Study program: TRANSPORT, ORGANIZATION AND LOGISTICS (3 years)

I Semester-First year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Mathematics I	8	3+2+2	216
Mechanical materials	8	3+2+2	216
Computer Science	6	2+2+1	156
Elective subject from the faculty 1	4	2+1+1	120
Elective subject from the faculty 2	4	2+1+1	120
Total:	30	12+8+7	828

I Semester-First year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Basics of Physics	4	2+1+1	120
Physics II	4	2+1+1	120
Electrotechnics and elektronics	4	2+1+1	120
Casting technology	4	2+1+1	120

II Semester-First year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Mathematics II	8	3+2+2	216
Engineering graphics	6	2+2+1	156
Technical Mechanics I (statics)	6	2+2+1	156
Elective subject from the faculty 3	4	2+1+1	120
Elective subject from the University 1	6	0+0+1	156
Sports and Recreation	0	0+0+2	
Total:	30	9+7+11	804

II Semester-First year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
The modern mechanical materials	4	2+1+1	120
Engineering logistics	4	2+1+1	120

IIISemester-Second year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Thermodynamics	8	3+2+2	216
Strength of materials	8	3+2+2	216
Technical Mechanics II (kinematics, dynamics, oscillations)	6	2+2+1	156
Elective subject from the faculty 4	4	2+1+1	120
Elective subject from the faculty 5	4	2+1+1	120
Total:	30	12+8+7	828

IIISemester-Second year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Corrosion and corrosion protection	4	2+1+1	120
Probability and statistics	4	2+1+1	120
Ergonomics	4	2+1+1	120
Industrial Management	4	2+1+1	120

IVSemester-Second year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Machine elements	8	3+2+2	216
Fluid Mechanics	6	2+2+1	156
Numerical methods	6	2+2+1	156
Elective subject from the faculty 6	4	2+1+1	120
Elective subject from the University	6	0+0+4	156
Total:	30	9+7+9	804

IVSemester-Second year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Measurement and measuring instruments	4	2+1+1	120
Heat transfer	4	2+1+1	120

V Semester- Third year			
Mandatory subjects			
SUBJEKTS	ECTS	Hours	Total
Management Information Systems	8	3+2+2	216
Internal combustion engines	8	3+2+2	216
Human resource management	6	2+2+1	156
Elective subject from the faculty 7	4	2+1+1	120
Elective subject from the faculty 8	4	2+1+1	120
Total:	30	11+8+7	828

V Semester- Third year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Plants and fuel	4	2+1+1	120
Basics of thermo-technical machines	4	2+1+1	120
Engineering economics	4	2+1+1	120
City public transport	4	2+1+1	120

VI Semester- Third year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Theory of movement of motor vehicles	8	3+2+2	216
Operations Research	6	2+2+1	156
Elective subject from the faculty 9	4	2+1+1	120
Elective subject from the University 3	6	2+2+1	156
Final exam	6	0+0+6	144
Total:	30	9+7+11	792

VI Semester- Third year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Project Management	4	2+1+1	120
Dynamics of motor vehicles	4	2+1+1	120

FACULTY OF MECHANICAL ENGINEERING – STADY PROGRAM: TRANSPORT, ORGANIZATION AND LOGISTICS

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Mathematics I**			
2.	**Code**	2FI100112			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of Computer Science-Vinica Department of Mathematics and Statistics			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	2012-2013/first	**7.**	**Number of credits**	8
8.	**Professor (s)**	Prof. Jordan Zivanovik ,PhD/ Prof. Martin Lukarevski, PhD			
9.	**Requirements for enrollment the Course**	no			
10.	**Purposes of the curriculum (competencies)**: Upgrading high school mathematics knowledge and introduction to higher mathematics				
11.	**Content of the course program:** Axiomatic definition of the real numbers. Limited sets. Intervals, environments, open and closed sets. Absolute value and distance. Mathematical induction. Matrices. Operations with matrices. Some special matrices. Determinants. Minor and algebraic complements. Calculating the inverse matrix. Kramer formulas. Gauss algorithm. Vectors. Collection of vectors. Multiplying a vector by a number. Coordinate system. Scalar, vector and mixed product. Equations of the line and plane. Relationship between lines and planes. Real sequence. Convergence and the limit. Limited and monotonous sequences. Operations with sequences. Zero-sequences and sequences with unlimited grow in absolute value. Number e. Some special sequences. Subsequences. Kauchy's sequence convergence criterion. Real function of a real variable - basic concepts. Examples of functions and some classes of functions - elementary functions. Limits and continuity of functions. Statements and rules for their calculation. Basic theorems in differential calculus. L' Hopital's rule. Monotony and extremes. Second derivative and its application. Examination of functions and construction of graphs. Higher-order derivatives and differentials. Taylor's formula.				
12.	**Learning methods:** Lectures, laboratory exercises, numerical exercises, e-learning, seminar work, teamwork, consultation				
13.	**Total available time**	216 hours			
14.	**Distribution of available time**	3+2+2 / per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3 hours	
		15.2.	**theoretical and practical exercises,**	2 hours	

			e-exams, preparation of independent seminar work	
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% success from all pre-exam activities i.e. 42 points from two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Glin Dzejms	Matematika na moderen inzhenering	Translation of the Government of R.Macedonia	2009
		2.	Zivanovik and assistants	Predavanja I vezbi po Matematika 1	e-ucenje	2010
		3.	B.Trpenovski, N.Celakoski, G.Cupona	Visa matematika I-IV	Prosvetno delo, Skopje	1995
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Milan Merkle	Matematicka analiza	Racunarski Fakultet - Beograd	2007
		2.	Ivan Slapnicar http://www.fesb.hr/mat1	Matematika 1	Fakultet, Elektr.strojarstva I	2002

					brodogradnje, Split	
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Mechanical materials**			
2.	**Code**	2MF100112			
3.	**Study Program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of Computer Science-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First/I semester	**7.**	**Number of credits**	8
8.	**Professor (s)**	Slavco Cvetkov, PhD, Associate Professor			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** At the end of the course, students will have competences obtained through the necessary fund of theoretical, methodological and applicative studying in the area of mechanical materials.				
11.	**Content of the course program:** 1. Introduction to the materials 2. Division and structure of metals 3. Alloys and state diagram 4. Steels: Obtaining and labelling 5. Carbon steels: structural and tool steels 6. Alloy steel: structural and tool steels 7. Heat treatment of steels 8. Surface hardening of steels 9. Cast iron: gray iron and malleable iron 10. Non ferrous metals and their alloys 11. Ceramics, glass and composites 12. Polymers and non metals (wood, leather, rubber)				

12.	**Learning methods:** -Teaching, exercises, projects assignment			
13.	**Total available time**		216	
14.	**Distribution of available time**		**3 + 2 + 2 / per week**	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	/ hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Angel Tasevski, PhD Vladan Andonovic, MsC	Mechanical materials	UGD - Stip	2011
		2.	Angel Tasevski, PhD Vladan Andonovic, MsC	Mechanical materials estimation	UGD - Stip	2011
		3.				

	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Computer Science**			
2.	**Code**	2FI110112			
3.	**Study program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of Computer Science-Vinica			
5.	**Cycle (first, second, or third study cycle)**	First study cycle			
6.	**Academic year / semester**	2012-2013 / first	7.	**Number of credits**	6
8.	**Professor (s)**	Assi. Professor Zoran Zdravev, PhD			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** - Adopting the basic concepts of computer science and concepts for using computers for communication, research and office work				
11.	**Contents of the course program:** - Introduction to computer science: algorithms, abstraction, history, - Computer hardware: introduction, types, architecture of computer systems, Murau law - Computer hardware: Peripherals, Computer Memory, digital identification; - Computer software: applicative software, open source software licenses; - Computer software: system software, programming languages; - Computer software: web services, online document storage and editing systems, - Computer networks: LAN, MAN, WAN, topologies, applications that run on network components, connectivity; - Computer networks: Internet, intranet, extranet, Internet services; - Computer security: a concept, a security risk, malicious software, unauthorized access, cryptography;				

	- Information systems: introduction, types, ERP, CRM, HR, SCM; - Content Management Systems CMS: DMS, DAMS, WCM, ECP, ERS; - Databases: fundamentals, types, use			
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects,consultations.			
13.	**Total available time**		156 hours	
14.	**Distribution of available time**		2+2+1	
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		Up 50 points	5 (five) (F)
			51 to 60 points	6 (six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

Annex No.3	**Program of the Course - first/second/third cycle studies**	
1.	**Title of the Course**	**Basics of Physics**

2.	**Code**	2FP120512			
3.	**Study Program**	Production Engineering			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev Faculty of mechanical engineering			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	1/1	**7.**	**Number of credits**	4
8.	**Professor (s)**	Prof. Todor Delipetrov, PhD			
9.	**Requirements for enrollment the Course**	enrolled semester			
10.	**Purposes of the curriculum (competencies):** Students are introduced to the basic concepts and laws of physics (Newton's laws, Hooke's law), elasticity and plasticity of bodies				
11.	**Content of the course program:** Test methods in physics, structure of matter, interaction. Reference system - comparative body trajectory and separation movements, Special Theory of Relativity (time dilation and length contraction). Laws for the movement, the concept of force, Newton's first law, mass, Newton's Second Law, Newton's Third Law. Work, energy and power. Elasticity and structure of bodies: voltage and relative deformation, Hooke's law. Oscillations, alignment fluctuations. Fluid mechanics. Statics gases. Fluid dynamics. Wave motion. Sound and sound sources.				
12.	**Learning methods:** Lectures, exercises (numerical and practical), papers and home learning				
13.	**Total available time**	216 hours			
14.	**Distribution of available time**	2 + 1 + 1 / per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1	
16.	**Other forms of activities**	**16.1.**	**Project tasks**		
		16.2.	**Individual tasks**	1	
		16.3.	**Home learning**		
17.	**Method of assessment**				
	17.1.	**Tests / oral exams**	70 points		
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points		
	17.3.	**Activity and participation**	20 points		
18.	**Assessment Criteria (points / score)**	**up 50 points**	5 (five) (F)		
		51 to 60 points	6 (six) (E)		
		61 to 70 points	7 (seven) (D)		

		71 to 80 points	8	(eight)	(C)
		81 to 90 points	9	(nine)	(B)
		91 to 100 points	10	(ten)	(A)
19.	**Signature requirement and passing the final exam**	60% success from all activities before exam i.e. 42 points from two mid-term exams, seminar paper, attendance of lectures and exercises			
20.	**Language of teaching / study**	Macedonian			
21.	**Method of monitoring the quality of teaching**	Self-evaluation			

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Todor Delipetrov	Physics 1	RGF	2003
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Lj. Petkovski	General physics	UKIM	1995
		2.	Z. Stojanov	General physics, book 1	UKIM	1985
		3.				

Annex No.3	**Program of the Course - first/second/third cycle studies**				
1.	**Title of the Course**	**Physics 2**			
2.	**Code**	2FP101212			
3.	**Study Program**				
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev Faculty of mechanical engineering			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	1/2	**7.**	**Number of credits**	4
8.	**Professor (s)**	Prof. Todor Delipetrov, PhD			
9.	**Requirements for enrollment the Course**	Student has enrolled current year			
10.	**Purposes of the curriculum (competencies):** Students are introduced to the basic concepts and laws of electromagnetism, optics, nuclear and atomic physics				
11.	**Content of the course program:**				

	Heat: temperature, spread of bodies, state of gas, melting, boiling, vaporization. Electrostatics: Coulomb's law, electrical work and power of the electric current, Joule's Law, Ohm's law, thermal phenomena, magnetic permeability and susceptibility. AC: effective value of alternating current, power of alternating current, electrical oscillations. Geometrical optics: light rejection and image in the flat mirror, thin lens equation, optical instruments. Physical optics: nature of light, laser, optical lattice. Atomic and nuclear physics: spectrum of hydrogen atom, quantum theory, radioactive radiation, detectors and protection, radioactive decay law				
12.	**Learning methods:** Lectures, exercises (numerical and practical), papers and home learning				
13.	**Total available time**		156 hours		
14.	**Distribution of available time**		2 + 2 + 1 / per week		
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	
16.	**Other forms of activities**	**16.1.**	**Project tasks**		
		16.2.	**Individual tasks**	1	
		16.3.	**Home learning**		
17.	**Method of assessment**				
	17.1.	**Tests / oral exams**		70 points	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points	
	17.3.	**Activity and participation**		20 points	
18.	**Assessment Criteria (points / score)**	**up 50 points**	5	(five)	(F)
		51 to 60 points	6	(six)	(E)
		61 to 70 points	7	(seven)	(D)
		71 to 80 points	8	(eight)	(C)
		81 to 90 points	9	(nine)	(B)
		91 to 100 points	10	(ten)	(A)
19.	**Signature requirement and passing the final exam**	60% success from all activities before exam i.e. 42 points from two mid-term exams, seminar paper, attendance of lectures and exercises			
20.	**Language of teaching / study**	Macedonian			
21.	**Method of monitoring the quality of teaching**	Self-evaluation			

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**

		1.	M. Delipetrev B. Doneva	Physics 2	UGD	2013
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Z. Stojanov	General physics, book 2	UKIM	1985
		2.				
		3.				

Annex No.3	**Program of the course–first cycle studies**				
1.	**Title of the Course**	**Electrotechnics and Electronics**			
2.	**Code**	2ET110012			
3.	**Study program**	Production Engineering / Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev" - Stip Faculty of Mechanical Engineering-Vinica			
5.	**Cycle (first, second, or third study cycle)**	1st cycle			
6.	**Academic year / semester**	1st / 1st	7.	Number of EKTS credits	4
8.	**Professor (s)**	Roman Golubovski, Assistant Professor			
9.	**Requirements for enrollment of the course**	enrolled 1st semester			
10.	**Purposes of the curriculum (competencies):** Introduction to basic principles of electrotechnics and electronics.				
11.	**Contents of the course program:** 1. Electric Current - Intensity, Current Field, Density 2. Electric Voltage and Potential 3. Basic Laws - Joul's, Ohm's, I & II Kirchhoff's 4. Magnetic Flux, Magnetic Field andMagnetism 5. Magnetic Induction, Ampere's Law and Magnetic Circuit 6. Electrical Measurements 7. Semiconductors 8. Diodes				

	9. BJT Transistors 10. MOSFET Transistors 11. Thyristors 12. Operational Amplifiers			
12.	**Learning methods:** Lectures, numerical exercises, individual and team projects, homework.			
13.	**Total available time**		120	
14.	**Distribution of available time**		2+1+1	
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of studying activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		Up 50 points	5 (five) (F)
			51 to 60 points	6 (six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		Order No.	**Author**	**Title**	**Publisher**	**Year**
		1.	M. Popnikolova-Radevska	Electrotechnics	TF, Bitola	2004

		2.	M. Kamilovski	Electronics 1	UKIM, Skopje	2005
	22.2	**Additional Literature**				
		Order No.	**Author**	**Title**	**Publisher**	**Year**
		1.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Casting technology**			
2.	**Code**	2MF101812			
3.	**Study Program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip, Faculty of Mechanical Engineering- Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First / I semester	**7.**	**Number of credits**	4
8.	**Professor (s)**	Slavco Cvetkov, PhD, Assi.Professor			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** At the end of the course, students will have competences obtained through the necessary fund of theoretical, methodological and applicative studying in the area of casting technology.				
11.	**Content of the course program:** 1. Introduction to the casting 2. Casting materials 3. Casting metalurgy 4. Sand casting 5. Centrifugal casting 6. Precise casting 7. Vacuum casting 8. Casting under pressure 9. Heaters for melting 10. Tools for casting 11. Construction tools for casting				

	12. Defects in casting			
12.	**Learning methods:** – Teaching, exercises, projects assignment			
13.	**Total available time**		120	
14.	**Distribution of available time**		2 + 1 + 1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	/ hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	/ hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points
18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams , seminar attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Zoran Anisic	Production technologies	Visa Tehnicka Skola	2003
		2.				

		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Mathematics II**			
2.	**Code**	2FI100412			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First/II	**7.**	**Number of credits**	8
8.	**Professor (s)**	Prof. Martin Lukarevski PhD / Prof. Jordan ZivanovikPhD			
9.	**Requirements for enrollment the Course**	Enrollment of the first cycle study program			
10.	**Purposes of the curriculum (competencies):** Knowledge and understanding of the basic mathematical concepts and theories, knowledge of ICT in mathematics, flexible use of knowledge in practice.				
11.	**Content of the course program:** 1. **The concept of Integral Calculus:** Indefinite integral – integration by substitution and integration by parts, fundamental integration formulas, Definite integral-concept, properties and applications. 2. **Infinite series:** Criteria for convergence, alternating series, Conditional and absolute convergence. Sequences and series of functions. Power series. Circle of convergence. 3. **Multivariate Calculus:** definition, properties and graphics of functions with several variables; Partial derivatives; Maximum and minimum values; The total differential. 4. **Multiple integrals.** 5. **Introduction of differential equations:** Terminology and notation; A first-order differential equation for the exponential function; First-order linear differential equations and other types of first-order differential equations.				

12.	**Learning methods:** – Lectures, – e-learning, – individual and team projects – Consultations.			
13.	**Total available time**		216	
14.	**Distribution of available time**		3+2+2 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Glyn James	Modern engineering mathematics	Translation of the	2009

					Government of R.Macedonia	
		2.	Milan Merkle	Matematicka analiza	Racunarski Fakultet - Beograd	2007
		3.	Tatjana Atanasova Pacemska	Matematika 2	Avtorizirani predavanja	2011
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Nikita Sekutkovski	Matematicka analiza 1	Prosvetno delo - Skopje	2008
		2.	Boro Piperevski	Matematika 2	FEIT - Skopje	2008
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Engineering graphics**			
2.	**Code**	2FP100912			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip Faculty of Mechanical Engineering - Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First / second semester	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assi. Prof. Slavco Cvetkov, Ph.D.			
9.	**Requirements for enrollment the Course**	None			
10.	**Purposes of the curriculum (competencies):** Training in drawing and reading technical drawings of machine parts. Training in drawing machine parts in the program package Auto CAD.				
11.	**Content of the course program:** Technical drawing. Views - basic, special and abbreviated views. Standards. Formats, naming and sizes of technical drawings. Types of lines and their application. Technical Letter. Sections and types of intersections. Marking and hatching at intersections. Labeling and types of quotation. Longitudinal tolerances.The shape and position tolerance. Designation of the quality of surface processing. To put position on machined parts. Listing of the thread. Modeling of parts. Workshop drawing. Formation of the mechanical drawing workshop part given the spatial layout and the orthogonal view. Formation of the mechanical drawing workshop part of assembled drawing. Technical Documentation				

12.	**Learning methods:** Lectures, exercises, individual works, home learning, consultations.			
13.	**Total available time**		156 hours	
14.	**Distribution of available time**		2+2+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2 hours
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2 hours
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	up 50 points	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Risto Taškovski	Engineering Graphics	Mechanical faculty, Skopje	2008
		2.				
		3.				
	22.2.	**Additional literature**				

		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	Program of the Course - first cycle studies				
1.	**Title of the Course**	**Technical Mechanics I (statics)**			
2.	**Code**	2MF100212			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip. Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First / second	7.	**Number of credits**	6
8.	**Professor (s)**	Assi. Prof. Slavco Cvetkov, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):**Students are introduced to statics: forces, moments, carriers, equilibrium of bodies, friction, centre of gravity;				
11.	**Content of the course program:** 1.System of forces acting in the plane, composition and decomposition of forces acting at a point; 2.Momentof force about a point, Varignon's theorem; 3.System of forces attacking panel und various counts; 4. Graphic alignment of forces, equilibrium of forces; 5. Planar carriers, transverse and axial forces; 6.Simple beam loaded with concentrated forces; 7.Simple beam loaded with a continuous load, coupling forces; Console; 8.Beam with overhangs; Gerber carrier-beam; 9. Statically determined framework supports; Lattice girders; 10.Statics in space; Spatial carriers; 11.Sliding friction, rolling friction, friction of the rope; 12.Centre of gravity line, surface and body; Guldin's theorems;				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	156 hours			
14.	**Distribution of available time**	2 +2 +1/ per week			
15.	**Forms of teaching / learning activities**	15.1.	lectures / theoretical - contact teaching, e-teaching	2hours	
		15.2.	theoretical and practical exercises, e-exams, preparation of independent seminar work	2hours	

