Mechatronics,, Automation	and control systems, Energy	
			Programm	nıng		and Environment/ Faculty	of Mechanical Engineering,	
	92	Listofco	urses that th	e teacher	is lectur	ring in the second cycle	стопия-экорје	
	.2.	No.	Course		15 10010	Study program/Institution		
		1.	Selected	Topics in		All programmes,/ Faculty of Mechanical Engineering,		
			Mathema Informati	tics and cs		University Ss. Cyril and M	ethodius-Skopje	
		2.	Selected 7	Topics in		PLM		
	Probabili3.Probabili		Probabili	ty and Sta	atistics			
			Probabili	ty and Sta	atistics	SEE		
	9.3.	List of cou	urses that th	e teacher	is lectu	ring in the third cycle		
10	Salaat	NO.	Course	vo voors		Study program/Institution		
10.	10.1	Relevant 1	nrinted scier	ve years	ers (un t	ro 5)		
	10.1.	No.	Author	nine pap	Title	N J j	Publisher/vear	
		1.	M. Petruše	evski	Odd 4	-edge-colorability of	Wiley/ 2018	
					graphs 474, (2	s, J. Graph Theory 87, 460- 2018).		

-			F				
		2.	M. Petruševski, R. Škrekovski	Coverabilit odd subgra 92, 304-32	<i>y of graph by three phs</i> , J. Graph Theory 1, (2019).	Wile	y / 2019
		3.	M. Petruševski, R. Škrekovski	Odd decom coverings o Combin. 91	positions and f graphs, Europ. J. , (2021).	Elsev	vier / 2021
		4.	M. Petruševski, R. Škrekovski	Coverabilit regular sub 9, (2021).	y of graphs by parity graphs, Mathematics	MDI	PI / 2021
		5.	C. Hernández- Cruz, M. Petruševsk <u>i</u> , R. Škrekovski,	Notes on we colorings o Contemp. 2	eak-odd edge f digraphs, Ars Math. 2, #P2.05, (2022).	Univ 2022	versity of Primorska /
	10.2.	Participation in scientific national and international projects (up to 5))					
		No.	Role (author or participant)	Title		Dura Fina	ition ncing institution
	10.3.	Printed books in the last five years (up to 5)					
		No.	Author	Title		Publ	isher/year
	10.4.	Printed pr	ofessional papers	in the last 5 yea	rs (up to 5)	1	
		No.	Author	Title		Publ	isher/year
11.	Super	vision (mer	torship) of underg	graduate, master	and doctoral studies st	udents	
	11.1.	Undergrad	duate				
	11.2.	Master					
	11.3.	Doctoral					
12.	For m	entors of do	octoral theses, sele	cted papers for	the last four/five years		
	12.1.	Proof of p	printed scientific re	search papers in	n international scientifi	c journ	als or international
		scientific	publications in the	given field (up	to six) in the last five	vears	• 1 /
	12.2	INO. Proof of a	Author	I itle	rah nanara in internatio	Publi	isner/year
	12.2.	impact fac	tor in the given fi	eld in the last fi	ve vears	nai sele	entine journais with
		No.	Author	Title	ie jeurs	Publ	isher/vear
	12.3.	Proof of a	t least three partic	ipation in intern	ational meetings in the	last fo	ur years
		No.	Author	Title	International meeting/conference		Year.
I	1	1					

Add. 4		Information about the te	achers that lectur	e at the first, see	cond and third study program and		
are mentors on the doctor			oral thesis				
1. Name(First, Last)			Trajche Velkov	vski			
2. Date of birth			May 01, 1985	May 01, 1985			
3. Scientific degree/Title			Ph.D / Assistant Professor				
4. Title of the scientific degree		Doctor of techn	Doctor of technical-technological sciences in the field of industrial				
			engineering and	d management			
5.	5. Year and institution of the		Education	Year	Institution		
scientific degree		Ph.D in	2008	Faculty of Mechanical			
		Mechanical		engineering - Skopje			
			Engineering				
		M. Sc. in	2011	Faculty of Mechanical			
			Mechanical		engineering - Skopje		
			Engineering				
			B. Sc. in	2019	Faculty of Mechanical		
			Mechanical		engineering - Skopje		
			Engineering				