16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1 hour
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10
	17.3.	**Activity and participation**	20

18.	**Assessment Criteria (points / score)**	to 50 points	5(five) (F)
		from 51 to 60 points	6(six) (E)
		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

Required literature

No.	Author	Title	Publisher	Year
1.	Simeon Simeonov	Technical mechanics 1(peer reviewed script)	UGD-Stip	2012
2.	Z.Petrevski, V. Gavrilovski, M. Mickovski	Tasks from Statics	Mechanical faculty Skopje	2008
3.	R.Josifova	Technical mechanics 1	Principal - Skopje	1981

Additional literature

No.	Author	Title	Publisher	Year
1.	B. Andonovic	Technical mechanics 1	Technical Faculty- Bitola	2006

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**English language 1**
2.	**Code**	UGD100112
3.	**Study Program**	Production engineering/Transport, organization and logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	Goce Delcev University Faculty of mechanical engineering

5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	2012/13	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assistant Prof. Biljana Ivanovska PhD, Prof. Tole Belcev PhD, Senior Lector M.A. Snezana Kirova			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** -enabling oral communication in everyday situations and expressing of your own attitudes and opinions; -understanding speech of different speakers and longer oral expressions and information; -identifying general and particular information in longer texts; -enabling written expression (compositions, letters, reports and other forms of academic writing); -vocabulary improvement; -mastering different grammar forms and structures; - ability for receptive and productive use of the English language in oral and written context; -ability for understanding and proper application of grammar forms and structures (articles, tenses, reported speech, passive voice, conditional sentences, relative sentences, modal verbs, infinitive/gerund, idioms, phrasal verbs, prepositions, word-formation, comparison of adjectives etc.)				
11.	**Content of the course program:** - grammar: articles, countable/uncountable nouns, present tenses, word-formation, adjectives, reported speech, comparison of adjectives, adverbs; -vocabulary: methods of communication, expressing feelings and emotions, description of working skills, types of money, types of houses, electrical appliances, furniture, description of physical appearance and character, lifestyles, phrasal verbs, prepositions; -reading: different texts with exercises (multiple choice questions, gapped texts, matching headings with the paragraph); -listening: speech of different speakers and longer oral expressions and information with exercises (multiple choice questions, taking notes, completing sentences); -speaking: comparison, giving proposals, expressing feelings, expressing opinions, agreeing/disagreeing, requesting and giving explanation, expressing wishes, complaining; - writing: reports, letters, essays.				
12.	**Learning methods:** Seminars, interactive method: team work, essays, homework, seminar paper, discussion, debate, cooperative learning techniques, individual work, simulation of extra-curricular teaching and educating activities, individual learning.				
13.	**Total available time**	156			
14.	**Distribution of available time**	0 + 0 + 4 / per week			

15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	0
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	0
16.	**Other forms of activities**	**16.1.**	**Project tasks**	2 hours
		16.2.	**Individual tasks**	2 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		up 50 points	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% achievement on the written exam	
20.	**Language of teaching / study**		English language	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Virginia Evans and Jenny Dooley	Upstream -Intermediate	Express Publishing	2002
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Oxford Practice Grammar	John Eastwood	OUP	2009
		2.	Practical English Usage	Michael Swan	OUP	2005
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**The modern mechanical materials**			
2.	**Code**	2MF101912			
3.	**Study Program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip, Faculty of Mechanical Engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First/I semester	**7.**	**Number of credits**	4
8.	**Professor (s)**	Slavco Cvetkov, PhD, Assi. Professor			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** At the end of the course, students will have competences obtained through the necessary fund of theoretical, methodological and applicative studying in the area of the mechanical materials.				
11.	**Content of the course program:** 1. Introduction to the newest materials 2. The modern engineering materials 3. Composites 4. Introduction to fullerenes 5. Biomaterials an d their usage 6. Polymers 7. Smart materials 8. Cellular materials 9. Nanomaterials 10. Ceramics 11. Wood, paper and glues 12. The procedure of material selection				
12.	**Learning methods:** - Teaching, exercises, projects assignment				
13.	**Total available time**	120			
14.	**Distribution of available time**	2 + 1 + 1 / per week			

15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1 hour
		16.3.	**Home learning**	

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		up 50 points	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams, seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Angel Tasevski, PhD; Vladan Andonovic, MsC	The modern mechanical materials	UGD - Stip	2011
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	Program of the Course - first cycle studies

1.	**Title of the Course**	**Engineering logistics**			
2.	**Code**	2MF106712			
3.	**Study Program**	Production engineering/Transport, organization and logistics			
4.	**Organizer of the study program(unit orinstitute, Faculty, department)**	Goce Delcev University Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle studies (Bachelor studies)			
6.	**Academic year / semester**	First/Second semester	7.	ECTS	4
8.	**Professor (s)**	Prof. Zoran Despodov, PhD			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes ofthe curriculum(competencies):** Familiarize students with the fundamentals of Engineering logistics, practical application and ways of making a better use of the resources				
11.	**Content ofthecourse program:** 1.Introduction to logistics. 2. Logistics systems in industrial enterprises. 3. Engineering Logistics and organization of production. 4. Supply of materials. 5. Storage for materials. 6. Inter operational transport. 7. Packaging and storage. 8. Means of transport in the system of engineering logistics. 9. Transportation problems. 10. Information systems and the activities of the logistic system.				

	11. Logistics support of the flexible manufacturing. 12. Distribution of the final products.			
12.	**Learning methods:** -Theory, practical teaching and auditory exercises			
13.	**Total availabletime**		120	
14.	**Distribution of availabletime**		2+1+1	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical andpractical exercises, e-exams, preparationofindependentseminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper/project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria(points /score)**	up 50points	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirementandpassingthefinal exam**	60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams, seminar paper, attendance of lectures and exercises	
20.	**Language ofteaching / study**	Macedonian	
21.	**Method ofmonitoringthe quality of teaching**	Self-evaluation	

22.	Literature					
	22.1.	Required literature				
		No.	Author	Title	Publisher	Year
		1.	T. Pantelic	Industrial logistics	ICIM, Krusevac	2001
		2.	V. Jocik	Technical logistics	Nis	2001
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	Program of the Course - first cycle studies				
1.	Title of the Course	Thermodynamics			
2.	Code	2MF100312			
3.	Study Program	Production engineering / Transport, organization and logistics			
4.	Organizer of the study program (unit or institute, Faculty, department)	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	Cycle (first, second and third cycle)	first cycle			
6.	Academic year / semester	2/III	7.	Number of credits	8
8.	Professor (s)	Assistant Prof. Radomir Cvetanovski, PhD			
9.	Requirements for enrollment the Course	non			
10.	**Purposes of the curriculum (competencies):** Introducing the values of condition and their changes, the basic gas laws, equation of condition of ideal gases, internal energy, entropy, heat diagram; humid air				
11.	**Content of the course program:** 1. Introductory terms and values of condition; Basic gas laws; Concept of ideal gas and equation of condition of an ideal gas; The main laws of thermodynamics; Specific heat capacity; Changes of condition of ideal gases; 2. Circular process; Recoverable and irreversible processes; Entropy; Double phased fixtures; Real gases; Humid air;				
12.	**Learning methods:** Lectures with presentations through slides, exercises, independent preparation and presentation of the project assignment				
13.	Total available time	216			
14.	Distribution of available time	3+2+2 / per week			

15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% from pre-exam activities or 42 points from the two tests, seminar papers, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Atanas Blazevski	Termodinamika I	UKIM,	1994
		2.	Atanas Blazevski	Zbirka reseni zadaci po Termodinamika I	UKIM	1996
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	NedjeljkaPetric, Ivo Vojnović, VanjaMartinac	Tehnicka Termodinamika	Kemisko-tehnoloskiFakultet - Split	2007
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**					
1.	**Title of the Course**	**Strength of materials**				
2.	**Code**	2MF100412				
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics				
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip. Faculty of Mechanical Engineering -Vinica				
5.	**Cycle (first, second and third cycle)**	First cycle				
6.	**Academic year / semester**	second / third	7.	Number of credits	8	
8.	**Professor (s)**	Assi. Prof. Simeon Simeonov, Ph.D				
9.	**Requirements for enrollment the Course**	Attended course of technical mechanics 1				
10.	**Purposes of the curriculum (competencies):** Students are introduced to the moments of inertia, the types of stresses, dimensioning					
11.	**Content of the course program:** Geometric features of planar sections: static moment, the moment of inertia, Steiner's theorem; Tensile and compressive: axial stresses, dependence of the stress on the deformation -Hooke's law. Plane stress condition; Shear and torsion; Bending: pure bending, bending from forces, strength calculation, uniform strength, major stresses at the bent beam; Elastic deformations at linear carriers; Statically indeterminate frameworks and carriers ; Buckling: Euler and Tetmayer methods ; Complex stresses: hypotheses of strength ,obliquely bending; Complex stresses of tensile (compressive) and torsion , Complex stresses of tensile (compressive) and bending, Complex stresses of bending and torsion ; Cylinder with a thick wall, Tank with thin wall; Strength of the material under dynamic load effect.					
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.					
13.	**Total available time**	216 hours				
14.	**Distribution of available time**	3 +2 +2/ per week				
15.	**Forms of teaching / learning activities**	15.1.	lectures / theoretical - contact teaching, e-teaching	3 hours		
		15.2.	theoretical and practical exercises, e-exams, preparation of independent seminar work	2hours		
16.	**Other forms of activities**	16.1.	**Project tasks**	1hour		
		16.2.	**Individual tasks**	1 hour		
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**	70			
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10			
	17.3.	**Activity and participation**	20			

18.	**Assessment Criteria (points / score)**	to 50 points	5(five)(F)
		from 51 to 60 points	6(six) (E)
		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

Required literature

No.	Author	Title	Publisher	Year
1.	Simeon Simeonov	Strength of material (script)	UGD-Stip	2011
2.	A.Ilievski, Lj.Todorovska-Azievska, N.Babamov	Strength of material	Dgitprint - Skopje	2008
3.	Lj.Trajkovska	Strength of material1	UKIM -Skopje	1993

22.1.

Additional literature

No.	Author	Title	Publisher	Year
1.	Lj.Trajkovska	Strength of material1 Collection tasks ,	UKIM -Skopje	1993 1993
2.	K.Angjusev, D.Korunovski, Z.Petreski,G.Tasevski	Strength of material1 Collection tasks ,	Mechanical faculty Skopje	2008 2008
3.				

22.2.

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Technical Mechanics 2(kinematics, dynamics, oscillations)**			
2.	**Code**	2MF100612			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip. Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Second/ third	7.	Number of credits	6
8.	**Professor (s)**	Assi. Prof. Simeon Simeonov, Ph.D			

9.	**Requirements for enrollment the Course**	No		
10.	**Purposes of the curriculum (competencies):** Students are introduced to the movement of bodies, kinematics, dynamics and oscillations			
11.	**Content of the course program:** 1.Introduction to kinematics, motion particle, velocity, acceleration; 2.Types of motion: rectilinear, harmonic, circle, oblique angle shot; 3.Kinematics of a rigid body, translational motion, rotational motion and plane motion; 4.Composed motion of a rigid body, compositon of translations, composition of rotations, composition of translation and rotation of a rigid body; 5. Introduction to dynamics, dynamics of particle, differentiatial equation of motion, types of motion; 6.Laws of mechanics, impulse and work of force, amount of motion, kinetic energy, potential energy…. ; 7.Dynamics of material systems, principles of mechanics: Lagrange-D'Alembert principle; 8.Moments of inertia of a body, 9.Rigid body dynamics, translation motion, rotation motion, plane motion; 10.Oscillations general, free oscillations, Free damped (with resistance) oscillations , resistance of oscillations is proportional to the first degree of speed, force is constant; 11. Forced oscillations without resistance ,forced oscillations with resistance (damped); 12. Application of oscillations in a technique.			
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.			
13.	**Total available time**		156 hours	
14.	**Distribution of available time**		2 +2 +1/ per week	
15.	**Forms of teaching / learning activities**	15.1.	lectures / theoretical - contact teaching, e-teaching	2 hours
		15.2.	theoretical and practical exercises, e-exams, preparation of independent seminar work	2hours
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1 hour
		16.3.	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10
	17.3.	**Activity and participation**		20
18.	**Assessment Criteria (points / score)**		to 50 points	5(five)(F)
			from 51 to 60 points	6(six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)

			from 91 to 100 points	10 (ten) (A)	
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions		
20.	**Language of teaching / study**		Macedonian		
21.	**Method of monitoring the quality of teaching**		Self-evaluation		
22.	**Literature**				
	22.1.	**Required literature**			
		No.	Author	Title	Publisher	Year
		1.	S.Simeonov Z.Sovreski	Technical mechanics 1(peer reviewed script)	UGD-Stip	2011
		2.	E,Vetijakoska	Kinematics, dynamics, oscillations	Mechanical faculty-Skopje	2008
		3.	E,Vetijakoska	Kinematics	Mechanical faculty-Skopje	2009
	22.2.	**Additional literature**			
		No.	Author	Title	Publisher	Year

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Corrosion and corrosion protection**			
2.	**Code**	2MF102112			
3.	**Study Program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip, Faculty of Mechanical Engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Second/IIIsemester	**7.**	**Number of credits**	4
8.	**Professor (s)**	Assi. Professor Slavco Cvetkov, PhD			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** At the end of the course, students will have competences obtained through the necessary fund of theoretical, methodological and applicative studying in the area of the materials corrosion and protection.				
11.	**Content of the course program:** 1. Introduction to the corrosion 2. Corrosion in water solutions 3. Pitting corrosion 4. Contact corrosion				

	5. Corrosion under mechanical factors 6. Procedures for metals protection 7. Protection with electrode potential 8. Anode protection 9. Protection with surface coating 10. Electrochemical procedures for metals protection 11. Coating metals protection 12. Constructive methods for metals protection			
12.	**Learning methods:** -Teaching, exercises, projects assignment			
13.	**Total available time**		120	
14.	**Distribution of available time**		2 + 1 + 1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1 hour
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	

21.	**Method of monitoring the quality of teaching**	Self-evaluation

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	H.J. Svetomir	Corrosion and protection	Skopje - TMF	1989
		2.	M. Milenkovic	Corrosion and protection	Belgrade	1966
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Probability and statistics**			
2.	**Code**	2FI130712			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Second/IV	**7.**	**Number of credits**	4
8.	**Professor (s)**	Prof. Tatjana Atanasova Pacemska, Ph.D			
9.	**Requirements for enrollment the Course**	Enrollment of the first cycle study program			
10.	**Purposes of the curriculum (competencies):** Knowledge and understanding of the basic concepts and theories of probability and statistics and their flexible use in practice.				
11.	**Content of the course program:** Basic concepts of the probability theory. Random Experiment. Random event. Probability space. The axioms of probability. Classical definition of probability. Geometric definition of probability. Conditional probability. Total probability. Bayes' theorems or rule. Bernoulli' scheme. Approximate theorems of the Bernoulli' scheme. Discrete and continuous random variables. Random vectors. Definition of the mathematical expectation, variance and standard deviation. Functions of random				

	variables. Law of large numbers. Chebyshev' Inequality. Central limit theorem. Descriptive statistics. Confidence intervals. Tests of hypothesis.			
12.	**Learning methods:** – Lectures, – e-learning, – individual and team projects – Consultations.			
13.	**Total available time**		120	
14.	**Distribution of available time**		2+1+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	Other forms of activities	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending oflectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**

		1.	Risto Malceski	Voved vo teorijata na verojatnosta	FON	2006
		2.	Željko Pauše	Uvod u matematičku statistiku	Školska knjiga, Zagreb	1993
		3.	Nikola Tuneski, Biljana Jolevska-Tuneska	Zbirka reseni zadaci po Verojatnost i statistika	Masinski Fakultet - Skopje	2011
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first/second/third cyclestudies**				
1.	**Title of the Course**	**Ergonomics**			
2.	**Code**	2MF106812			
3.	**Study Program**	Production engineering/Transport, organization and logistics			
4.	**Organizer of the study program(unit orinstitute, Faculty, department)**	Goce Delcev University -Stip, Faculty of Mechanical Engineering Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle studies (Bachelor studies)			
6.	**Academic year / semester**	Second /third semester	7.	ECTS	4
8.	**Professor (s)**	Assi. Prof. Dejan Mirakovski, PhD			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes ofthe curriculum(competencies):** Introduction to ergonomics and its principles, ergonomic design of the workspace, work place, characteristics of the work place and organization.				
11.	**Content ofthecourse program:**				

	1.Introduction to ergonomics, 2. Anthropometric aspect of the man-machine system, 3. Ergonomic principles, 4. Ergonomics as a field for quality improvement, 5. Ergonomic design of the workspace in modern offices, 6. Ambient perception, 7. Impact of lighting in working conditions, 8. Presentation of visual information, 9. Workplace and its organization, 10. Design for special groups of people, 11. Human errors, accidents and safety at work, 12. Rhythm of the body, working ability and effects of the alcohol.			
12.	**Learning methods:** – Lectures, exercises, individual tasks			
13.	**Total availabletime**		120	
14.	**Distribution of availabletime**		2+1+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical andpractical exercises, e-exams, preparationofindependentseminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper/project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria(points /score)**	**up 50points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)

		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirementandpassingthefinal exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language ofteaching / study**	Macedonian	
21.	**Method ofmonitoringthe quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Prof. R. Polenakovik	"Ergonomics" (customized lectures)	UKIM, Faculty of Mechanical Engineering, Skopje	2007
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Industrial Management**
2.	**Code**	2MF106912
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica
5.	**Cycle (first, second and third cycle)**	First cycle

6.	**Academic year / semester**	Second/Third semester	7.	Number of ECTS credits	4
8.	**Professor (s)**	Assi. Prof. Misko Dzidrov, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes ofthe curriculum(competencies):**Learning of managerial functions: planning, organizing and staffing, leadership, controlling.				
11.	**Contents of the course program:** 1. Introduction to Management 2. Problem solving and decision making 3. Information and information systems 4. Fundamentals of organizational communication 5. Organizational communication - flows, networks and types 6. Management by objectives and managerial function of planning 7. Managerial function of organizing: division and grouping of work 8. Managerial function of organization: coordination, management range and organizational design 9. Organizational conflicts 10. Staffing and Motivating 11. Styles of leadership and types of managers 12. Systems and processes in controlling				
12.	**Learning methods:** Interactive teaching, exercises, individual and/or team work on projects, consultations and individual-study.				
13.	**Total availabletime**	120 hours			
14.	**Distribution of availabletime**	2 +1 +1			
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical andpractical exercises, e-exams, preparationofindependentseminar work**	1	
16.	**Other forms of activities**	16.1.	**Project tasks**		
		16.2.	**Individual tasks**	1	
		16.3.	**Home learning**		

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper/project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria(points /score)**	**up 50points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirementandpassingthefinal exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language ofteaching / study**	Macedonian	
21.	**Method ofmonitoringthe quality of teaching**	Self-evaluation	

22.	Literature					
	22.1.	Required literature				
		Order No.	Author	Title	Publisher	Year
		1.	T. Kralev	Management Principles Part 1	CIM	2001
		2.				
		3.				
	22.2.	Additional literature				
		Order No.	Author	Title	Publisher	Year
		1.	T. Kralev	Management Principles Part 1	CIM	2005
		2.	T. Kralev	Management Principles Handbook	CIM	2005
		3.	V. Bulat	Industrial Management	Faculty for Industrial Management - Kruševac	2007

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**Machine elements**
2.	**Code**	2MF100712

3.	**Study Program**		Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**		University “Goce Delcev”- Stip. Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**		First cycle			
6.	**Academic year / semester**		second / fourth	7.	Number of credits	8
8.	**Professor (s)**		Assi. Prof. Simeon Simeonov Ph.D			
9.	**Requirements for enrollment the Course**		Attended course of Strength of material			
10.	**Purposes of the curriculum (competencies):** Students are introduced to the properties of machine elements, their dimensioning and constructing;					
11.	**Content of the course program:** Elements for joining. Separable threaded fasteners, types, threaded transmitters, threaded fasteners, material, calculation; Wedges, serrated joints, pins. Inseparable fasteners (rivets, welded connections); Springs, flexible springs, spirally screw springs, construction and calculation; Bearing, ball bearing (rolling bearings), sleeve bearing (slide bearings), construction and calculation; Clutches, constantly engaged, engaged-disengaged manageable clutches, automatic clutches. Installation of pipes; Gears, cylindrical gears, construction and calculation. Conical gears , construction and calculation; Worm and gear sets; Belts transmitters; Friction transmitters; Chains.					
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.					
13.	**Total available time**		216 hours			
14.	**Distribution of available time**		3 +2 +2/ per week			
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**		3 hours	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**		2hours	
16.	**Other forms of activities**	16.1.	**Project tasks**		1hour	
		16.2.	**Individual tasks**		1 hour	
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**			70	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**			10	
	17.3.	**Activity and participation**			20	
18.	**Assessment Criteria (points / score)**		to 50 points		5(five)(F)	
			from 51 to 60 points		6(six) (E)	
			from 61 to 70 points		7 (seven) (D)	

			from 71 to 80 points	8 (eight) (C)	
			from 81 to 90 points	9 (nine) (B)	
			from 91 to 100 points	10 (ten) (A)	
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions		
20.	**Language of teaching / study**		Macedonian		
21.	**Method of monitoring the quality of teaching**		Self-evaluation		
22.	**Literature**				
	22.1.	**Required literature**			
		No.	Author	Title	Publisher	Year
		1.	Simeon Simeonov	Strength of material (script)	UGD-Stip	2011
		2.	D.Stamboliev	Machine elements ,1,2	UKIM Skopje	1975
		3.	K.Trimcevski	Machine elements	Mechanical faculty - Skopje	
	22.2.	**Additional literature**				
		No.	Author	Title	Publisher	Year
		1.	M. Ognjanovik	Mechanical elements	Mechanical faculty - Beograd	2008
		2.	S.Simeonov	Mechanical elements-collection tasks	UGD -Stip	2011
		3.				

		1.	M. Ognjanovik	Mechanical elements	Mechanical faculty - Beograd	2008
		2.	S.Simeonov	Mechanical elements-collection tasks	UGD -Stip	2011
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Fluid Mechanics**
2.	**Code**	2MF100812
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica

5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	II/IV semester	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assi. Prof. Radomir Cvetanoski, Ph.D			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Introducing students to the mechanics of fluids, and training for calculations and practical application of the laws of fluid mechanic				
11.	**Content of the course program:** Tasks and application of fluid mechanics; most important thermodynamic and physical properties of gases; most important thermodynamic and physical properties of liquids; Statics of fluids; Kinematics flow; ideal fluid dynamics; Some elementary flows ideal fluid through electrical flow; two-dimensional potential flow; convection viscous fluid; Methods of application of fluid mechanics (hydraulics); laminar flow through circular pipes; Hydraulic shock.				
12.	**Learning methods:** Theoretical lectures, auditory exercises, lectures with presentations through slides, exercises, independent elaboration and defense of the project task				
13.	**Total available time**	156 hours			
14.	**Distribution of available time**	2+2+1 / per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	
16.	**Other forms of activities**	**16.1.**	**Project tasks**	hours	
		16.2.	**Individual tasks**	1 hours	
		16.3.	**Home learning**	hours	
17.	**Method of assessment**				
	17.1.	**Tests / oral exams**		70 points	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points	
	17.3.	**Activity and participation**		20 points	
18.	**Assessment Criteria (points / score)**	**up 50 points**		5(five) (F)	
		51 to 60 points		6(six) (E)	
		61 to 70 points		7 (seven) (D)	
		71 to 80 points		8 (eight) (C)	
		81 to 90 points		9 (nine) (B)	

		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities i.e. 42 points from two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Ass. Prof. Ph.D Radomir Cvetanoski	Fluid Mechanics	**UGD**	**2009**
		2.	Frank White	Fluid Mechanics	Ars Lamina Skopje	2009
		3.	Ilija Mijakovski	Fluid Mechanics-collection solution tasks	Technical Faculty - Bitola	1994
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Numerical methods**			
2.	**Code**	2FP101512			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip Faculty of Mechanical engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Second/Fourth	7.	Number of credits	6
8.	**Professor (s)**	Prof. Blagoj Golomeov, Ph.D.			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** Students are introduced to the basics of numerical mathematics.				
11.	**Content of the course program: Introduction**. Basic concepts of error estimation. Approximately solving equations with one unknown. Method of halving. Newton-				

	Rafson method. Secant method. Interpolation. Polynomial interpolation. Lagrange formula. Newton interpolation's formula back and forth. Two-dimensional interpolation. Numerical differentiation, Newton interpolation. Numerical integration. Newton IP. Trapeze and Simpson's rule. Gaussian elimination, Jakob and Gauss Zajdelov method. Numerical solution of ordinary differential equations. Taylor series methods. Euler method. Higher-order methods. Runge-Kuta method. Polynomial regression. Method of least squares. Techniques for network planning. Project, activity, event. Presentation of addicted activities. Fulker rule. PERT method- time analysis. Method CPM-critical path.			
12.	**Learning methods:** Lectures, e-learning, individual and team projects, consultations.			
13.	**Total available time**		156	
14.	**Distribution of available time**		2+2+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-examactivities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**	
	22.1.	**Required literature**

		No.	Author	Title	Publisher	Year
		1.	Blagoj Golomeov	Numerical methods in mining and geology	Faculty of Natural and Technical Sciences	2009
		2.				
		3.				

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Virginia Evans and Jenny Dooley	Upstream -Intermediate	Express Publishing	2002
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Oxford Practice Grammar	John Eastwood	OUP	2009
		2.	Practical English Usage	Michael Swan	OUP	2005
		3.				

Annex No.3	**Program of the Course - first/second/ third cycle studies**				
1.	**Title of the Course**	**Measurement and measuring instruments**			
2.	**Code**	2MF102212			
3.	**Study Program:**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cucle (first, second, third cycle)**	First cycle			
6.	**Academic year / semester**	Second / fourth semester	7.	Number of ECTS credits	4
8.	**Professor (s)**	Assi. Prof. Bratica Temelkoska, Ph.D			
9.	**Requirements for enrolment the Course**	No			
10.	**Purposes of the curriculum (competencies):**Students are introduced to the types of measuring instruments and their application.				
11.	**Content of the course program:** Basic and general terms in metrology; Measurement and measurement concept, defined in terms of metrology; Measuring instruments; caliper rule and micrometers; comparators; yardsticks for measuring angles and cones; Methods for measurement				

	and control coils; measuring machines; Measuring instruments based on optical measurements; pressure measurement. Temperature measurement; Instruments for measuring flow; Measuring force. Instruments for measuring deformations.			
12.	**Learning methods;** Theoretical lectures, laboratory exercises			
13.	**Total available time**		120 hours	
14.	**Distribution of the available time**		2+1+1	
15.	**Forms of teaching/ Learning activities**	15.1	**Lectures - theoretical contact teaching/e-teaching**	2
		15.2	**Theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1	**Projects tasks**	
		16.2	**Individual tasks**	1
		16.3	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams,**		**70 points**
	17.2.	**Seminars (paper /project - presentation ; written and /or oral**		**10 points**
	17.3.	**Activity and participacion**		**20 points**
18.	**Assessment Criteria (points / score)**		**to 50 points**	5(five) (F)
			from 51 to 60 points	6(six) (E)
			from 61 to 70 points	7(seven) (D)
			from 71 to 80 points	8(eight) (C)
			from 81 to 90 points	9(nine) (B)
			from 91 to 100 points	10(ten) (A)
19.	**Signature requirement and passing tne final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching/study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
		Required literature				
		Order No.	**Author**	**Title**	**Publisher**	**Year**
	22.1	1.	Bratica Temelkoska	Measurement and measuring instruments-textbook	University “Goce Delcev”- Stip. Faculty of Mechanical	2009

					Engineering - Vinica	
		2.				
		3.				
	22.2	**Additional literature**				
		Order No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Heat transfer**			
2.	**Code**	MF102312			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	first cycle			
6.	**Academic year / semester**	II/IV semester	**7.**	**Number of credits**	4
8.	**Professor (s)**	Assi. Prof. Radomir Cvetanoski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** Introduction to basic concepts of heat and temperature, the basic types of heat transfer, conduction, convection and radiation, heat transfer devices, Heat and types of Heat, efficiency and design.				
11.	**Content of the course program:** 1.Temperature and heat; Transmission of heat; conduction heat transfer; Convective heat tranfer; Radiation heat transfer; Heat; 2. Efficiency of heat exchangers; Classification of heat exchangers; Tubular heat exchangers; Plate heat echangers; Regenerativeheat exchangers; Designing heat exchangers;				

12.	**Learning methods:** Lectures with presentations through slides, exercises, independent elaboration and defense of the project task			
13.	**Total available time**		120 hours	
14.	**Distribution of available time**		2 +1+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities i.e. 42 points from two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	A. Mojsovski	Heat transfer and mass	UKIM	1992
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**

		1.	Schlunder E. U	Heat Exchanger Design Handbook	Hamisphere Publishing Corporation, Washington, USA	1987
		2.	John H. Lienhard	A heat transfer textbook	Philogiston press	2011
		3.				

		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Schlunder E. U	Heat Exchanger Design Handbook	Hamisphere Publishing Corporation, Washington, USA	1987
		2.	John H. Lienhard	A heat transfet textbook	Philogiston press	2011
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	ManagmentInformation Systems			
2.	**Code**	2MF106112			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	1st cycle			
6.	**Academic year / semester**	3rd / 5th	**7.**	**Number of credits**	8
8.	**Professor (s)**	Professor Zoran Panov, PhD			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Introduction to data, information systems and management. Hardware and software maintenance of the production information systems.				
11.	**Content of the course program:** 1. Data, information systems; 2. Management of information systems / subsystems; 3. The structure of information systems (information systems for top management, support systems);				

	4. Helpful tools to support decision making; 5.Hardware and software maintenance of the production information systems; 6. Performance measurement system-PMS and their models; 7. Indicators to be used in a PMS; 8. JIT approach, MRP 1, MRP 2, KanBan system; 9. Production Information systems in an intranet environment; 10. Designing the architecture of the enterprise; 11. Preliminary business model and analysis of current systems and technology; 12. Data architecture, applications, and implementation plan.			
12.	**Learning methods:** Lecturing, exercises			
13.	**Total available time**		216	
14.	**Distribution of available time**		3+2+2/ per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		**up 50 points**	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**	
	22.1.	**Required literature**

		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Prof. Zoran Panov, PhD	Informaciono-upravuvacki sistemi - lectures	UGD, Stip	2008
		2.	M. Stoilovik	Logicna sinteza upravljanja	Masinski fakultet, Nis	2002
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	V.Bulat, Z.Gavric	Proizvodni informacioni sistemi	FIM, Krusevac	2006
		2.	Dz. Nadrljanski	Informacioni sistemi	FIM, Krusevac	2005
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Internal combustion engines**			
2.	**Code**	2MF109112			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	third / fifth	7.	Number of ECTS credits	8
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Content of the course program:** Introduction to basic Thermotechnical machines - steam boilers, thermal turbines, steam turbines, devices heating and air conditioning, refrigeration plants, internal combustionengines				
11.	**Contents of the course program:** Types of energy; energy sources; steam boilers; Heat balance and heat losses; Useful coefficient; construction of steam boilers; Thermal turbines and plants. Basic elements and classification steam turbines plants; Heating and cooling; ventilation plants; Refrigerating plants; Motor cycles in engines internal combustion				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	216 hours			
14.	**Distribution of available time**	3+2+2			

15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	2
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

Required literature

	Order No.	Author	Title	Publisher	Year
22.1.	1.	S. Armenski	Thermotechnical machinery and devices	University "Ss. Cyril and Methodius " Skopje	1995
	2.				
	3.				

Additional literature

	Order No.	Author	Title	Publisher	Year
22.2.	1.	I. Petreski	Steam turbines	University "Ss. Cyril and	2004

					Methodius " Skopje	
		2.	M. Dimitrovski	Engines internal combustion	University "Ss. Cyril and Methodius " Skopje	2001
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Human resource management**			
2.	**Code**	2MF106212			
3.	**Study Program**	Transport, organization and logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev Faculty of mechanical engineering Department of transport, organization and logistics			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third / fifth	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assistant Prof. Nikolinka Doneva, PhD			
9.	**Requirements for enrollment the Course**	no			
10.	**Purposes of the curriculum (competencies):** Acquisition of knowledge about the term human resources, strategies for their development, verification, decision decision, performance evaluation and change management in the organization.				
11.	**Content of the course program:** 1.Human Resources Development for the 21st Century; 2. Devising strategies for human resource development; 3. Introduction of human resource development strategies into practice; 4. Identification of human resources; 5. Decision decision for fair selection; 6. Career development management; 7. Development of motivation and commitment; 8. Building effective teams; 9. Determination and evaluation of performance; 10. Organizational development and change management in the organization.				
12.	**Learning methods:**				
13.	**Total available time**	156			
14.	**Distribution of available time**	2+2+1/ per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	

16.	**Other forms of activities**	**16.1.**	**Project tasks**	Hours
		16.2.	**Individual tasks**	1 Hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Ass. Prof. Radmil Polenakovik, PhD (prepared)	Razvoj na coveskite resursi (for internal use)	Faculty of mechanical engineering, SkopjeUKIM	2003
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**Plants and fuel**
2.	**Code**	2MF109612
3.	**Study Program**	Transport, Organization and Logistics

4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip, Faculty of Mechanical Engineering -Vinica				
5.	**Cycle (first, second and third cycle)**	First cycle				
6.	**Academic year / semester**	Third/ fifth	7.	**Number of ECTS credits**	4	
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D				
9.	**Requirements for enrollment the Course**	No				
10.	**Purposes of the curriculum (competencies):**(Introducing students to classical and no classical plants and fuels, their properties, characteristic and uses)					
11.	**Contents of the course program:**Mobility in the 21st century, Vehicles with classical engines, vehicles with modified internal combustion engines, electric battery vehicles, vehicles with hybrid drives, electric vehicles with fuel cells, obtaining and use of fuels for fuel cells, fuelcell vehicles conceptsof vehicles with alternative plants, steam engine, fuel andcombustion, general terms, fuel division, general characteristics of fuels, combustion of fuels, products of the combustion process – smokeemissions, fuel combustion speeds.					
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.					
13.	**Total available time**	120 hours				
14.	**Distribution of available time**	2+1+1				
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2		
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1		
16.	**Other forms of activities**	16.1.	**Project tasks**			
		16.2.	**Individual tasks**	1		
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**		70 points		
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points		
	17.3.	**Activity and participation**		20 points		
18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)			
		51 to 60 points	6(six) (E)			
		61 to 70 points	7 (seven) (D)			
		71 to 80 points	8 (eight) (C)			
		81 to 90 points	9 (nine) (B)			
		91 to 100 points	10 (ten) (A)			

19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions
20.	**Language of teaching / study**	Macedonian language
21.	**Method of monitoring the quality of teaching**	Self-evaluation

22. **Literature**

Required literature

Order No.	Author	Title	Publisher	Year
1.	R. Pavletic	Combustion: theoretical base, fuel, engineering use - Ljubljana - R. Slovenia	Faculty of Mechanical Engineering - Ljubljana, R. Slovenia	1996
2.	J.Kames	Alternative engine for cars	BEN - Technická literatura - Praha	2004
3.	Zl. Sovreski	Technology Fuel Cells: features and opportunity for application in JGPP in the Republic. Macedonia	University Ss. Clement Ohridski - Bitola	2003

22.1.

Additional literature

Order No.	Author	Title	Publisher	Year
1.	E. L. Keating	Applied combustion – New York [etc.]	Mechanical enginnering, Marcel Dekker	1993
2.	K. Kordesch, G.	K. Kordesch, G.	K. Kordesch, G.	K. Kordesch, G.
3.				

22.2.

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**Basics of thermotechnical machines**
2.	**Code**	2MF102512
3.	**Study Program**	Transport, Organization and Logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica

5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	third/ fifth	7.	**Number of ECTS credits**	6
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):**(Introducing students to basic thermo technic machines, steam boilers, thermal turbines, steam turbines,heating devices and air conditioning, refrigeration plants, Internal combustion engines).				
11.	**Contents of the course program:** 1. Types of energy; energy sources; steam boilers; Thermal balance and heat losses; Useful coefficient; construction of steam boilers; Thermal turbines and plants. 2.Elements and classification of steam turbines plants; Heating and cooling; ventilation plants; Refrigerating plants; Engines cycles at internal combustion engines)				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	120 hours			
14.	**Distribution of available time**	2+1+1			

15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)

19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions		
20.	**Language of teaching / study**		Macedonian language		
21.	**Method of monitoring the quality of teaching**		Self-evaluation		
22.	**Literature**				
	Required literature				
	Order No.	Author	Title	Publisher	Year
22.1.	1.	S. Armenski	Termotehnich machinery and equipment	University "Ss. Cyril and Methodius " Skopje	1995
	2.				
	3.				
	Additional literature				
	Order No.	Author	Title	Publisher	Year
22.2.	1.	I. Petreski	Steam turbines	University "Ss. Cyril and Methodius " Skopje	2004
	2.	M. Dimitrovski	Engines internal combustion	University "Ss. Cyril and Methodius " Skopje	2001
	3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Engineering economics**			
2.	**Code**	2MF107012			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/fifth	7.	**Number of ECTS credits**	4

8.	**Professor (s)**		Assi. Prof. Misko Dzidrov, Ph.D	
9.	**Requirements for enrollment the Course**		No	
10.	**Purposes of the curriculum (competencies):** Learning in the field of engineering economic, the methods and analysis, as well as making investment decisions among project alternatives. Strengthening analytical skills related to financial information.			
11.	**Contents of the course program:** 1. Introduction to the economic methods applied in engineering 2. Decision-making methods 3. Studying of cash flow concepts 4. Rate of return, return of investments, 5. Financial indicators for profitability, effectiveness, efficiency, 6. Cost analysis, revenue, profits, 7. Balance sheet and income statement 8. Studying of basic economic value analysis (present value, annual analysis, incremental analysis, cost/ benefit analysis) 9. Methods for calculating of depreciation 10. Techniques for estimating of equipment replacement 11. Making investment decisions among project alternatives 12. Learning techniques for preparation of a business plan and feasibility study			
12.	**Learning methods:** Interactive teaching, exercises, individual and/or team work on projects, consultations and individual learning			
13.	**Total available time**		120 hours	
14.	**Distribution of available time**		2 +1 +1	
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	
17.	**Method of assessment**			

	17.1.	**Tests / oral exams**		70
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10
	17.3.	**Activity and participation**		20
18.	**Assessment Criteria (points / score)**		to 50 points	5(five)(F)
			from 51 to 60 points	6(six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)
			from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**				
		Required literature			
		Order No.	Author	Title	Publisher	Year
	22.1.	1.	V. Gecevska	Engineering Economics	Faculty of Mechanical Engineering, UKIM, Skopje	2010
		2.	D. Bojadzhioski	Enterprise Economics	Economic Faculty Skopje	1999
		3.				
		Additional literature			
		Order No.	Author	Title	Publisher	Year
	22.2.	1.	Michael R. Baye	Managerial Economics & Business Strategy	McGraw-Hill College	2007
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**City public transport**
2.	**Code**	2MF109712
3.	**Study Program**	Transport, Organization and Logistics

4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/fifth	7.	**Number of ECTS credits**	4
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** (Introducing students to the organization of work in the public urban passenger transport, Acquired competence: ability to organize and to ensure the operation of public passenger transport in urban areas, introducing students to the methodology of planning or preparation of studies for public urban passenger transport. Acquired competence: Ability to approach to the preparation of studies or graduate for public urban passenger transport).				
11.	**Contents of the course program:** Role and importance ofcity public transport today, Types and classification of public city transport. Flexible city public transport, organization of city public passenger transport in today's cities (ownership, regulation, financing), line transport (types and characteristics of lines and networks ofcity public passenger transport). Subsystem of transportation demand. Subsystem of transportationoffer, Indicators of utilization level and work performed on the line of city public passenger transport. Creating timetable, disruption of timetable and measures for removing these disruptions, production volume and productivity indicators, tariff systems and billing systems, Innovative Technologies in city public passenger transport, marketing in city public passenger transport, traffic in today's urban areas, urban Planning and city public passenger transport planning, Methodology forcity public passenger transportplanning, problems, objectives and limitations, analysis of the environmental impacts of traffic, data collection and analysis and evaluation of the condition, Forecast models for transport needs and calibration models, Types and features of city public passenger transport, Innovative technologies in city public passenger transport, Quality of service in city public passenger transport,bill of costs,evaluation and alternative.				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	120 hours			
14.	**Distribution of available time**	2+1+1			
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises,**	1	

			e-exams, preparation of independent seminar work	
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10
	17.3.	**Activity and participation**		20
18.	**Assessment Criteria (points / score)**		to 50 points	5(five)(F)
			from 51 to 60 points	6(six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)
			from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22. **Literature**

22.1. **Required literature**

Order No.	Author	Title	Publisher	Year
1.	V. Vuchic	URBAN TRANSIT: Operations, Planning and Economics,	John Willey & Sons,Inc, USA	2005
2.	Zl.Sovreski	Technology Fuel Cells: features and opportunity for application in JGPP in the Republic. Macedonia	University Ss. Clement Ohridski - Bitola	2003
3.				