6.	Area,	field and	l particular specialty	Area	Field Specialty		
	of mas	ster of so	cience degree	Technical-	Industrial	strial Human Resources	
				technological	Engineering		
				sciences	and		
					Management		
					_		
7.	Area,	field and	l particular specialty	Area	Field Specialty		
	of Doc	ctoral de	egree	Technical-	Industrial	21103 Sti	dy of factors in working
				technological	Engineering	environm	ent and safety at work
				sciences	and		
					Management		
0	10	1 1	1 • .••	T			TC: (1 1
8.	If emp	loyed, s	tate the institution	Institution			Title and area
	where	ne/sne	title and ence in	Faculty of Me	Faculty of Mechanical engineering - Assistant Professor		
	works	is nome	the and area in	Skopje	-		21103 Study of factors
	which	18 manne	a				in working
							environment and safety
							at work
				<u> </u>			
9.	List of	courses	s that the teacher is le	cturing separatel	y for first, secon	d and third	cycle
	9.1.	List of	t courses that the teac	ther is lecturing in	n the first cycle	/T .''	
		No.	Course		Study program/	Institution	
		1.	Safety Engineerin	ıg	PI, TML/ Facul	lty of Mech	nanical engineering –
					Skopje (FME)		
		2.	Human resource r	nanagement	IEM/FME		
		3.	Project manageme	ent	IEM /FME		
		4.	Ergonomics		PI, IEM /FME		
		5.	Practice		PI/FME		
	9.2.	List of	f courses that the teac	ther is lecturing in	n the second cyc	le	
		No.	Course		Study program/	Institution	
		1.	Safety in technolo	ogical systems	IEM/FME	<u> </u>	11 11 1 0
		2.	Human Resource	Management	Management of	t occupation	hal health and safety
		3	Occupational heat	Ith and safety	Management of	focupation	nal health and safety
		5.	systems	thi and safety	systems /FME		har nearth and safety
		4.	Occupational risk	management	IEM /FME		
		5.	Motivation and cr	eative teams	IEM/FME		
		6.	Project cycle man	agement	IEM/FME		
	9.3.	List of	f courses that the teac	her is lecturing in	n the third cycle		
		No.	Course		Study program/	Institution	
		1.	Occupational safe	ety and risks	IEM/FME		
		2.	Human resource of	development	IEM/FME		
10.	Select	ed resul	ts in the past five yea	ars			
	10.1.	Releva	ant printed scientific	papers (up to 5)			
		No.	Author	Title		Publisher	/year
		1.	Trajce	Exploring the qu	ualitative	19th Inter	national Scientific
			Veľkovski,	dimensions of in	ndividual	Conference	ce on Industrial Systems,
			Jasmina	motivation of en	nployees in	INTERN	ET of THINGS
			Chaloska, Zlatko	selected macedo	onian	TECHNC	DLOGIES, IS '23, 5-6,
			Petreski, Dragan	manufacturing c	companies for	October 2	023, Novi Sad, Serbia.
			Mitkovski,	occupational hea	alth and safety		
			Vladimir	trainings: a self-	determination		
1	1	1	Mučenski	theory perspecti	ve	1	