22.2. **Additional literature**

Order No.	Author	Title	Publisher	Year
1.	V. Vuchic	URBAN TRANSIT: Operations, Planning and	John Willey & Sons,Inc, USA	2005

				Economics,		
		2.	N. Krstanosvki	Public City Transport	University "Ss. Cyril and Methodius " Skopje	2001
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Theory of movement of motor vehicles**			
2.	**Code**	2MF109212			
3.	**Study Program**	Transport organization and logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica Department of Transport organization and logistics			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/sixth	**7.**	**Number of credits**	8
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, PhD			
9.	**Requirements for enrollment the Course**	/			
10.	**Purposes of the curriculum (competencies):** Introduction to the longitudinal dynamics - performance, and transverse dynamics - stability and handling of motor vehicles.				
11.	**Content of the course program:** 13. Basic terms, types of wheels and rolling, coefficient of rolling resistance, coefficient of adhesion, towing characteristic of the wheel, forces which act on motor vehicles,vehicle weights and surface reactions, resistance, traction power, boundary conditions of movement, differential equation of movement, differential equation with rapidly moving vehicle, units of motor vehicles, external feature of the drive unit, pulling- dynamic properties of vehicles with mechanical and hydraulic transmission gearbox, traction diagram, Dynamic Features, hauling properties of the vehicles, biggest slowdown, minimum braking time, minimum and total braking time, handling and stability of the vehicle, vehicles with rigid wheels, Aerodynamic Stability, Transverse and longitudinal stability characteristics of fuel efficiency, Consumer exploitation, Methods of determination.				
12.	**Learning methods:** lectures, tutorials				

13.	**Total available time**		216	
14.	**Distribution of available time**		3+2+2 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1hours
		16.2.	**Individual tasks**	1hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Д. Данев	Теорија на движењето на моторните возила	Машински факултет Скопје	
		2.	М. Ќосевски	Збирка задачи од теорија на движење на моторните возила	Машински факултет Скопје	
		3.	Драги Данев, М. Ќосевски	Упатство за изработка на влечна пресметка	Машински факултет Скопје	

				на моторните возила		
		Additional literature				
	22.2.	**No.**	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Operations Research**			
2.	**Code**	2MF106312			
3.	**Study Program**	Transport, organization and logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica Department of transport, organization and logistics			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third / sixth	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assi. Prof. Nikolinka Doneva, PhD			
9.	**Requirements for enrollment the Course**	no			
10.	**Purposes of the curriculum (competencies):** Introduction to linear programming and its graphical interpretation, simplex method, a method of solving problems in the field of transport.				
11.	**Content of the course program:** 1.Linear programming; 2. Dual problem; 3. Transportation problem; 4. Network planning techniques; 5.Inventory management; 6. Waiting lines; 7. Random processes, 8. Models waiting lines; Decision tree; 10. Game theory; 11. Multifactor decision. 12. Method of analytic hierarchy process				
12.	**Learning methods:**				
13.	**Total available time**	156 hours			
14.	**Distribution of available time**	2+2+1/ per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	

16.	**Other forms of activities**	**16.1.**	**Project tasks**	Hours
		16.2.	**Individual tasks**	1 Hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	DanijelaTadic PhD, MilijaSuknovic PhD, GordanaRadojevic M.A., VukicaJovanovic	Operacionaistrazivanja	Izdavackicentarzaindustriskimenadzmentplus, Krusevac	2007
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Project Management**			
2.	**Code**	2MF107112			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip. Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/fifth	7.	**Number of ECTS credits**	4
8.	**Professor (s)**	Assi. Prof. Misko Dzidrov, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** Introduction to the practice of good Project Management. Learning how to identify and schedule project resources, understanding project flowcharts. Understanding and producing critical path planning and evaluation reports. Introduction to important issues of staff selection and team management are also covered.				
11.	**Contents of the course program:** 1. What is a project and project management 2. Defining the tasks, defining the roles of the project manager and his team 3. Team work for project teams 4. Defining the project 5. Network planning 6. Estimating the activities 7. Defining calendars and resource availability. 8. Determining critical paths - PERT and GANTT diagrams 9. Preparing a project plan 10. Controlling schedule, budget and scope 11. Management of the project 12. Evaluating and reporting on project performance				
12.	**Learning methods:** Interactive teaching, exercises, individual and/or team work on projects, consultations and self-study.				
13.	**Total available time**	120 hours			
14.	**Distribution of available time**	2 +1 +1			
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching,**	2	

			e-teaching	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
		Required literature				
		Order No.	Author	Title	Publisher	Year
	22.1.	1.	M. R. Djuricic, R. Bojkovic	Project Management	ICIM +	2008
		2.				
		3.				
		Additional literature				
		Order No.	Author	Title	Publisher	Year
	22.2.	1.	V. Donev, R. Polenakovik	Project Management and MS Project	Sistem+	2001
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**					
1.	**Title of the Course**	**Dynamics of motor vehicles**				
2.	**Code**	2MF109912				
3.	**Study Program**	Transport, Organization and Logistics				
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip, Faculty of Mechanical Engineering -Vinica				
5.	**Cycle (first, second and third cycle)**	First cycle				
6.	**Academic year / semester**	3/sixth	7.	**Number of ECTS credits**	4	
8.	**Professor (s)**	Assi. Prof. Elenior Nikolov, PhD				
9.	**Requirements for enrollment the Course**	Internal combustion engines				
10.	**Purposes of the curriculum (competencies):** Introduction to the dynamics of motor vehicles, drive, driving resistance, driving characteristic of vehicles, brake systems, elasticity, comfort and safety criteria, the equations of motion, transfer functions, linear model of vehicle, driving management, tires					
11.	**Contents of the course program:** Vehicle dynamics - definition, drive, Driving resistance, Driving characteristic of the vehicle,Brake systems, Elasticity, Comfort and safety criteria, The equations of motion, Transfer functions, SMER dynamics,Linear model of vehicles, Static management, Dynamics management, Tilting of vehicle, Aimed dynamics, Newton's method, D'Alambert's method, Virtual work, Lagrange equations, Linear model of vehicle management, Tires.					
12.	**Learning methods:** Lectures, Analitical exercises, individual and team projects, consultations.					
13.	**Total available time**	120 hours				
14.	**Distribution of available time**	2 +1 +1				
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2		
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1		
16.	**Other forms of activities**	16.1.	**Project tasks**			
		16.2.	**Individual tasks**	1		
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**	70 points			
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points			
	17.3.	**Activity and participation**	20 points			

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

22.1. **Required literature**

Order No.	Author	Title	Publisher	Year
1.	F.Frantisek	Dinamika na vozikla	Fakulta dopravní, ČVUT, Praha	2008
2.	F.Frantisek	Avtomobilov tehnicki priracnik, Prague 2003	Avtomobilov tehnicki priracnik, Prague	2003
3.	J. First a kol., Zkoušeníautomobilů a motocyklů, Fakulta dopravní, ČVUT, Praha 2008	Zkoušeníautomobilů a motocyklů	Fakulta dopravní, ČVUT, Praha 2008	2008

22.2. **Additional literature**

Order No.	Author	Title	Publisher	Year
1.				
2.				
3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Supply chain management**
2.	**Code**	2MF106412
3.	**Study Program**	Transport, Organization and Logistics

4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	1st cycle			
6.	**Academic year / semester**	3rd / 6th	**7.**	**Number of credits**	4
8.	**Professor (s)**	Professor Boris Krstev,Ph.D			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Introduction to the tools for managing the supply chain.				
11.	**Content of the course program:** 1. Introduction to supply chain management 2. Supply chain management in industrial companies 3. Supply of raw materials 4. Managing transport 5. Managing repositories 6. Order Process 7. Optimizing orders 8. Management of raw materials in the production 9. Optimizing the production process 10. Delivery Process 11. Optimizing the delivery process 12. Managing inventory.				
12.	**Learning methods:** Lecturing, exercises				
13.	**Total available time**	156			
14.	**Distribution of available time**	2+2+1/ per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	
16.	**Other forms of studying activities**	**16.1.**	**Project tasks**	hours	
		16.2.	**Individual tasks**	1 hours	

		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
			Douglas M. Lambert, James R Stock, Lisa M ellram	Fundamentals of logistics management		2000
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Study program: TRANSPORT, ORGANIZATION AND LOGISTICS (4 years)

I Semester-First year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Mathematics I	8	3+2+2	216
Mechanical materials	8	3+2+2	216
Computer Science	6	2+2+1	156
Elective subject from the faculty 1	4	2+1+1	120
Elective subject from the faculty 2	4	2+1+1	120
Total:	30	12+8+7	828

I Semester-First year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Basics of Physics	4	2+1+1	120
Physics II	4	2+1+1	120
Electrotechnics and elektronics	4	2+1+1	120
Casting technology	4	2+1+1	120

II Semester-First year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Mathematics II	8	3+2+2	216
Engineering graphics	6	2+2+1	156
Technical Mechanics I (statics)	6	2+2+1	156
Elective subject from the faculty 3	4	2+1+1	120
Elective subject from the University 1	6	0+0+1	156
Sports and Recreation	0	0+0+2	
Total:	30	9+7+11	804

II Semester-First year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
The modern mechanical materials	4	2+1+1	120
Engineering logistics	4	2+1+1	120

IIISemester-Second year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Thermodynamics	8	3+2+2	216
Strength of materials	8	3+2+2	216
Technical Mechanics II (kinematics, dynamics, oscillations)	6	2+2+1	156
Elective subject from the faculty 4	4	2+1+1	120
Elective subject from the faculty 5	4	2+1+1	120
Total:	30	12+8+7	828

IIISemester-Second year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Corrosion and corrosion protection	4	2+1+1	120
Probability and statistics	4	2+1+1	120
Ergonomics	4	2+1+1	120
Industrial Management	4	2+1+1	120

IVSemester-Second year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Machine elements	8	3+2+2	216
Fluid Mechanics	6	2+2+1	156
Numerical methods	6	2+2+1	156
Elective subject from the faculty 6	4	2+1+1	120
Elective subject from the University	6	0+0+4	156
Total:	30	9+7+9	804

IVSemester-Second year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Measurement and measuring instruments	4	2+1+1	120
Heat transfer	4	2+1+1	120

V Semester- Third year			
Mandatory subjects			
SUBJEKTS	ECTS	Hours	Total
Management Information Systems	8	3+2+2	216
Internal combustion engines	8	3+2+2	216
Human resource management	6	2+2+1	156
Elective subject from the faculty 7	4	2+1+1	120
Elective subject from the faculty 8	4	2+1+1	120
Total:	30	11+8+7	828

V Semester- Third year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Plants and fuel	4	2+1+1	120
Basics of thermo-technical machines	4	2+1+1	120
Engineering economics	4	2+1+1	120
City public transport	4	2+1+1	120

VI Semester- Third year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Theory of movement of motor vehicles	8	3+2+2	216
Operations Research	6	2+2+1	156
Supply chain management	6	2+2+1	156
Elective subject from the faculty 9	4	2+1+1	120
Elective university subject 3	6	2+2+1	156
Total:	30	11+9+6	804

VI Semester- Third year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Project Management	4	2+1+1	120
Dynamics of motor vehicles	4	2+1+1	120

VII Semester- fourth year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Maintenance of motor vehicles	8	3+2+2	216
Quantitative methods in business decision making	8	3+2+2	216
Modern transport technologies	6	2+2+1	156
Elective subject from the faculty 10	4	2+1+1	120
Elective subject from the faculty 11	4	2+1+1	120
Total:	30	11+8+7	828

VII Semester- fourth year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Electronic data exchange	4	2+1+1	120
Traffic safety	4	2+1+1	120
Transport in containers	4	2+1+1	120
Product Life Cycle Management	4	2+1+1	120

VIIISemester- fourth year			
Mandatory subjects			
SUBJECTS	ECTS	Hours	Total
Quality Management	6	2+2+1	156
Occupational Safety and Health	6	2+2+1	156
Elective subject from the faculty 12	4	2+1+1	120
Elective subject from the University 4	6	2+2+1	156
Diploma Thesis	8	0+0+8	192
Total:	30	8+7+12	780

VIII Semester- fourth year			
Elective subjects			
SUBJECTS	ECTS	Hours	Total
Intelligent transport systems	4	2+1+1	120
Marketing Management	4	2+1+1	120

FACULTY OF MECHANICAL ENGINEERING – STADY PROGRAM: TRANSPORT, ORGANIZATION AND LOGISTICS

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Mathematics I**			
2.	**Code**	2FI100112			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of Computer Science-Vinica Department of Mathematics and Statistics			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	2012-2013/first	**7.**	**Number of credits**	8
8.	**Professor (s)**	Prof. Jordan Zivanovik ,PhD/ Prof. Martin Lukarevski, PhD			
9.	**Requirements for enrollment the Course**	no			
10.	**Purposes of the curriculum (competencies)**: Upgrading high school mathematics knowledge and introduction to higher mathematics				
11.	**Content of the course program:** Axiomatic definition of the real numbers. Limited sets. Intervals, environments, open and closed sets. Absolute value and distance. Mathematical induction. Matrices. Operations with matrices. Some special matrices. Determinants. Minor and algebraic complements. Calculating the inverse matrix. Kramer formulas. Gauss algorithm. Vectors. Collection of vectors. Multiplying a vector by a number. Coordinate system. Scalar, vector and mixed product. Equations of the line and plane. Relationship between lines and planes. Real sequence. Convergence and the limit. Limited and monotonous sequences. Operations with sequences. Zero-sequences and sequences with unlimited grow in absolute value. Number e. Some special sequences. Subsequences. Kauchy's sequence convergence criterion. Real function of a real variable - basic concepts. Examples of functions and some classes of functions - elementary functions. Limits and continuity of functions. Statements and rules for their calculation. Basic theorems in differential calculus. L' Hopital's rule. Monotony and extremes. Second derivative and its application. Examination of functions and construction of graphs. Higher-order derivatives and differentials. Taylor's formula.				
12.	**Learning methods:** Lectures, laboratory exercises, numerical exercises, e-learning, seminar work, teamwork, consultation				
13.	**Total available time**	216 hours			
14.	**Distribution of available time**	3+2+2 / per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3 hours	
		15.2.	**theoretical and practical exercises,**	2 hours	

			e-exams, preparation of independent seminar work	
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% success from all pre-exam activities i.e. 42 points from two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Glin Dzejms	Matematika na moderen inzhenering	Translation of the Government of R.Macedonia	2009
		2.	Zivanovik and assistants	Predavanja I vezbi po Matematika 1	e-ucenje	2010
		3.	B.Trpenovski, N.Celakoski, G.Cupona	Visa matematika I-IV	Prosvetno delo, Skopje	1995
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Milan Merkle	Matematicka analiza	Racunarski Fakultet - Beograd	2007
		2.	Ivan Slapnicar http://www.fesb.hr/mat1	Matematika 1	Fakultet, Elektr.strojarstva I	2002

					brodogradnje, Split	
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Mechanical materials**			
2.	**Code**	2MF100112			
3.	**Study Program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of Computer Science-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First/I semester	**7.**	**Number of credits**	8
8.	**Professor (s)**	Slavco Cvetkov, PhD, Associate Professor			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** At the end of the course, students will have competences obtained through the necessary fund of theoretical, methodological and applicative studying in the area of mechanical materials.				
11.	**Content of the course program:** 1. Introduction to the materials 2. Division and structure of metals 3. Alloys and state diagram 4. Steels: Obtaining and labelling 5. Carbon steels: structural and tool steels 6. Alloy steel: structural and tool steels 7. Heat treatment of steels 8. Surface hardening of steels 9. Cast iron: gray iron and malleable iron 10. Non ferrous metals and their alloys 11. Ceramics, glass and composites 12. Polymers and non metals (wood, leather, rubber)				

12.	**Learning methods:** -Teaching, exercises, projects assignment			
13.	**Total available time**		216	
14.	**Distribution of available time**		**3 + 2 + 2 / per week**	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	/ hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Angel Tasevski, PhD Vladan Andonovic, MsC	Mechanical materials	UGD - Stip	2011
		2.	Angel Tasevski, PhD Vladan Andonovic, MsC	Mechanical materials estimation	UGD - Stip	2011
		3.				

	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Computer Science**			
2.	**Code**	2FI110112			
3.	**Study program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of Computer Science-Vinica			
5.	**Cycle (first, second, or third study cycle)**	First study cycle			
6.	**Academic year / semester**	2012-2013 / first	7.	**Number of credits**	6
8.	**Professor (s)**	Assi. Professor Zoran Zdravev, PhD			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** - Adopting the basic concepts of computer science and concepts for using computers for communication, research and office work				
11.	**Contents of the course program:** - Introduction to computer science: algorithms, abstraction, history, - Computer hardware: introduction, types, architecture of computer systems, Murau law - Computer hardware: Peripherals, Computer Memory, digital identification; - Computer software: applicative software, open source software licenses; - Computer software: system software, programming languages; - Computer software: web services, online document storage and editing systems, - Computer networks: LAN, MAN, WAN, topologies, applications that run on network components, connectivity; - Computer networks: Internet, intranet, extranet, Internet services; - Computer security: a concept, a security risk, malicious software, unauthorized access, cryptography;				

	- Information systems: introduction, types, ERP, CRM, HR, SCM; - Content Management Systems CMS: DMS, DAMS, WCM, ECP, ERS; - Databases: fundamentals, types, use			
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects,consultations.			
13.	**Total available time**		156 hours	
14.	**Distribution of available time**		2+2+1	
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		Up 50 points	5 (five) (F)
			51 to 60 points	6 (six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

Annex No.3	**Program of the Course - first/second/third cycle studies**	
1.	**Title of the Course**	**Basics of Physics**

2.	**Code**	2FP120512			
3.	**Study Program**	Production Engineering			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev Faculty of mechanical engineering			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	1/1	**7.**	**Number of credits**	4
8.	**Professor (s)**	Prof. Todor Delipetrov, PhD			
9.	**Requirements for enrollment the Course**	enrolled semester			
10.	**Purposes of the curriculum (competencies):** Students are introduced to the basic concepts and laws of physics (Newton's laws, Hooke's law), elasticity and plasticity of bodies				
11.	**Content of the course program:** Test methods in physics, structure of matter, interaction. Reference system - comparative body trajectory and separation movements, Special Theory of Relativity (time dilation and length contraction). Laws for the movement, the concept of force, Newton's first law, mass, Newton's Second Law, Newton's Third Law. Work, energy and power. Elasticity and structure of bodies: voltage and relative deformation, Hooke's law. Oscillations, alignment fluctuations. Fluid mechanics. Statics gases. Fluid dynamics. Wave motion. Sound and sound sources.				
12.	**Learning methods:** Lectures, exercises (numerical and practical), papers and home learning				
13.	**Total available time**	216 hours			
14.	**Distribution of available time**	2 + 1 + 1 / per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1	
16.	**Other forms of activities**	**16.1.**	**Project tasks**		
		16.2.	**Individual tasks**	1	
		16.3.	**Home learning**		
17.	**Method of assessment**				
	17.1.	**Tests / oral exams**	70 points		
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points		
	17.3.	**Activity and participation**	20 points		
18.	**Assessment Criteria (points / score)**	**up 50 points**	5 (five) (F)		
		51 to 60 points	6 (six) (E)		
		61 to 70 points	7 (seven) (D)		

		71 to 80 points	8	(eight)	(C)
		81 to 90 points	9	(nine)	(B)
		91 to 100 points	10	(ten)	(A)
19.	**Signature requirement and passing the final exam**	60% success from all activities before exam i.e. 42 points from two mid-term exams, seminar paper, attendance of lectures and exercises			
20.	**Language of teaching / study**	Macedonian			
21.	**Method of monitoring the quality of teaching**	Self-evaluation			

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Todor Delipetrov	Physics 1	RGF	2003
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Lj. Petkovski	General physics	UKIM	1995
		2.	Z. Stojanov	General physics, book 1	UKIM	1985
		3.				

Annex No.3	**Program of the Course - first/second/third cycle studies**				
1.	**Title of the Course**	**Physics 2**			
2.	**Code**	2FP101212			
3.	**Study Program**				
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev Faculty of mechanical engineering			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	1/2	**7.**	**Number of credits**	4
8.	**Professor (s)**	Prof. Todor Delipetrov, PhD			
9.	**Requirements for enrollment the Course**	Student has enrolled current year			
10.	**Purposes of the curriculum (competencies):** Students are introduced to the basic concepts and laws of electromagnetism, optics, nuclear and atomic physics				
11.	**Content of the course program:**				

	Heat: temperature, spread of bodies, state of gas, melting, boiling, vaporization. Electrostatics: Coulomb's law, electrical work and power of the electric current, Joule's Law, Ohm's law, thermal phenomena, magnetic permeability and susceptibility. AC: effective value of alternating current, power of alternating current, electrical oscillations. Geometrical optics: light rejection and image in the flat mirror, thin lens equation, optical instruments. Physical optics: nature of light, laser, optical lattice. Atomic and nuclear physics: spectrum of hydrogen atom, quantum theory, radioactive radiation, detectors and protection, radioactive decay law				
12.	**Learning methods:** Lectures, exercises (numerical and practical), papers and home learning				
13.	**Total available time**		156 hours		
14.	**Distribution of available time**		2 + 2 + 1 / per week		
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	
16.	**Other forms of activities**	**16.1.**	**Project tasks**		
		16.2.	**Individual tasks**	1	
		16.3.	**Home learning**		
17.	**Method of assessment**				
	17.1.	**Tests / oral exams**		70 points	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points	
	17.3.	**Activity and participation**		20 points	
18.	**Assessment Criteria (points / score)**	**up 50 points**	5	(five)	(F)
		51 to 60 points	6	(six)	(E)
		61 to 70 points	7	(seven)	(D)
		71 to 80 points	8	(eight)	(C)
		81 to 90 points	9	(nine)	(B)
		91 to 100 points	10	(ten)	(A)
19.	**Signature requirement and passing the final exam**	60% success from all activities before exam i.e. 42 points from two mid-term exams, seminar paper, attendance of lectures and exercises			
20.	**Language of teaching / study**	Macedonian			
21.	**Method of monitoring the quality of teaching**	Self-evaluation			

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**

		1.	M. Delipetrev B. Doneva	Physics 2	UGD	2013
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Z. Stojanov	General physics, book 2	UKIM	1985
		2.				
		3.				

Annex No.3	**Program of the course–first cycle studies**				
1.	**Title of the Course**	**Electrotechnics and Electronics**			
2.	**Code**	2ET110012			
3.	**Study program**	Production Engineering / Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev" - Stip Faculty of Mechanical Engineering-Vinica			
5.	**Cycle (first, second, or third study cycle)**	1st cycle			
6.	**Academic year / semester**	1st / 1st	7.	Number of EKTS credits	4
8.	**Professor (s)**	Roman Golubovski, Assistant Professor			
9.	**Requirements for enrollment of the course**	enrolled 1st semester			
10.	**Purposes of the curriculum (competencies):** Introduction to basic principles of electrotechnics and electronics.				
11.	**Contents of the course program:** 1. Electric Current - Intensity, Current Field, Density 2. Electric Voltage and Potential 3. Basic Laws - Joul's, Ohm's, I & II Kirchhoff's 4. Magnetic Flux, Magnetic Field andMagnetism 5. Magnetic Induction, Ampere's Law and Magnetic Circuit 6. Electrical Measurements 7. Semiconductors 8. Diodes				

	9. BJT Transistors 10. MOSFET Transistors 11. Thyristors 12. Operational Amplifiers			
12.	**Learning methods:** Lectures, numerical exercises, individual and team projects, homework.			
13.	**Total available time**		120	
14.	**Distribution of available time**		2+1+1	
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of studying activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		Up 50 points	5 (five) (F)
			51 to 60 points	6 (six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		Order No.	**Author**	**Title**	**Publisher**	**Year**
		1.	M. Popnikolova-Radevska	Electrotechnics	TF, Bitola	2004

		2.	M. Kamilovski	Electronics 1	UKIM, Skopje	2005
	22.2	**Additional Literature**				
		Order No.	**Author**	**Title**	**Publisher**	**Year**
		1.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Casting technology**			
2.	**Code**	2MF101812			
3.	**Study Program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip, Faculty of Mechanical Engineering- Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First / I semester	**7.**	**Number of credits**	4
8.	**Professor (s)**	Slavco Cvetkov, PhD, Assi.Professor			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** At the end of the course, students will have competences obtained through the necessary fund of theoretical, methodological and applicative studying in the area of casting technology.				
11.	**Content of the course program:** 1. Introduction to the casting 2. Casting materials 3. Casting metalurgy 4. Sand casting 5. Centrifugal casting 6. Precise casting 7. Vacuum casting 8. Casting under pressure 9. Heaters for melting 10. Tools for casting 11. Construction tools for casting				

	12. Defects in casting			
12.	**Learning methods:** – Teaching, exercises, projects assignment			
13.	**Total available time**		120	
14.	**Distribution of available time**		2 + 1 + 1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	/ hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	/ hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points
18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams , seminar attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Zoran Anisic	Production technologies	Visa Tehnicka Skola	2003
		2.				

		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Mathematics II**			
2.	**Code**	2FI100412			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First/II	**7.**	**Number of credits**	8
8.	**Professor (s)**	Prof. Martin Lukarevski PhD / Prof. Jordan ZivanovikPhD			
9.	**Requirements for enrollment the Course**	Enrollment of the first cycle study program			
10.	**Purposes of the curriculum (competencies):** Knowledge and understanding of the basic mathematical concepts and theories, knowledge of ICT in mathematics, flexible use of knowledge in practice.				
11.	**Content of the course program:** 1. **The concept of Integral Calculus:** Indefinite integral – integration by substitution and integration by parts, fundamental integration formulas, Definite integral-concept, properties and applications. 2. **Infinite series:** Criteria for convergence, alternating series, Conditional and absolute convergence. Sequences and series of functions. Power series. Circle of convergence. 3. **Multivariate Calculus:** definition, properties and graphics of functions with several variables; Partial derivatives; Maximum and minimum values; The total differential. 4. **Multiple integrals.** 5. **Introduction of differential equations:** Terminology and notation; A first-order differential equation for the exponential function; First-order linear differential equations and other types of first-order differential equations.				

12.	**Learning methods:** – Lectures, – e-learning, – individual and team projects – Consultations.			
13.	**Total available time**		216	
14.	**Distribution of available time**		3+2+2 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Glyn James	Modern engineering mathematics	Translation of the	2009

					Government of R.Macedonia	
		2.	Milan Merkle	Matematicka analiza	Racunarski Fakultet - Beograd	2007
		3.	Tatjana Atanasova Pacemska	Matematika 2	Avtorizirani predavanja	2011
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Nikita Sekutkovski	Matematicka analiza 1	Prosvetno delo - Skopje	2008
		2.	Boro Piperevski	Matematika 2	FEIT - Skopje	2008
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Engineering graphics**			
2.	**Code**	2FP100912			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip Faculty of Mechanical Engineering - Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First / second semester	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assi. Prof. Slavco Cvetkov, Ph.D.			
9.	**Requirements for enrollment the Course**	None			
10.	**Purposes of the curriculum (competencies):** Training in drawing and reading technical drawings of machine parts. Training in drawing machine parts in the program package Auto CAD.				
11.	**Content of the course program:** Technical drawing. Views - basic, special and abbreviated views. Standards. Formats, naming and sizes of technical drawings. Types of lines and their application. Technical Letter. Sections and types of intersections. Marking and hatching at intersections. Labeling and types of quotation. Longitudinal tolerances.The shape and position tolerance. Designation of the quality of surface processing. To put position on machined parts. Listing of the thread. Modeling of parts. Workshop drawing. Formation of the mechanical drawing workshop part given the spatial layout and the orthogonal view. Formation of the mechanical drawing workshop part of assembled drawing. Technical Documentation				

12.	**Learning methods:** Lectures, exercises, individual works, home learning, consultations.			
13.	**Total available time**		156 hours	
14.	**Distribution of available time**		2+2+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2 hours
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2 hours
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	up 50 points	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Risto Taškovski	Engineering Graphics	Mechanical faculty, Skopje	2008
		2.				
		3.				
	22.2.	**Additional literature**				

		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	Program of the Course - first cycle studies				
1.	**Title of the Course**	**Technical Mechanics I (statics)**			
2.	**Code**	2MF100212			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip. Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First / second	7.	**Number of credits**	6
8.	**Professor (s)**	Assi. Prof. Slavco Cvetkov, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):**Students are introduced to statics: forces, moments, carriers, equilibrium of bodies, friction, centre of gravity;				
11.	**Content of the course program:** 1.System of forces acting in the plane, composition and decomposition of forces acting at a point; 2.Momentof force about a point, Varignon's theorem; 3.System of forces attacking panel und various counts; 4. Graphic alignment of forces, equilibrium of forces; 5. Planar carriers, transverse and axial forces; 6.Simple beam loaded with concentrated forces; 7.Simple beam loaded with a continuous load, coupling forces; Console; 8.Beam with overhangs; Gerber carrier-beam; 9. Statically determined framework supports; Lattice girders; 10.Statics in space; Spatial carriers; 11.Sliding friction, rolling friction, friction of the rope; 12.Centre of gravity line, surface and body; Guldin's theorems;				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	156 hours			
14.	**Distribution of available time**	2 +2 +1/ per week			
15.	**Forms of teaching / learning activities**	15.1.	lectures / theoretical - contact teaching, e-teaching	2hours	
		15.2.	theoretical and practical exercises, e-exams, preparation of independent seminar work	2hours	

16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1 hour
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10
	17.3.	**Activity and participation**	20

18.	**Assessment Criteria (points / score)**	to 50 points	5(five) (F)
		from 51 to 60 points	6(six) (E)
		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

Required literature

No.	Author	Title	Publisher	Year
1.	Simeon Simeonov	Technical mechanics 1(peer reviewed script)	UGD-Stip	2012
2.	Z.Petrevski, V. Gavrilovski, M. Mickovski	Tasks from Statics	Mechanical faculty Skopje	2008
3.	R.Josifova	Technical mechanics 1	Principal - Skopje	1981

Additional literature

No.	Author	Title	Publisher	Year
1.	B. Andonovic	Technical mechanics 1	Technical Faculty- Bitola	2006

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**English language 1**
2.	**Code**	UGD100112
3.	**Study Program**	Production engineering/Transport, organization and logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	Goce Delcev University Faculty of mechanical engineering

5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	2012/13	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assistant Prof. Biljana Ivanovska PhD, Prof. Tole Belcev PhD, Senior Lector M.A. Snezana Kirova			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** -enabling oral communication in everyday situations and expressing of your own attitudes and opinions; -understanding speech of different speakers and longer oral expressions and information; -identifying general and particular information in longer texts; -enabling written expression (compositions, letters, reports and other forms of academic writing); -vocabulary improvement; -mastering different grammar forms and structures; - ability for receptive and productive use of the English language in oral and written context; -ability for understanding and proper application of grammar forms and structures (articles, tenses, reported speech, passive voice, conditional sentences, relative sentences, modal verbs, infinitive/gerund, idioms, phrasal verbs, prepositions, word-formation, comparison of adjectives etc.)				
11.	**Content of the course program:** - grammar: articles, countable/uncountable nouns, present tenses, word-formation, adjectives, reported speech, comparison of adjectives, adverbs; -vocabulary: methods of communication, expressing feelings and emotions, description of working skills, types of money, types of houses, electrical appliances, furniture, description of physical appearance and character, lifestyles, phrasal verbs, prepositions; -reading: different texts with exercises (multiple choice questions, gapped texts, matching headings with the paragraph); -listening: speech of different speakers and longer oral expressions and information with exercises (multiple choice questions, taking notes, completing sentences); -speaking: comparison, giving proposals, expressing feelings, expressing opinions, agreeing/disagreeing, requesting and giving explanation, expressing wishes, complaining; - writing: reports, letters, essays.				
12.	**Learning methods:** Seminars, interactive method: team work, essays, homework, seminar paper, discussion, debate, cooperative learning techniques, individual work, simulation of extra-curricular teaching and educating activities, individual learning.				
13.	**Total available time**	156			
14.	**Distribution of available time**	0 + 0 + 4 / per week			

15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	0
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	0
16.	**Other forms of activities**	**16.1.**	**Project tasks**	2 hours
		16.2.	**Individual tasks**	2 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		up 50 points	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% achievement on the written exam	
20.	**Language of teaching / study**		English language	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Virginia Evans and Jenny Dooley	Upstream -Intermediate	Express Publishing	2002
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Oxford Practice Grammar	John Eastwood	OUP	2009
		2.	Practical English Usage	Michael Swan	OUP	2005
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**The modern mechanical materials**			
2.	**Code**	2MF101912			
3.	**Study Program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip, Faculty of Mechanical Engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	First/I semester	**7.**	**Number of credits**	4
8.	**Professor (s)**	Slavco Cvetkov, PhD, Assi. Professor			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** At the end of the course, students will have competences obtained through the necessary fund of theoretical, methodological and applicative studying in the area of the mechanical materials.				
11.	**Content of the course program:** 1. Introduction to the newest materials 2. The modern engineering materials 3. Composites 4. Introduction to fullerenes 5. Biomaterials an d their usage 6. Polymers 7. Smart materials 8. Cellular materials 9. Nanomaterials 10. Ceramics 11. Wood, paper and glues 12. The procedure of material selection				
12.	**Learning methods:** - Teaching, exercises, projects assignment				
13.	**Total available time**	120			
14.	**Distribution of available time**	2 + 1 + 1 / per week			

15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1 hour
		16.3.	**Home learning**	

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		up 50 points	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams, seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Angel Tasevski, PhD; Vladan Andonovic, MsC	The modern mechanical materials	UGD - Stip	2011
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	Program of the Course - first cycle studies

1.	**Title of the Course**	**Engineering logistics**			
2.	**Code**	2MF106712			
3.	**Study Program**	Production engineering/Transport, organization and logistics			
4.	**Organizer of the study program(unit orinstitute, Faculty, department)**	Goce Delcev University Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle studies (Bachelor studies)			
6.	**Academic year / semester**	First/Second semester	7.	ECTS	4
8.	**Professor (s)**	Prof. Zoran Despodov, PhD			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes ofthe curriculum(competencies):** Familiarize students with the fundamentals of Engineering logistics, practical application and ways of making a better use of the resources				
11.	**Content ofthecourse program:** 1.Introduction to logistics. 2. Logistics systems in industrial enterprises. 3. Engineering Logistics and organization of production. 4. Supply of materials. 5. Storage for materials. 6. Inter operational transport. 7. Packaging and storage. 8. Means of transport in the system of engineering logistics. 9. Transportation problems. 10. Information systems and the activities of the logistic system.				

	11. Logistics support of the flexible manufacturing. 12. Distribution of the final products.			
12.	**Learning methods:** -Theory, practical teaching and auditory exercises			
13.	**Total availabletime**		120	
14.	**Distribution of availabletime**		2+1+1	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical andpractical exercises, e-exams, preparationofindependentseminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper/project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria(points /score)**	up 50points	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirementandpassingthefinal exam**	60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams, seminar paper, attendance of lectures and exercises	
20.	**Language ofteaching / study**	Macedonian	
21.	**Method ofmonitoringthe quality of teaching**	Self-evaluation	

22.	Literature					
	22.1.	Required literature				
		No.	Author	Title	Publisher	Year
		1.	T. Pantelic	Industrial logistics	ICIM, Krusevac	2001
		2.	V. Jocik	Technical logistics	Nis	2001
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	Program of the Course - first cycle studies				
1.	Title of the Course	Thermodynamics			
2.	Code	2MF100312			
3.	Study Program	Production engineering / Transport, organization and logistics			
4.	Organizer of the study program (unit or institute, Faculty, department)	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	Cycle (first, second and third cycle)	first cycle			
6.	Academic year / semester	2/III	7.	Number of credits	8
8.	Professor (s)	Assistant Prof. Radomir Cvetanovski, PhD			
9.	Requirements for enrollment the Course	non			
10.	**Purposes of the curriculum (competencies):** Introducing the values of condition and their changes, the basic gas laws, equation of condition of ideal gases, internal energy, entropy, heat diagram; humid air				
11.	**Content of the course program:** 1. Introductory terms and values of condition; Basic gas laws; Concept of ideal gas and equation of condition of an ideal gas; The main laws of thermodynamics; Specific heat capacity; Changes of condition of ideal gases; 2. Circular process; Recoverable and irreversible processes; Entropy; Double phased fixtures; Real gases; Humid air;				
12.	**Learning methods:** Lectures with presentations through slides, exercises, independent preparation and presentation of the project assignment				
13.	Total available time	216			
14.	Distribution of available time	3+2+2 / per week			

15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% from pre-exam activities or 42 points from the two tests, seminar papers, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Atanas Blazevski	Termodinamika I	UKIM,	1994
		2.	Atanas Blazevski	Zbirka reseni zadaci po Termodinamika I	UKIM	1996
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	NedjeljkaPetric, Ivo Vojnović, VanjaMartinac	Tehnicka Termodinamika	Kemisko-tehnoloskiFakultet - Split	2007
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**					
1.	**Title of the Course**	**Strength of materials**				
2.	**Code**	2MF100412				
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics				
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip. Faculty of Mechanical Engineering -Vinica				
5.	**Cycle (first, second and third cycle)**	First cycle				
6.	**Academic year / semester**	second / third	7.	Number of credits	8	
8.	**Professor (s)**	Assi. Prof. Simeon Simeonov, Ph.D				
9.	**Requirements for enrollment the Course**	Attended course of technical mechanics 1				
10.	**Purposes of the curriculum (competencies):** Students are introduced to the moments of inertia, the types of stresses, dimensioning					
11.	**Content of the course program:** Geometric features of planar sections: static moment, the moment of inertia, Steiner's theorem; Tensile and compressive: axial stresses, dependence of the stress on the deformation -Hooke's law. Plane stress condition; Shear and torsion; Bending: pure bending, bending from forces, strength calculation, uniform strength, major stresses at the bent beam; Elastic deformations at linear carriers; Statically indeterminate frameworks and carriers ; Buckling: Euler and Tetmayer methods ; Complex stresses: hypotheses of strength ,obliquely bending; Complex stresses of tensile (compressive) and torsion , Complex stresses of tensile (compressive) and bending, Complex stresses of bending and torsion ; Cylinder with a thick wall, Tank with thin wall; Strength of the material under dynamic load effect.					
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.					
13.	**Total available time**	216 hours				
14.	**Distribution of available time**	3 +2 +2/ per week				
15.	**Forms of teaching / learning activities**	15.1.	lectures / theoretical - contact teaching, e-teaching	3 hours		
		15.2.	theoretical and practical exercises, e-exams, preparation of independent seminar work	2hours		
16.	**Other forms of activities**	16.1.	**Project tasks**	1hour		
		16.2.	**Individual tasks**	1 hour		
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**	70			
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10			
	17.3.	**Activity and participation**	20			

18.	**Assessment Criteria (points / score)**	to 50 points	5(five)(F)
		from 51 to 60 points	6(six) (E)
		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

Required literature

No.	Author	Title	Publisher	Year
1.	Simeon Simeonov	Strength of material (script)	UGD-Stip	2011
2.	A.Ilievski, Lj.Todorovska-Azievska, N.Babamov	Strength of material	Dgitprint - Skopje	2008
3.	Lj.Trajkovska	Strength of material1	UKIM -Skopje	1993

22.1.