	2.	Velkovski Trajce, Anachkova Maja, Domazetovska Simona, Chaloska Jasmina, Petreski Zlatko	Analysis of the efficiency of sound barriers as a method for passive control of traffic noise	EUROSA 2023, FIRST INTERNATIONAL EUROSA CONFERENCE, September 12-15.2023, Kopaonik, Serbia
	3.	Dušica Savić, Vladimir Mučenski, Trajče Velkovski, Jovana Topalić Marković, Miodrag Hadžistević & Miloš Šešlija	Model for improvement of occupational health and safety in micro and small construction enterprises	International Journal of Occupational Safety and Ergonomics, 2021
	4.	Jovana Topalić Marković, Vladimir Mučenski, Dušica Savić, Trajce Velkovski, Igor Peško, Lidija Tomaš	Risk Assessment Model for Planning and Design Processes of Wastewater Treatment Plants	Periodica Polytechnica Civil Engineering, 2020. https://doi.org/10.3311/PPci.1674, 2021
	5.	Vladimir Mučenski, Igor Peško, Trajce Velkovski, Jasmina Čaloska, Aleksandra Vujkov, Dragana Bibić	"Impact of Construction Machinery and Tools on Non- Fatal Injuries in the Building Processes"	DOI Number: 10.17559/TV- 20170703160241Scientific- professional Journal of Technical Faculties of University in Osijek, Technical Gazette 25, 6(2018), 1201-1208 (Web of Science, impact factor for 2018 - 0,64), 2018
10.2	2. Partic	ipation in scientific 1	national and international projects	(up to 5)
	No.	Author	Title	Publisher/year
	1.	Trajce Velkovski - regional coordinator and Project partner responsible for University Ss.Cyril and Methodius	"Sustainable Living Labs for Regional Entrepreneurial Cooperation" – GREEN WB	ERASMUS-EDU-2023-CBHE- STRAND-2; ERASMUS-LS, 2023-2026
	2.	Trajce Velkovski - regional coordinator for all Macedonian partners and Project partner responsible for University Ss.Cyril and Methodius	European VET Excellence Platform for Green Innovation - GREENOVET	ERASMUS +, 2020-2024

		3.	Trajce Velkovski, Occupational safety key expert	Revision of hazardous of for early ret extended se	the list of occupations eligible irement with rvice period (ESP)	World Bank under the p Social Insurance Admir Project (SIAP) at the M Labor and Social Policy Macedonia, 08.2021-12	project nistration inistry of v in North 2023
		4.	Trajce Velkovski – project team member from University Ss.Cyril and Methodius, Faculty of Mechanical Engineering	"Increasing competitive domestic SI improve the foreign inve (InComSM	the ness of the MEs in order to sir cooperation with estors' companies Es)";	IPA 1, EuropeAid/138495/ID/. 2017-2019	ACT/MK,
		5.					
	10.3.	Printec	l books in the last fi	ve years (up t	to 5)		
		No.	Author	Title		Publisher/year	
		1.					
	10.4.	Printec	l professional papers	s in the last 5	years (up to 5)		
		No.	Author	Title		Publisher/year	
		1.					
11.	Superv	rision (n	entorship) of under	graduate, ma	ster and doctoral stud	lies students	
	11.1.	Undergraduate 9					
	11.2.	Master			2		
	11.3.	Doctor	al				
12.	For me	ntors of	doctoral theses, se	lected paper	s for the last four/fiv	e years	
ſ	12.1.	Proof	of printed scientific	research pap	ers in international so	cientific journals or interr	national
		scienti	fic publications in the	he given field	l (up to six) in the las	st five years	
		No.	Author	Title		Publisher/year	
_		1.					
	12.2.	Proof	of at least two printe	ed scientific r	esearch papers in int	ernational scientific journ	nals with
		impact	factor in the given	field in the la	ast five years	Ι	
		No.	Author	Title		Publisher/year	
		1.					
	12.3.	Proof	of at least three part	icipation in i	nternational meetings	s in the last four years	
		No.	Author	Title		International	
						meeting/conference	
		1.					