Additional literature

No.	Author	Title	Publisher	Year
1.	Lj.Trajkovska	Strength of material1 Collection tasks ,	UKIM -Skopje	1993 1993
2.	K.Angjusev, D.Korunovski, Z.Petreski,G.Tasevski	Strength of material1 Collection tasks ,	Mechanical faculty Skopje	2008 2008
3.				

22.2.

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Technical Mechanics 2(kinematics, dynamics, oscillations)**			
2.	**Code**	2MF100612			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip. Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Second/ third	7.	Number of credits	6
8.	**Professor (s)**	Assi. Prof. Simeon Simeonov, Ph.D			

9.	**Requirements for enrollment the Course**	No		
10.	**Purposes of the curriculum (competencies):** Students are introduced to the movement of bodies, kinematics, dynamics and oscillations			
11.	**Content of the course program:** 1.Introduction to kinematics, motion particle, velocity, acceleration; 2.Types of motion: rectilinear, harmonic, circle, oblique angle shot; 3.Kinematics of a rigid body, translational motion, rotational motion and plane motion; 4.Composed motion of a rigid body, compositon of translations, composition of rotations, composition of translation and rotation of a rigid body; 5. Introduction to dynamics, dynamics of particle, differentiatial equation of motion, types of motion; 6.Laws of mechanics, impulse and work of force, amount of motion, kinetic energy, potential energy…. ; 7.Dynamics of material systems, principles of mechanics: Lagrange-D'Alembert principle; 8.Moments of inertia of a body, 9.Rigid body dynamics, translation motion, rotation motion, plane motion; 10.Oscillations general, free oscillations, Free damped (with resistance) oscillations , resistance of oscillations is proportional to the first degree of speed, force is constant; 11. Forced oscillations without resistance ,forced oscillations with resistance (damped); 12. Application of oscillations in a technique.			
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.			
13.	**Total available time**		156 hours	
14.	**Distribution of available time**		2 +2 +1/ per week	
15.	**Forms of teaching / learning activities**	15.1.	lectures / theoretical - contact teaching, e-teaching	2 hours
		15.2.	theoretical and practical exercises, e-exams, preparation of independent seminar work	2hours
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1 hour
		16.3.	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10
	17.3.	**Activity and participation**		20
18.	**Assessment Criteria (points / score)**		to 50 points	5(five)(F)
			from 51 to 60 points	6(six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)

		from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	Author	Title	Publisher	Year
		1.	S.Simeonov Z.Sovreski	Technical mechanics 1(peer reviewed script)	UGD-Stip	2011
		2.	E,Vetijakoska	Kinematics, dynamics, oscillations	Mechanical faculty-Skopje	2008
		3.	E,Vetijakoska	Kinematics	Mechanical faculty-Skopje	2009
	22.2.	**Additional literature**				
		No.	Author	Title	Publisher	Year

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Corrosion and corrosion protection**			
2.	**Code**	2MF102112			
3.	**Study Program**	Production engineering/Transport Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip, Faculty of Mechanical Engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Second/IIIsemester	**7.**	**Number of credits**	4
8.	**Professor (s)**	Assi. Professor Slavco Cvetkov, PhD			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** At the end of the course, students will have competences obtained through the necessary fund of theoretical, methodological and applicative studying in the area of the materials corrosion and protection.				
11.	**Content of the course program:** 1. Introduction to the corrosion 2. Corrosion in water solutions 3. Pitting corrosion 4. Contact corrosion				

	5. Corrosion under mechanical factors 6. Procedures for metals protection 7. Protection with electrode potential 8. Anode protection 9. Protection with surface coating 10. Electrochemical procedures for metals protection 11. Coating metals protection 12. Constructive methods for metals protection			
12.	**Learning methods:** -Teaching, exercises, projects assignment			
13.	**Total available time**		120	
14.	**Distribution of available time**		2 + 1 + 1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1 hour
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% success from all pre exam activities i.e. 42 pointsfrom two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian	

21.	**Method of monitoring the quality of teaching**	Self-evaluation

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	H.J. Svetomir	Corrosion and protection	Skopje - TMF	1989
		2.	M. Milenkovic	Corrosion and protection	Belgrade	1966
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Probability and statistics**			
2.	**Code**	2FI130712			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Second/IV	**7.**	**Number of credits**	4
8.	**Professor (s)**	Prof. Tatjana Atanasova Pacemska, Ph.D			
9.	**Requirements for enrollment the Course**	Enrollment of the first cycle study program			
10.	**Purposes of the curriculum (competencies):** Knowledge and understanding of the basic concepts and theories of probability and statistics and their flexible use in practice.				
11.	**Content of the course program:** Basic concepts of the probability theory. Random Experiment. Random event. Probability space. The axioms of probability. Classical definition of probability. Geometric definition of probability. Conditional probability. Total probability. Bayes' theorems or rule. Bernoulli' scheme. Approximate theorems of the Bernoulli' scheme. Discrete and continuous random variables. Random vectors. Definition of the mathematical expectation, variance and standard deviation. Functions of random				

	variables. Law of large numbers. Chebyshev' Inequality. Central limit theorem. Descriptive statistics. Confidence intervals. Tests of hypothesis.			
12.	**Learning methods:** – Lectures, – e-learning, – individual and team projects – Consultations.			
13.	**Total available time**		120	
14.	**Distribution of available time**		2+1+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	Other forms of activities	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending oflectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**

		1.	Risto Malceski	Voved vo teorijata na verojatnosta	FON	2006
		2.	Željko Pauše	Uvod u matematičku statistiku	Školska knjiga, Zagreb	1993
		3.	Nikola Tuneski, Biljana Jolevska-Tuneska	Zbirka reseni zadaci po Verojatnost i statistika	Masinski Fakultet - Skopje	2011
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first/second/third cyclestudies**				
1.	**Title of the Course**	**Ergonomics**			
2.	**Code**	2MF106812			
3.	**Study Program**	Production engineering/Transport, organization and logistics			
4.	**Organizer of the study program(unit orinstitute, Faculty, department)**	Goce Delcev University -Stip, Faculty of Mechanical Engineering Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle studies (Bachelor studies)			
6.	**Academic year / semester**	Second /third semester	7.	ECTS	4
8.	**Professor (s)**	Assi. Prof. Dejan Mirakovski, PhD			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes ofthe curriculum(competencies):** Introduction to ergonomics and its principles, ergonomic design of the workspace, work place, characteristics of the work place and organization.				
11.	**Content ofthecourse program:**				

	1.Introduction to ergonomics, 2. Anthropometric aspect of the man-machine system, 3. Ergonomic principles, 4. Ergonomics as a field for quality improvement, 5. Ergonomic design of the workspace in modern offices, 6. Ambient perception, 7. Impact of lighting in working conditions, 8. Presentation of visual information, 9. Workplace and its organization, 10. Design for special groups of people, 11. Human errors, accidents and safety at work, 12. Rhythm of the body, working ability and effects of the alcohol.			
12.	**Learning methods:** – Lectures, exercises, individual tasks			
13.	**Total availabletime**		120	
14.	**Distribution of availabletime**		2+1+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical andpractical exercises, e-exams, preparationofindependentseminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper/project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria(points /score)**	**up 50points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)

		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirementandpassingthefinal exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language ofteaching / study**	Macedonian	
21.	**Method ofmonitoringthe quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Prof. R. Polenakovik	"Ergonomics" (customized lectures)	UKIM, Faculty of Mechanical Engineering, Skopje	2007
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Industrial Management**
2.	**Code**	2MF106912
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica
5.	**Cycle (first, second and third cycle)**	First cycle

<table>
<tr><td>6.</td><td>Academic year / semester</td><td colspan="2">Second/Third semester</td><td>7.</td><td>Number of ECTS credits</td><td>4</td></tr>
<tr><td>8.</td><td>Professor (s)</td><td colspan="5">Assi. Prof. Misko Dzidrov, Ph.D</td></tr>
<tr><td>9.</td><td>Requirements for enrollment the Course</td><td colspan="5">No</td></tr>
<tr><td>10.</td><td colspan="6">Purposes ofthe curriculum(competencies):Learning of managerial functions: planning, organizing and staffing, leadership, controlling.</td></tr>
<tr><td>11.</td><td colspan="6">Contents of the course program:
1. Introduction to Management
2. Problem solving and decision making
3. Information and information systems
4. Fundamentals of organizational communication
5. Organizational communication - flows, networks and types
6. Management by objectives and managerial function of planning
7. Managerial function of organizing: division and grouping of work
8. Managerial function of organization: coordination, management range and organizational design
9. Organizational conflicts
10. Staffing and Motivating
11. Styles of leadership and types of managers
12. Systems and processes in controlling</td></tr>
<tr><td>12.</td><td colspan="6">Learning methods:
Interactive teaching, exercises, individual and/or team work on projects, consultations and individual-study.</td></tr>
<tr><td>13.</td><td colspan="2">Total availabletime</td><td colspan="4">120 hours</td></tr>
<tr><td>14.</td><td colspan="2">Distribution of availabletime</td><td colspan="4">2 +1 +1</td></tr>
<tr><td rowspan="2">15.</td><td rowspan="2">Forms of teaching / learning activities</td><td>15.1.</td><td colspan="2">lectures / theoretical - contact teaching, e-teaching</td><td>2</td></tr>
<tr><td>15.2.</td><td colspan="2">theoretical andpractical exercises, e-exams, preparationofindependentseminar work</td><td>1</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Other forms of activities</td><td>16.1.</td><td colspan="2">Project tasks</td><td></td></tr>
<tr><td>16.2.</td><td colspan="2">Individual tasks</td><td>1</td></tr>
<tr><td>16.3.</td><td colspan="2">Home learning</td><td></td></tr>
</table>

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper/project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria(points /score)**	**up 50points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirementandpassingthefinal exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language ofteaching / study**	Macedonian	
21.	**Method ofmonitoringthe quality of teaching**	Self-evaluation	

22.	Literature					
	22.1.	Required literature				
		Order No.	Author	Title	Publisher	Year
		1.	T. Kralev	Management Principles Part 1	CIM	2001
		2.				
		3.				
	22.2.	Additional literature				
		Order No.	Author	Title	Publisher	Year
		1.	T. Kralev	Management Principles Part 1	CIM	2005
		2.	T. Kralev	Management Principles Handbook	CIM	2005
		3.	V. Bulat	Industrial Management	Faculty for Industrial Management - Kruševac	2007

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**Machine elements**
2.	**Code**	2MF100712

3.	**Study Program**		Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**		University “Goce Delcev”- Stip. Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**		First cycle			
6.	**Academic year / semester**		second / fourth	7.	Number of credits	8
8.	**Professor (s)**		Assi. Prof. Simeon Simeonov Ph.D			
9.	**Requirements for enrollment the Course**		Attended course of Strength of material			
10.	**Purposes of the curriculum (competencies):** Students are introduced to the properties of machine elements, their dimensioning and constructing;					
11.	**Content of the course program:** Elements for joining. Separable threaded fasteners, types, threaded transmitters, threaded fasteners, material, calculation; Wedges, serrated joints, pins. Inseparable fasteners (rivets, welded connections); Springs, flexible springs, spirally screw springs, construction and calculation; Bearing, ball bearing (rolling bearings), sleeve bearing (slide bearings), construction and calculation; Clutches, constantly engaged, engaged-disengaged manageable clutches, automatic clutches. Installation of pipes; Gears, cylindrical gears, construction and calculation. Conical gears , construction and calculation; Worm and gear sets; Belts transmitters; Friction transmitters; Chains.					
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.					
13.	**Total available time**		216 hours			
14.	**Distribution of available time**		3 +2 +2/ per week			
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**		3 hours	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**		2hours	
16.	**Other forms of activities**	16.1.	**Project tasks**		1hour	
		16.2.	**Individual tasks**		1 hour	
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**			70	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**			10	
	17.3.	**Activity and participation**			20	
18.	**Assessment Criteria (points / score)**		to 50 points		5(five)(F)	
			from 51 to 60 points		6(six) (E)	
			from 61 to 70 points		7 (seven) (D)	

		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

22.1. **Required literature**

No.	Author	Title	Publisher	Year
1.	Simeon Simeonov	Strength of material (script)	UGD-Stip	2011
2.	D.Stamboliev	Machine elements ,1,2	UKIM Skopje	1975
3.	K.Trimcevski	Machine elements	Mechanical faculty - Skopje	

22.2. **Additional literature**

No.	Author	Title	Publisher	Year
1.	M. Ognjanovik	Mechanical elements	Mechanical faculty - Beograd	2008
2.	S.Simeonov	Mechanical elements-collection tasks	UGD -Stip	2011
3.				

		1.	M. Ognjanovik	Mechanical elements	Mechanical faculty - Beograd	2008
		2.	S.Simeonov	Mechanical elements-collection tasks	UGD -Stip	2011
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Fluid Mechanics**
2.	**Code**	2MF100812
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica

5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	II/IV semester	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assi. Prof. Radomir Cvetanoski, Ph.D			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Introducing students to the mechanics of fluids, and training for calculations and practical application of the laws of fluid mechanic				
11.	**Content of the course program:** Tasks and application of fluid mechanics; most important thermodynamic and physical properties of gases; most important thermodynamic and physical properties of liquids; Statics of fluids; Kinematics flow; ideal fluid dynamics; Some elementary flows ideal fluid through electrical flow; two-dimensional potential flow; convection viscous fluid; Methods of application of fluid mechanics (hydraulics); laminar flow through circular pipes; Hydraulic shock.				
12.	**Learning methods:** Theoretical lectures, auditory exercises, lectures with presentations through slides, exercises, independent elaboration and defense of the project task				
13.	**Total available time**	156 hours			
14.	**Distribution of available time**	2+2+1 / per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	
16.	**Other forms of activities**	**16.1.**	**Project tasks**	hours	
		16.2.	**Individual tasks**	1 hours	
		16.3.	**Home learning**	hours	
17.	**Method of assessment**				
	17.1.	**Tests / oral exams**		70 points	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points	
	17.3.	**Activity and participation**		20 points	
18.	**Assessment Criteria (points / score)**	**up 50 points**		5(five) (F)	
		51 to 60 points		6(six) (E)	
		61 to 70 points		7 (seven) (D)	
		71 to 80 points		8 (eight) (C)	
		81 to 90 points		9 (nine) (B)	

		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities i.e. 42 points from two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Ass. Prof. Ph.D Radomir Cvetanoski	Fluid Mechanics	**UGD**	**2009**
		2.	Frank White	Fluid Mechanics	Ars Lamina Skopje	2009
		3.	Ilija Mijakovski	Fluid Mechanics-collection solution tasks	Technical Faculty - Bitola	1994
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Numerical methods**			
2.	**Code**	2FP101512			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip Faculty of Mechanical engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Second/Fourth	7.	Number of credits	6
8.	**Professor (s)**	Prof. Blagoj Golomeov, Ph.D.			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** Students are introduced to the basics of numerical mathematics.				
11.	**Content of the course program: Introduction**. Basic concepts of error estimation. Approximately solving equations with one unknown. Method of halving. Newton-				

	Rafson method. Secant method. Interpolation. Polynomial interpolation. Lagrange formula. Newton interpolation's formula back and forth. Two-dimensional interpolation. Numerical differentiation, Newton interpolation. Numerical integration. Newton IP. Trapeze and Simpson's rule. Gaussian elimination, Jakob and Gauss Zajdelov method. Numerical solution of ordinary differential equations. Taylor series methods. Euler method. Higher-order methods. Runge-Kuta method. Polynomial regression. Method of least squares. Techniques for network planning. Project, activity, event. Presentation of addicted activities. Fulker rule. PERT method- time analysis. Method CPM-critical path.			
12.	**Learning methods:** Lectures, e-learning, individual and team projects, consultations.			
13.	**Total available time**		156	
14.	**Distribution of available time**		2+2+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-examactivities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**	
	22.1.	**Required literature**

		No.	Author	Title	Publisher	Year
		1.	Blagoj Golomeov	Numerical methods in mining and geology	Faculty of Natural and Technical Sciences	2009
		2.				
		3.				

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Virginia Evans and Jenny Dooley	Upstream -Intermediate	Express Publishing	2002
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Oxford Practice Grammar	John Eastwood	OUP	2009
		2.	Practical English Usage	Michael Swan	OUP	2005
		3.				

Annex No.3	**Program of the Course - first/second/ third cycle studies**				
1.	**Title of the Course**	**Measurement and measuring instruments**			
2.	**Code**	2MF102212			
3.	**Study Program:**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cucle (first, second, third cycle)**	First cycle			
6.	**Academic year / semester**	Second / fourth semester	7.	Number of ECTS credits	4
8.	**Professor (s)**	Assi. Prof. Bratica Temelkoska, Ph.D			
9.	**Requirements for enrolment the Course**	No			
10.	**Purposes of the curriculum (competencies):**Students are introduced to the types of measuring instruments and their application.				
11.	**Content of the course program:** Basic and general terms in metrology; Measurement and measurement concept, defined in terms of metrology; Measuring instruments; caliper rule and micrometers; comparators; yardsticks for measuring angles and cones; Methods for measurement				

	and control coils; measuring machines; Measuring instruments based on optical measurements; pressure measurement. Temperature measurement; Instruments for measuring flow; Measuring force. Instruments for measuring deformations.			
12.	**Learning methods;** Theoretical lectures, laboratory exercises			
13.	**Total available time**		120 hours	
14.	**Distribution of the available time**		2+1+1	
15.	**Forms of teaching/ Learning activities**	15.1	**Lectures - theoretical contact teaching/e-teaching**	2
		15.2	**Theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1	**Projects tasks**	
		16.2	**Individual tasks**	1
		16.3	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams,**		**70 points**
	17.2.	**Seminars (paper /project - presentation ; written and /or oral**		**10 points**
	17.3.	**Activity and participacion**		**20 points**
18.	**Assessment Criteria (points / score)**		**to 50 points**	5(five) (F)
			from 51 to 60 points	6(six) (E)
			from 61 to 70 points	7(seven) (D)
			from 71 to 80 points	8(eight) (C)
			from 81 to 90 points	9(nine) (B)
			from 91 to 100 points	10(ten) (A)
19.	**Signature requirement and passing tne final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching/study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
		Required literature				
		Order No.	**Author**	**Title**	**Publisher**	**Year**
	22.1	1.	Bratica Temelkoska	Measurement and measuring instruments-textbook	University “Goce Delcev”- Stip. Faculty of Mechanical	2009

					Engineering - Vinica	
		2.				
		3.				
	22.2	**Additional literature**				
		Order No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Heat transfer**			
2.	**Code**	MF102312			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	first cycle			
6.	**Academic year / semester**	II/IV semester	**7.**	**Number of credits**	4
8.	**Professor (s)**	Assi. Prof. Radomir Cvetanoski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** Introduction to basic concepts of heat and temperature, the basic types of heat transfer, conduction, convection and radiation, heat transfer devices, Heat and types of Heat, efficiency and design.				
11.	**Content of the course program:** 1.Temperature and heat; Transmission of heat; conduction heat transfer; Convective heat tranfer; Radiation heat transfer; Heat; 2. Efficiency of heat exchangers; Classification of heat exchangers; Tubular heat exchangers; Plate heat echangers; Regenerativeheat exchangers; Designing heat exchangers;				

12.	**Learning methods:** Lectures with presentations through slides, exercises, independent elaboration and defense of the project task			
13.	**Total available time**		120 hours	
14.	**Distribution of available time**		2 +1+1 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities i.e. 42 points from two mid-term exams , seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	A. Mojsovski	Heat transfer and mass	UKIM	1992
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**

		1.	Schlunder E. U	Heat Exchanger Design Handbook	Hamisphere Publishing Corporation, Washington, USA	1987
		2.	John H. Lienhard	A heat transfer textbook	Philogiston press	2011
		3.				

		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Schlunder E. U	Heat Exchanger Design Handbook	Hamisphere Publishing Corporation, Washington, USA	1987
		2.	John H. Lienhard	A heat transfet textbook	Philogiston press	2011
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	ManagmentInformation Systems			
2.	**Code**	2MF106112			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	1st cycle			
6.	**Academic year / semester**	3rd / 5th	**7.**	**Number of credits**	8
8.	**Professor (s)**	Professor Zoran Panov, PhD			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Introduction to data, information systems and management. Hardware and software maintenance of the production information systems.				
11.	**Content of the course program:** 1. Data, information systems; 2. Management of information systems / subsystems; 3. The structure of information systems (information systems for top management, support systems);				

	4. Helpful tools to support decision making; 5.Hardware and software maintenance of the production information systems; 6. Performance measurement system-PMS and their models; 7. Indicators to be used in a PMS; 8. JIT approach, MRP 1, MRP 2, KanBan system; 9. Production Information systems in an intranet environment; 10. Designing the architecture of the enterprise; 11. Preliminary business model and analysis of current systems and technology; 12. Data architecture, applications, and implementation plan.			
12.	**Learning methods:** Lecturing, exercises			
13.	**Total available time**		216	
14.	**Distribution of available time**		3+2+2/ per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		**up 50 points**	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**	
	22.1.	**Required literature**

		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Prof. Zoran Panov, PhD	Informaciono-upravuvacki sistemi - lectures	UGD, Stip	2008
		2.	M. Stoilovik	Logicna sinteza upravljanja	Masinski fakultet, Nis	2002
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	V.Bulat, Z.Gavric	Proizvodni informacioni sistemi	FIM, Krusevac	2006
		2.	Dz. Nadrljanski	Informacioni sistemi	FIM, Krusevac	2005
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Internal combustion engines**			
2.	**Code**	2MF109112			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	third / fifth	7.	Number of ECTS credits	8
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Content of the course program:** Introduction to basic Thermotechnical machines - steam boilers, thermal turbines, steam turbines, devices heating and air conditioning, refrigeration plants, internal combustionengines				
11.	**Contents of the course program:** Types of energy; energy sources; steam boilers; Heat balance and heat losses; Useful coefficient; construction of steam boilers; Thermal turbines and plants. Basic elements and classification steam turbines plants; Heating and cooling; ventilation plants; Refrigerating plants; Motor cycles in engines internal combustion				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	216 hours			
14.	**Distribution of available time**	3+2+2			

15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	2
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

Required literature

	Order No.	Author	Title	Publisher	Year
22.1.	1.	S. Armenski	Thermotechnical machinery and devices	University "Ss. Cyril and Methodius " Skopje	1995
	2.				
	3.				

Additional literature

	Order No.	Author	Title	Publisher	Year
22.2.	1.	I. Petreski	Steam turbines	University "Ss. Cyril and	2004

					Methodius " Skopje	
		2.	M. Dimitrovski	Engines internal combustion	University "Ss. Cyril and Methodius " Skopje	2001
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Human resource management**			
2.	**Code**	2MF106212			
3.	**Study Program**	Transport, organization and logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev Faculty of mechanical engineering Department of transport, organization and logistics			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third / fifth	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assistant Prof. Nikolinka Doneva, PhD			
9.	**Requirements for enrollment the Course**	no			
10.	**Purposes of the curriculum (competencies):** Acquisition of knowledge about the term human resources, strategies for their development, verification, decision decision, performance evaluation and change management in the organization.				
11.	**Content of the course program:** 1.Human Resources Development for the 21st Century; 2. Devising strategies for human resource development; 3. Introduction of human resource development strategies into practice; 4. Identification of human resources; 5. Decision decision for fair selection; 6. Career development management; 7. Development of motivation and commitment; 8. Building effective teams; 9. Determination and evaluation of performance; 10. Organizational development and change management in the organization.				
12.	**Learning methods:**				
13.	**Total available time**	156			
14.	**Distribution of available time**	2+2+1/ per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	

16.	**Other forms of activities**	**16.1.**	**Project tasks**	Hours
		16.2.	**Individual tasks**	1 Hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Ass. Prof. Radmil Polenakovik, PhD (prepared)	Razvoj na coveskite resursi (for internal use)	Faculty of mechanical engineering, SkopjeUKIM	2003
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**Plants and fuel**
2.	**Code**	2MF109612
3.	**Study Program**	Transport, Organization and Logistics

4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip, Faculty of Mechanical Engineering -Vinica				
5.	**Cycle (first, second and third cycle)**	First cycle				
6.	**Academic year / semester**	Third/ fifth	7.	**Number of ECTS credits**	4	
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D				
9.	**Requirements for enrollment the Course**	No				
10.	**Purposes of the curriculum (competencies):**(Introducing students to classical and no classical plants and fuels, their properties, characteristic and uses)					
11.	**Contents of the course program:**Mobility in the 21st century, Vehicles with classical engines, vehicles with modified internal combustion engines, electric battery vehicles, vehicles with hybrid drives, electric vehicles with fuel cells, obtaining and use of fuels for fuel cells, fuelcell vehicles conceptsof vehicles with alternative plants, steam engine, fuel andcombustion, general terms, fuel division, general characteristics of fuels, combustion of fuels, products of the combustion process – smokeemissions, fuel combustion speeds.					
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.					
13.	**Total available time**	120 hours				
14.	**Distribution of available time**	2+1+1				
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2		
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1		
16.	**Other forms of activities**	16.1.	**Project tasks**			
		16.2.	**Individual tasks**	1		
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**		70 points		
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points		
	17.3.	**Activity and participation**		20 points		
18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)			
		51 to 60 points	6(six) (E)			
		61 to 70 points	7 (seven) (D)			
		71 to 80 points	8 (eight) (C)			
		81 to 90 points	9 (nine) (B)			
		91 to 100 points	10 (ten) (A)			

19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions
20.	**Language of teaching / study**	Macedonian language
21.	**Method of monitoring the quality of teaching**	Self-evaluation

22. **Literature**

Required literature

Order No.	Author	Title	Publisher	Year
1.	R. Pavletic	Combustion: theoretical base, fuel, engineering use - Ljubljana - R. Slovenia	Faculty of Mechanical Engineering - Ljubljana, R. Slovenia	1996
2.	J.Kames	Alternative engine for cars	BEN - Technická literatura - Praha	2004
3.	Zl. Sovreski	Technology Fuel Cells: features and opportunity for application in JGPP in the Republic. Macedonia	University Ss. Clement Ohridski - Bitola	2003

22.1.

Additional literature

Order No.	Author	Title	Publisher	Year
1.	E. L. Keating	Applied combustion – New York [etc.]	Mechanical enginnering, Marcel Dekker	1993
2.	K. Kordesch, G.	K. Kordesch, G.	K. Kordesch, G.	K. Kordesch, G.
3.				

22.2.

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**Basics of thermotechnical machines**
2.	**Code**	2MF102512
3.	**Study Program**	Transport, Organization and Logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica

5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	third/ fifth	7.	**Number of ECTS credits**	6
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):**(Introducing students to basic thermo technic machines, steam boilers, thermal turbines, steam turbines,heating devices and air conditioning, refrigeration plants, Internal combustion engines).				
11.	**Contents of the course program:** 1. Types of energy; energy sources; steam boilers; Thermal balance and heat losses; Useful coefficient; construction of steam boilers; Thermal turbines and plants. 2.Elements and classification of steam turbines plants; Heating and cooling; ventilation plants; Refrigerating plants; Engines cycles at internal combustion engines)				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	120 hours			
14.	**Distribution of available time**	2+1+1			

15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)

19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions		
20.	**Language of teaching / study**		Macedonian language		
21.	**Method of monitoring the quality of teaching**		Self-evaluation		
22.	**Literature**				
	Required literature				
	Order No.	Author	Title	Publisher	Year
22.1.	1.	S. Armenski	Termotehnich machinery and equipment	University "Ss. Cyril and Methodius " Skopje	1995
	2.				
	3.				
	Additional literature				
	Order No.	Author	Title	Publisher	Year
22.2.	1.	I. Petreski	Steam turbines	University "Ss. Cyril and Methodius " Skopje	2004
	2.	M. Dimitrovski	Engines internal combustion	University "Ss. Cyril and Methodius " Skopje	2001
	3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Engineering economics**			
2.	**Code**	2MF107012			
3.	**Study Program**	Production Engineering /Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/fifth	7.	**Number of ECTS credits**	4

8.	**Professor (s)**		Assi. Prof. Misko Dzidrov, Ph.D	
9.	**Requirements for enrollment the Course**		No	
10.	**Purposes of the curriculum (competencies):** Learning in the field of engineering economic, the methods and analysis, as well as making investment decisions among project alternatives. Strengthening analytical skills related to financial information.			
11.	**Contents of the course program:** 1. Introduction to the economic methods applied in engineering 2. Decision-making methods 3. Studying of cash flow concepts 4. Rate of return, return of investments, 5. Financial indicators for profitability, effectiveness, efficiency, 6. Cost analysis, revenue, profits, 7. Balance sheet and income statement 8. Studying of basic economic value analysis (present value, annual analysis, incremental analysis, cost/ benefit analysis) 9. Methods for calculating of depreciation 10. Techniques for estimating of equipment replacement 11. Making investment decisions among project alternatives 12. Learning techniques for preparation of a business plan and feasibility study			
12.	**Learning methods:** Interactive teaching, exercises, individual and/or team work on projects, consultations and individual learning			
13.	**Total available time**		120 hours	
14.	**Distribution of available time**		2 +1 +1	
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	
17.	**Method of assessment**			

	17.1.	**Tests / oral exams**		70
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10
	17.3.	**Activity and participation**		20
18.	**Assessment Criteria (points / score)**		to 50 points	5(five)(F)
			from 51 to 60 points	6(six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)
			from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**				
		Required literature			
		Order No.	Author	Title	Publisher	Year
	22.1.	1.	V. Gecevska	Engineering Economics	Faculty of Mechanical Engineering, UKIM, Skopje	2010
		2.	D. Bojadzhioski	Enterprise Economics	Economic Faculty Skopje	1999
		3.				
		Additional literature			
		Order No.	Author	Title	Publisher	Year
	22.2.	1.	Michael R. Baye	Managerial Economics & Business Strategy	McGraw-Hill College	2007
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**City public transport**
2.	**Code**	2MF109712
3.	**Study Program**	Transport, Organization and Logistics

4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/fifth	7.	**Number of ECTS credits**	4
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** (Introducing students to the organization of work in the public urban passenger transport, Acquired competence: ability to organize and to ensure the operation of public passenger transport in urban areas, introducing students to the methodology of planning or preparation of studies for public urban passenger transport. Acquired competence: Ability to approach to the preparation of studies or graduate for public urban passenger transport).				
11.	**Contents of the course program:** Role and importance ofcity public transport today, Types and classification of public city transport. Flexible city public transport, organization of city public passenger transport in today's cities (ownership, regulation, financing), line transport (types and characteristics of lines and networks ofcity public passenger transport). Subsystem of transportation demand. Subsystem of transportationoffer, Indicators of utilization level and work performed on the line of city public passenger transport. Creating timetable, disruption of timetable and measures for removing these disruptions, production volume and productivity indicators, tariff systems and billing systems, Innovative Technologies in city public passenger transport, marketing in city public passenger transport, traffic in today's urban areas, urban Planning and city public passenger transport planning, Methodology forcity public passenger transportplanning, problems, objectives and limitations, analysis of the environmental impacts of traffic, data collection and analysis and evaluation of the condition, Forecast models for transport needs and calibration models, Types and features of city public passenger transport, Innovative technologies in city public passenger transport, Quality of service in city public passenger transport,bill of costs,evaluation and alternative.				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	120 hours			
14.	**Distribution of available time**	2+1+1			
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises,**	1	

			e-exams, preparation of independent seminar work	
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10
	17.3.	**Activity and participation**		20
18.	**Assessment Criteria (points / score)**		to 50 points	5(five)(F)
			from 51 to 60 points	6(six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)
			from 91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22. **Literature**

22.1. **Required literature**

Order No.	Author	Title	Publisher	Year
1.	V. Vuchic	URBAN TRANSIT: Operations, Planning and Economics,	John Willey & Sons,Inc, USA	2005
2.	Zl.Sovreski	Technology Fuel Cells: features and opportunity for application in JGPP in the Republic. Macedonia	University Ss. Clement Ohridski - Bitola	2003
3.				

22.2. **Additional literature**

Order No.	Author	Title	Publisher	Year
1.	V. Vuchic	URBAN TRANSIT: Operations, Planning and	John Willey & Sons,Inc, USA	2005

				Economics,		
		2.	N. Krstanosvki	Public City Transport	University "Ss. Cyril and Methodius " Skopje	2001
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Theory of movement of motor vehicles**			
2.	**Code**	2MF109212			
3.	**Study Program**	Transport organization and logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica Department of Transport organization and logistics			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/sixth	**7.**	**Number of credits**	8
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, PhD			
9.	**Requirements for enrollment the Course**	/			
10.	**Purposes of the curriculum (competencies):** Introduction to the longitudinal dynamics - performance, and transverse dynamics - stability and handling of motor vehicles.				
11.	**Content of the course program:** 13. Basic terms, types of wheels and rolling, coefficient of rolling resistance, coefficient of adhesion, towing characteristic of the wheel, forces which act on motor vehicles,vehicle weights and surface reactions, resistance, traction power, boundary conditions of movement, differential equation of movement, differential equation with rapidly moving vehicle, units of motor vehicles, external feature of the drive unit, pulling- dynamic properties of vehicles with mechanical and hydraulic transmission gearbox, traction diagram, Dynamic Features, hauling properties of the vehicles, biggest slowdown, minimum braking time, minimum and total braking time, handling and stability of the vehicle, vehicles with rigid wheels, Aerodynamic Stability, Transverse and longitudinal stability characteristics of fuel efficiency, Consumer exploitation, Methods of determination.				
12.	**Learning methods:** lectures, tutorials				

13.	**Total available time**		216	
14.	**Distribution of available time**		3+2+2 / per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of activities**	**16.1.**	**Project tasks**	1hours
		16.2.	**Individual tasks**	1hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Д. Данев	Теорија на движењето на моторните возила	Машински факултет Скопје	
		2.	М. Ќосевски	Збирка задачи од теорија на движење на моторните возила	Машински факултет Скопје	
		3.	Драги Данев, М. Ќосевски	Упатство за изработка на влечна пресметка	Машински факултет Скопје	

				на моторните возила		
		Additional literature				
	22.2.	**No.**	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Operations Research**			
2.	**Code**	2MF106312			
3.	**Study Program**	Transport, organization and logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica Department of transport, organization and logistics			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third / sixth	**7.**	**Number of credits**	6
8.	**Professor (s)**	Assi. Prof. Nikolinka Doneva, PhD			
9.	**Requirements for enrollment the Course**	no			
10.	**Purposes of the curriculum (competencies):** Introduction to linear programming and its graphical interpretation, simplex method, a method of solving problems in the field of transport.				
11.	**Content of the course program:** 1.Linear programming; 2. Dual problem; 3. Transportation problem; 4. Network planning techniques; 5.Inventory management; 6. Waiting lines; 7. Random processes, 8. Models waiting lines; Decision tree; 10. Game theory; 11. Multifactor decision. 12. Method of analytic hierarchy process				
12.	**Learning methods:**				
13.	**Total available time**	156 hours			
14.	**Distribution of available time**	2+2+1/ per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	

16.	**Other forms of activities**	**16.1.**	**Project tasks**	Hours
		16.2.	**Individual tasks**	1 Hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	DanijelaTadic PhD, MilijaSuknovic PhD, GordanaRadojevic M.A., VukicaJovanovic	Operacionaistrazivanja	Izdavackicentarzaindustriskimenadzmentplus, Krusevac	2007
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Project Management**			
2.	**Code**	2MF107112			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip. Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/fifth	7.	**Number of ECTS credits**	4
8.	**Professor (s)**	Assi. Prof. Misko Dzidrov, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** Introduction to the practice of good Project Management. Learning how to identify and schedule project resources, understanding project flowcharts. Understanding and producing critical path planning and evaluation reports. Introduction to important issues of staff selection and team management are also covered.				
11.	**Contents of the course program:** 1. What is a project and project management 2. Defining the tasks, defining the roles of the project manager and his team 3. Team work for project teams 4. Defining the project 5. Network planning 6. Estimating the activities 7. Defining calendars and resource availability. 8. Determining critical paths - PERT and GANTT diagrams 9. Preparing a project plan 10. Controlling schedule, budget and scope 11. Management of the project 12. Evaluating and reporting on project performance				
12.	**Learning methods:** Interactive teaching, exercises, individual and/or team work on projects, consultations and self-study.				
13.	**Total available time**	120 hours			
14.	**Distribution of available time**	2 +1 +1			
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching,**	2	

			e-teaching	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
		Required literature				
		Order No.	Author	Title	Publisher	Year
	22.1.	1.	M. R. Djuricic, R. Bojkovic	Project Management	ICIM +	2008
		2.				
		3.				
		Additional literature				
		Order No.	Author	Title	Publisher	Year
	22.2.	1.	V. Donev, R. Polenakovik	Project Management and MS Project	Sistem+	2001
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**					
1.	**Title of the Course**	**Dynamics of motor vehicles**				
2.	**Code**	2MF109912				
3.	**Study Program**	Transport, Organization and Logistics				
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip, Faculty of Mechanical Engineering -Vinica				
5.	**Cycle (first, second and third cycle)**	First cycle				
6.	**Academic year / semester**	3/sixth	7.	**Number of ECTS credits**	4	
8.	**Professor (s)**	Assi. Prof. Elenior Nikolov, PhD				
9.	**Requirements for enrollment the Course**	Internal combustion engines				
10.	**Purposes of the curriculum (competencies):** Introduction to the dynamics of motor vehicles, drive, driving resistance, driving characteristic of vehicles, brake systems, elasticity, comfort and safety criteria, the equations of motion, transfer functions, linear model of vehicle, driving management, tires					
11.	**Contents of the course program:** Vehicle dynamics - definition, drive, Driving resistance, Driving characteristic of the vehicle,Brake systems, Elasticity, Comfort and safety criteria, The equations of motion, Transfer functions, SMER dynamics,Linear model of vehicles, Static management, Dynamics management, Tilting of vehicle, Aimed dynamics, Newton's method, D'Alambert's method, Virtual work, Lagrange equations, Linear model of vehicle management, Tires.					
12.	**Learning methods:** Lectures, Analitical exercises, individual and team projects, consultations.					
13.	**Total available time**	120 hours				
14.	**Distribution of available time**	2 +1 +1				
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2		
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1		
16.	**Other forms of activities**	16.1.	**Project tasks**			
		16.2.	**Individual tasks**	1		
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**	70 points			
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points			
	17.3.	**Activity and participation**	20 points			

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian language	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

22.1. **Required literature**

Order No.	Author	Title	Publisher	Year
1.	F.Frantisek	Dinamika na vozikla	Fakulta dopravní, ČVUT, Praha	2008
2.	F.Frantisek	Avtomobilov tehnicki priracnik, Prague 2003	Avtomobilov tehnicki priracnik, Prague	2003
3.	J. First a kol., Zkoušeníautomobilů a motocyklů, Fakulta dopravní, ČVUT, Praha 2008	Zkoušeníautomobilů a motocyklů	Fakulta dopravní, ČVUT, Praha 2008	2008

22.2. **Additional literature**

Order No.	Author	Title	Publisher	Year
1.				
2.				
3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Supply chain management**
2.	**Code**	2MF106412
3.	**Study Program**	Transport, Organization and Logistics