APPENDICES

Annex no. 5 Diploma Supplement

> "SS CYRIL AND METHODIUS" UNIVERSITY IN SKOPJE FACULTY OF MECHANICAL ENGINEERING - SKOPJE



1. Information identifying the holde	r 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 qualif	ication
2.1. Date of issuance	
2.2. Name of qualification	Master of science in Industrial Engineering and Management - LEAN Management
2.3. Name of study programme, main area, field, and branch of study	LEAN Management Technical-technological sciences Mechanical engineering Production engineering, Technologies, and systems
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) o	f 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 production engineering, metalforming processes, injection molding processes, smart systems and technology of rapid prototyping, virtual engineering, integrated CAD/CAM systems				
4.3. Programme details (orientation, module, grades, ECTS credits) ⁶	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 qualif	ication				
5.1. Access to further study	Third cycle of studies				
5.2. Professional status (if applicable)					
6. Additional information					

 $^{^{\}rm 6}$ The Appendix mentioned in 4.3 is the Results Certificate

r

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		
7. Certification of the supplement			
7.1. Date and place			
7.2. Name and signature	ProfessorZlatko Petreski, PhD	Professor Biljana Angelova, PhD	
7.3. Capacity of the signee	Dean	Rector	
7.4. Seal	Seal of the Unit	Seal of the University	

Annex no. 6

Copy of the Decision on accreditation of a study program issued by the Board for Accreditation and Evaluation of Higher Education of the Republic of Macedonia, i.e. the Board for Accreditation, a body within AKVO (if the study program is submitted for re-accreditation)



Научно – истражувачко област: Области од наведеното поле.

4. Акредитацијата на студиската програма од точка 1 на ова решение е за период од пет (I и II циклус) учебни години, почнувајќи од учебната 2019/2020.....

5. Ова решение е конечно и влегува во сила со денот на донесувањето.

Република Северна Македонија УНКВЕРЗНТЕТ "СБ. ККРНА Н МЕТОДИЗ"-СКОПЗЕ МАШИНСКИ ФАКУЛТЕТ"

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РЕПУБЛИКА СЕВЕРНА МАКЕДОНИЈА ОДБОР ЗА АКРЕДИТАЦИЈА И ЕВАЛУАЦИЈА НА ВИСОКОТО ОБРАЗОВАНИЕ

Образложение

Врз основа на донесената одлука на Одлука на наставно научен совет на Машински факултет Скопје, за усвојување на втор циклус студиските програми "Lean менаџмент, Lean Management", на англиски јазик на 20.02.2019 година до Одборот за акредитација и евалуација на високото образование во РМ достави предлог за прифаќање на елаборат за акредитација на предметната студиска програма.

Одборот за акредитација и евалуација на високото образование во РМ, на 22 седница, одржана на 21.02.2019 формира стручна комисија за оценка на доставениот предлог и врз основа на позитивната оценка содржана и извештајот на стручната комисија, на својата 24 седница одржана на 08.04.2019 година, одлучи како во диспозитивот на ова решение.



Annex no. 7

Copy of the Decision to start work on a study program issued by the MES of RSM or AKVO (if the study program is submitted for re-accreditation)

Република Северна Македонија Министерство за образование и наука



Republika e Maqedonisë së Veriut Ministria e Arsimit dhe Shkencës

УП1 бр. 14-734 <u>25 -06- 2019</u>година

Врз основа на член 55 став 1 од Законот за организација и работа на органите на државната управа ("Службен весник на Република Македонија" бр. 58/00, 44/02, 82/08 167/10 и 51/11), врз основа на член 211 став 1 и 3 од Законот за високото образование ("Службен весник на Република Македонија" бр. 82/18), а во врска со член 104 став 2 од Законот за високото образование ("Службен весник на Република Македонија" бр. 82/18), а во врска со член 104 став 2 од Законот за високото образование ("Службен весник на Република Македонија" бр. 82/18), а во врска со член 104 став 2 од Законот за високото образование ("Службен весник на Република Македонија" бр. 35/08, 103/08, 26/09, 83/09, 99/09, 115/10, 17/11, 51/11, 123/12, 15/13, 24/13, 41/14, 116/14, 130/14, 10/15, 20/15, 98/15, 145/16, 154/15, 30/16, 120/16 и 127/16), Министерот за образование и наука донесе

РЕШЕНИЕ

за почеток со работа на студиските програми од втор циклус едногодишни студии по Lean менацмент, Lean management и Виртуелно производно инженерство, Virtual manufacturing engineering на англиски јазик на Машинскиот факултет во Скопје единица во состав на Универзитетот "Св. Кирил и Методиј" Скопје

1. Со ова решение се утврдува дека се исполнети условите за почеток со работа на студиските програми од втор циклус едногодишни студии по Lean менаџмент, Lean management и Виртуелно производно инженерство, Virtual manufacturing engineering на англиски јазик на Машинскиот факултет во Скопје единица во состав на Универзитетот "Св. Кирил и Методиј" Скопје.

2. Ова решение влегува во сила со денот на донесување.

Образложение

Машинскиот факултет при Универзитет "Св. Кирил и Методиј" во Скопје, се обрати со барање 6р. 08-640/3 од 13.05.2019 година, до Министерството за образование и наука, под наш бр. 14-5457/1 од 13.05.2019 година, за утврдување на исполнетоста на условите за почеток со работа на Lean менацмент, Lean management и Виртуелно производно инженерство, Virtual manufacturing engineering на англиски јазик на Машинскиот факултет во Скопје единица во состав на Универзитетот "Св. Кирил и Методиј" Скопјена Машинскиот факултет во Скопје единица во состав на Универзитетот "Св. Кирил и Методиј" Скопје, акредитирани со Решенија за акредитација бр. 1409-159/3 и бр. 1409-160/3 од 15.04.2019 година, издадени од страна на Одборот за акредитација и евалуација на високото образование.

Министерството за образование и наука, со Решение бр. 14-5457/2 од 07.05.2019 година, формира Комисија за утврдување на исполнетоста на условите за почеток со работа на студиските програми од наведени во точка 1 на ова решение.

Комисијата на ден 27.05.2019 година, изврши увид и изготви Извештај бр. 14-5457/3 од 28.05.2019 година, каде е наведено дека Lean менаџмент, Lean management и Виртуелно производно инженерство, Virtual manufacturing engineering на англиски јазик на Машинскиот факултет во Скопје единица во состав на Универзитетот "Св. Кирил и Методиј" Скопје, се исполнети условите согласно одредбите утврдени со Законот за високото образование и Уредбата за нормативи и стандарди за основање на високообразовни установи и за вршење на високообразовна дејност ("Службен весник на Република Македонија" бр. 103/10, 168/10 и 10/11).

Имајќи го во предвид изнесеното, се одлучи како во диспозитивот на ова решение.

ПРАВНА ПОУКА: Против ова решение, може да се заведе управен спор, со поднесување на тужба до Управините у ведену Олика Македонија, во рок од 30 дена од денот на приемот на ова решение. УНИВЕРЗИТЕТ СВ. КИРИА И МЕТОДИЈ СКОПЈЕ



OB.1

Annex no. 8

Lease agreements

N/A

Annex no. 9

Bank guarantee – for private higher education institutions Financial plan in cycles of three or four years

N/A

Annex no. 10

M1/M2 – for private higher education institutions

N/A

Annex no. 11

Program/Strategy for the development and work of the higher education institution for a period of 3 years

The Faculty of mechanical engineering has adopoted the Policy for Quality management. The program is available on-line. The program allows to realize the high level quality of education, research and applicative work of the Institution.

Link: https://www.ukim.edu.mk/dokumenti_m/Strategija_i_AP/ Strategija_na_UKIM_2024-2029_MK.pdf

Annex no. 1 2

Action plan for realization of the program/Strategy for the development and operation of the higher education institution for a period of 3 years

Link: https://www.ukim.edu.mk/dokumenti_m/Strategija_i_AP/ Akcionen_plan_na_UKIM_2024-2029_MK.pdf