4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	1st cycle			
6.	**Academic year / semester**	3rd / 6th	**7.**	**Number of credits**	4
8.	**Professor (s)**	Professor Boris Krstev,Ph.D			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Introduction to the tools for managing the supply chain.				
11.	**Content of the course program:** 1. Introduction to supply chain management 2. Supply chain management in industrial companies 3. Supply of raw materials 4. Managing transport 5. Managing repositories 6. Order Process 7. Optimizing orders 8. Management of raw materials in the production 9. Optimizing the production process 10. Delivery Process 11. Optimizing the delivery process 12. Managing inventory.				
12.	**Learning methods:** Lecturing, exercises				
13.	**Total available time**	156			
14.	**Distribution of available time**	2+2+1/ per week			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2	
16.	**Other forms of studying activities**	**16.1.**	**Project tasks**	hours	
		16.2.	**Individual tasks**	1 hours	

		16.3.	**Home learning**	hours
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		**up 50 points**	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**				
	22.1.	**Required literature**			
		No.	**Author**	**Title**	**Publisher**	**Year**
			Douglas M. Lambert, James R Stock, Lisa M ellram	Fundamentals of logistics management		2000
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**Maintenance of motor vehicles**
2.	**Code**	2MF109312
3.	**Study Program**	Transport, Organization and Logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev-Stip Faculty of mechanical engineering -Vinica
5.	**Cycle (first, second and third cycle)**	First cycle

6.	**Academic year / semester**		Fourth / seventh	7.	Number of ECTS credits	8
8.	**Professor (s)**		Assi. Prof. Elenior Nikolov, PhD			
9.	**Requirements for enrollment the Course**		None			
10.	**Purposes of the curriculum (competencies):** Students have to gain theoretical and practical knowledge in the issue of maintenance of motor vehicles;					
11.	**Contents of the course program:** Vehicles as objects of maintenance, parameters of technical maintenance mode, the elements of the technical program, facilities for maintenance, organization of working places, maintenance technology, integrated logistics, support to maintenance process, diagnostic elements etc.					
12.	**Learning methods:** Lectures, Analitical exercises, individual and team projects, consultations.					
13.	**Total available time**		216 hours			
14.	**Distribution of available time**		3 +2 +2			
15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**		3	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**		2	
16.	**Other forms of activities**	16.1.	**Project tasks**		1	
		16.2.	**Individual tasks**		1	
		16.3.	**Home learning**			
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**			70	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**			10	
	17.3.	**Activity and participation**			20	
18.	**Assessment Criteria (points / score)**		to 50 points		5(five)(F)	
			from 51 to 60 points		6(six) (E)	
			from 61 to 70 points		7 (seven) (D)	
			from 71 to 80 points		8 (eight) (C)	
			from 81 to 90 points		9 (nine) (B)	
			from 91 to 100 points		10 (ten) (A)	
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions			
20.	**Language of teaching / study**		Macedonian			
21.	**Method of monitoring the quality of teaching**		Self-evaluation			
22.	Literature					

	22.1.	Required literature				
		Order No.	Author	Title	Publisher	Year
		1.	Papic, V.	Introduction to Technology maintenance of transport vehicles	Traffic Engineering, University of Belgrade,	1995
		2.	Duboka, D.	Maintenance of motor vehicles	Faculty of Mechanical Engineering, University of Belgrade	1986
		3.	Jankovic, D.	Motor vehicles	Faculty of Mechanical Engineering, University of Belgrade	1993
	22.2.	**Additional literature**				
		Order No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Quantitative methods in business decision making**			
2.	**Code**	2MF106512			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev" - Stip Faculty of Mechanical Engineering			
5.	**Cycle (first, second and third cycle)**	1st cycle			
6.	**Academic year / semester**	Fourth / seventh	**7.**	**Number of credits**	8
8.	**Professor (s)**	Professor Zoran Despodov, PhD			
9.	**Requirements for enrollment the Course**	Mathematics1 and Mathematics 2			
10.	**Purposes of the curriculum (competencies):** Introduction to quantitative methods of business decision making and its application to solve specific problems**.**				

11.	**Content of the course program:** Fundamentals of the theory of decision-making, analysis of the decision-making process, risk analysis, new approaches to the treatment of uncertainty, Multifactor decision making, group decision-making.			
12.	**Learning methods:** Lectures with computer presentation, discussions, simulations, study of practical cases, and preparation of seminar paper.			
13.	**Total available time**		216	
14.	**Distribution of available time**		3+2+2/ per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	3
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	**16.1.**	**Project tasks**	1 hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Zoran Despodov	Teorija na odluki (internal script)	FPTN - Shtip	2009

		Additional literature				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Cupic,M,.Tummala,V.M .R,. Suknovic,M	Odlucivanje: Formalni pristup	FON, Beograd	2003
	22.2.	**2.**	Manasijevič,D., Živković,D.	Zbirka zadataka iz teorije odlučivanja	TF-Bor	2005
		3.	Cupic,M. Suknovic,M.	Višekriterijumsko odlučivanje	Univerzitet Braća Karić	1994

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Modern transport technologies**			
2.	**Code**	2MF109412			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Fourth/seventh	7.	**Number of ECTS credits**	6
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):** (Introducing the students to modern Technologies - Integrated Transport Systems)				
11.	**Contents of the course program:** Technological change in the modern transport systems, the role and importance of certain types of transport in traffic systems, Technology reserves in transportation, logistics as a modern concept for the realization of transport processes, coordination and cooperation in transport, conveyor chains, Automatic Management, Transportation Management System procedure in the carriage of goods in transport, freight distribution system units ifor distribution of goods, packing products for distribution during transport, pallet transport system, Basic qualitative changes in the area of transport in development of transport technologies, technological and economic characteristics of the particular branches in traffic, Basic indicators of the production capabilities of certain branches in transport, Basic characteristics of certain types of traffic				
12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**	156 hours			
14.	**Distribution of available time**	2+2+1			

15.	**Forms of teaching / learning activities**	15.1.	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22. **Literature**

Required literature

Order No.	Author	Title	Publisher	Year
22.1. 1.	R. Perisic,	Contemporary technology I. Transport integral systems transport	University of Belgrade traffic Faculty Belgrade	1994
2.	B. Bogovic	Economics transport system	Economics traffic system Zagreb	1984

		3.	I. Markovic	Contemporary technology transport	Informer, Zagle1998. 1998	1998
	22.2.	**Additional literature**				
		Order No.	Author	Title	Publisher	Year
		1.	R. Perišić	Containerization in transport	Traffic Faculty Belgrade	1999
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Electronic Data Interchange**			
2.	**Code**	2MF107312			
3.	**Study Program**	Transport, organization and logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	1st cycle			
6.	**Academic year / semester**	3rd / 7th	**7.**	**Number of credits**	4
8.	**Professor (s)**	Assi. Prof. Ljubisha Nikolovski			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Introducing the types of data processing methods, application areas of ERP, ERP Architecture.				
11.	**Content of the course program:** 1. Basic terms and definition; 2. Types of data processing; 3. Areas of applying EDI; 4. Application and advantages of the EDI application; 5.RE-engineering of business procedures; 6. Architecture and stages of development of EDI; 7. Architecture and development phases of the EDI; 8. Conceptual model of open EDI systems; 9. Electronic operation; 10. Standards in the implementation of EDI; 11. Intermediaries in EDI.				
12.	**Learning methods:** Lecturing, exercises				
13.	**Total available time**	120			
14.	**Distribution of available time**	2+1+1/ per week			

15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of studying activities**	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours

17.	**Method of assessment**		
	17.1.	**Tests / oral exams**	70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points
	17.3.	**Activity and participation**	20 points

18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Z. Nikolik	Elektronska razmena podatka	FIM Krusevac	2007
		2.				
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first/second/third cycle studies**					
1.	**Title of the Course**	**Safety in the traffic**				
2.	**Code**	**2MF110112**				
3.	**Study Program**	**Transport, Organization and Logistics**				
4.	**Organizer of the study program (unit or institute, Faculty, department)**	**University "Goce Delcev"- Stip Faculty of Mechanical Engineering -Vinica**				
5.	**Cycle (first, second and third cycle)**	**First cycle**				
6.	**Academic year / semester**	**First / second 2012/13**	**7.**	**Number of ECTS credits**	**6**	
8.	**Professor (s)**	**Ass. Prof. Zlatko V. Sovreski, Ph.D**				
9.	**Requirements for enrollment the Course**	**No**				
10.	**Purposes of the curriculum (competencies): Students are acquainted with the safety in the traffic**					
11.	**Contents of the course program: Movement in road turns, bypassing, overtaking vehicle, braking process, active and passive safety, time allocation, Types of accidents, records and statistics of accidents, damage from traffic accidents, methods of training drivers in the U.S. and EU, Service for traffic Safety in auto transport companies, methods of work and equipment inspection teams at occurrence of accidents, assistance and transport of the injured in traffic accidents, analysis of accidents, prevention of traffic accident, Procedure for drafting skilled opinion, Making expertise using modern software packages**					
12.	**Learning methods Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.**					
13.	**Total available time**	**120 hours**				
14.	**Distribution of available time**	**2+1+1**				
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	**2**		
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	**1**		
16.	**Other forms of activities**	**16.1.**	**Project tasks**			
		16.2.	**Individual tasks**	**1**		
		16.3.	**Home learning**			

17.	**Method of assessment**				
	17.1.	**Tests / oral exams**		**70 points**	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		**10 points**	
	17.3.	**Activity and participation**		**20 points**	
18.	**Assessment Criteria (points / score)**		**up 50 points**	**5 (five) (F)**	
			51 to 60 points	**6 (six) (E)**	
			61 to 70 points	**7 (seven) (D)**	
			71 to 80 points	**8 (eight) (C)**	
			81 to 90 points	**9 (nine) (B)**	
			91 to 100 points	**10 (ten) (A)**	
19.	**Signature requirement and passing the final exam**		**60% success from all activities before exam i.e. 42 points from two mid-term exams, seminar paper, attendance of lectures and exercises**		
20.	**Language of teaching / study**		**Macedonian**		
21.	**Method of monitoring the quality of teaching**		**Self-evaluation**		

22. Literature

22.1. Required literature

Order No.	Author	Title	Publisher	Year
1.	**B. Ristic**	**Safety for auto transport enterprises**	**Student word, Skopje 1994**	**1994**
2.	**Zlatko V. Sovreski**	**Traffic technical expertise in road traffic- Expertise (Skilled findings and opinions)**	**Original practical examples road traffic Republic of Macedonia**	**1994 - 2012**
3.	**R..Dragan SF Beograd**	**Safety traffic 1,2,3 traffic**	**Faculty Belgrade**	**1998**

22.2. Additional literature

Order No.	Author	Title	Publisher	Year
1.	**B.Ristic**	**Safety traffic**	**University Ss. Clement Ohridski technical**	**2002**

					Faculty Bitola	
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Transport in containers**			
2.	**Code**	2MF110112			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev"- Stip, Faculty of Mechanical Engineering -Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	Third/fifth	7.	**Number of ECTS credits**	4
8.	**Professor (s)**	Assi. Prof. Zlatko V. Sovreski, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies):**Introduction to transport of goods in containters				
11.	**Contents of the course program:** Introductory concepts of transport in containers, Types of container transport, Meaning of containers transport compared to the classical method, containers, types, purpose, computation, choice, labeling, packaging and insurance of products in containers,Road containerterminal, Railway container terminal,Port container terminal, Infrastructure and capacity of terminals, Technology for storage of container terminals,organization and application of transport containters, Techno-economic effects of the use of transport containters				

12.	**Learning methods:** Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	**Total available time**		120 hours		
14.	**Distribution of available time**		2+1+1		
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1	
16.	**Other forms of activities**	**16.1.**	**Project tasks**		
		16.2.	**Individual tasks**	1	
		16.3.	**Home learning**		
17.	**Method of assessment**				
	17.1.	**Tests / oral exams**		70 points	
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points	
	17.3.	**Activity and participation**		20 points	
18.	**Assessment Criteria (points / score)**		**up 50 points**	5(five) (F)	
			51 to 60 points	6(six) (E)	
			61 to 70 points	7 (seven) (D)	
			71 to 80 points	8 (eight) (C)	
			81 to 90 points	9 (nine) (B)	
			91 to 100 points	10 (ten) (A)	
19.	**Signature requirement and passing the final exam**		60% of pre-exam activities i.e. 42 points from two mid-term exams , seminar paper, attendance of lectures and exercises		
20.	**Language of teaching / study**		Macedonian language		
21.	**Method of monitoring the quality of teaching**		Self-evaluation		

22.	**Literature**					
		Required literature				
		Order No.	Author	Title	Publisher	Year
	22.1.	1.	Lj. Štipanić	Mechanization port and terminals	Istar copies Pula	1982
		2.	B. Dragović	B. Dragović Transport Dock	Transport Dock Port transportation,	1988

					maritime college Kotor 1988	
		3.	J. Vladic	Mechanization and technology reloading, FTN	FTN Novi Sad	2005
	22.2.	**Additional literature**				
		Order No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Product Life Cycle Management**			
2.	**Code**	2MF107412			
3.	**Study Program**	Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	1st cycle			
6.	**Academic year / semester**	4th / 7th	**7.**	**Number of credits**	4
8.	**Professor (s)**	Professor Mikolaj Kuzinovski, PhD			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Study of the basic components and functions of product lifecycle management and an introduction to the advantages of the concept that ensures the sustainability of the economic, social and environmental aspects.				
11.	**Content of the course program:** 1. Definition and Concept of Product lifecycle management (PLM-Product Lifecycle Management); 2. Data and product information; Information Model; 3. Concept of the life cycle, its sustainability and relations with sustainable development;				

	4. Systems for product lifecycle management (functionality, using different organizational units in the company, product development, engineering, manufacturing, sales, marketing, procurement, delivery); 5. Information lifecycle management platform; 6. Information system for PLM; 7. Integration with other applications; 8. Challenges for companies and business benefits from the introduction of PLM; 9. Challenges for the manufacturing company; 10. Challenges for a service company; 11. Strategy of product lifecycle management as part of business strategy; 12. E-Business and PLM. PLM and PDM tools.			
12.	**Learning methods:** Lecturing, exercises			
13.	**Total available time**		120	
14.	**Distribution of available time**		2+1+1/ per week	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of studying activities**	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		**up 50 points**	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)

19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions
20.	**Language of teaching / study**	Macedonian
21.	**Method of monitoring the quality of teaching**	Self-evaluation

22.	**Literature**					
	22.1.	**Required literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Saaksvuori A., Immonen A.	Product Lifeycle Management	Springer-Verlag	2008
		2.	Stark, J.	PLM: 21st century Paradigm for Product Realisation	Springer-Verlag	2004
		3.				
	22.2.	**Additional literature**				
		No.	**Author**	**Title**	**Publisher**	**Year**
		1.	Bernard A., Tichkiewitch S.	Design of Sustainable Product Life Cycles	ASpringer-Verlag	2008
		2.	Grieves, M.	PLM: Driving the Next Generation of Lean Thinking.	McGraw-Hill.	2009
		3.				

Annex No.3	**Program of the Course - first cycle studies**				
1.	**Title of the Course**	**Quality management**			
2.	**Code**	2MF106612			
3.	**Study Program**	Production Engineering / Transport, Organization and Logistics			
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University "Goce Delcev" - Stip Faculty of Mechanical Engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	1st cycle			
6.	**Academic year / semester**	4th / 3rd	**7.**	**Number of credits**	6
8.	**Professor (s)**	Professor Mikolaj Kuzinovski, PhD			
9.	**Requirements for enrollment the Course**	none			
10.	**Purposes of the curriculum (competencies):** Quality management in the modern organization. Customer loyalty. Creating a competitive market organizations. Role, importance and implementation of the ISO 9001 family of standards.				

11.	**Content of the course program:** 1. Introduction to quality management (quality as a strategic goal and utility organizations for competitiveness). 2. Quality management system (general requirements relatied to the ISO 9001:2008 Quality Management System). 3. Management resposibility (item 5 of the standard ISO 9001:2008). 4. Resource management (item 6 of the standard ISO 9001:2008). 5. Production (item 7.1, 7.2 and 7.3 of the standard ISO 9001:2008). 6. Realization of the product (see section 7.4, 7.5 and 7.6 of the standard ISO 9001:2008). 7. Measurement, analysis and improvement (item 8 of the standard ISO 9001:2008). 8. Introducing the standard ISO 17025, competence of testing and calibration laboratories. 9. Introduction to ISO 27001, Information Security Management Systems. 10. Introduction to ISO 14001, Environmental Management. 11. Introducing the standard OHSAS 18001 health and safety management. 12. Introduction to ISO 22000 Food Safety Management System.			
12.	**Learning methods:** Lecturing, exercises			
13.	**Total available time**		156	
14.	**Distribution of available time**		2+2+1 / **per week**	
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	2
16.	**Other forms of studying activities**	**16.1.**	**Project tasks**	hours
		16.2.	**Individual tasks**	1 hours
		16.3.	**Home learning**	hours
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points

	17.3.	**Activity and participation**	20 points
18.	**Assessment Criteria (points / score)**	**up 50 points**	5(five) (F)
		51 to 60 points	6(six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**	60% of pre-exam activities or minimum 42 points from 2 midterm exams, project activities and attending of lectures and discussions	
20.	**Language of teaching / study**	Macedonian	
21.	**Method of monitoring the quality of teaching**	Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	Author	Title	Publisher	Year
		1.	Standardization institute of RM	ISO 17025, ISO 27001, ISO 14001, ISO 22000, ISO 18001	ISRM	
		2.	Standardization institute of RM	Quality Management Systems – Requests (Identical to EN ISO 9001:2008)	ISRM	2010
		3.	Prof. d-r. Sc. Hrvoje Skoko	Upravljanje kvalitetotm	Sinergija, Zagreb	2000
		4.	David Hoyle	Quality Systems Handbook (4th edition)	Butterworth-Heinemann, A member of the Reed Elsevier plc group	2001
	22.2.	**Additional literature**				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**	
1.	**Title of the Course**	**Occupational Safety and Health**
2.	**Code**	2FP123212
3.	**Study Program**	Production Engineering / Transport, Organization and Logistics

4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica			
5.	**Cycle (first, second and third cycle)**	First cycle			
6.	**Academic year / semester**	IV/VIII semester	7.	Number of credits	6
8.	**Professor (s)**	Assistant Professor Dejan Mirakovski, PhD			
9.	**Requirements for enrollment the Course**	Enrolled semester			
10.	**Purposes of the curriculum (competencies):** Introducing to the fundamental provisions of the Occupational Safety and Health Law, hazards and risks on the workplace.				
11.	**Content of the course program:** 1. Introduction 2. Legislation in the field of Occupational Safety and Health 3. Role of International Labour Organization 4. Occupational Risk Assessment 5. Ergonomics 6. Injuries at work, etiological factors for injuries and occupational diseases 7. Gasses in working environment 8. Dust and measurement methods of dust in the working environment 9. Fires, exogenous, endogenous fires, fire prevention and fire-fighting procedures 10. Explosions, explosive mixtures of gas and air, technical protection measures 11. Microclimate conditions, noise and vibrations in working environment 12. Personal Protective Equipment, Rescue services and plans for defense and rescue				
12.	**Learning methods:** – Lectures, – theoretical and practical exercises, – e-teaching, – seminar work – consultation				
13.	**Total available time**	120 hours			
14.	**Distribution of available time**	2+1+1			
15.		15.1.	**lectures / theoretical - contact teaching, e-teaching**		2

	Forms of teaching / learning activities	15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1
16.	**Other forms of activities**	16.1.	**Project tasks**	
		16.2.	**Individual tasks**	1
		16.3.	**Home learning**	

17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		**up 50 points**	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% success of all pre-exam activities i.e. 42 points from two mid-term exams , seminar work and presence on lectures and exercises	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
		Required literature				
	22.1.	No.	Author	Title	Publisher	Year
		1.	Dejan Mirakovski Marija Hadzi-Nikolova	Occupational Safety and Health ISBN 978-608-4504-98-6	University Goce Delcev	2012
		2.				
		3.				
		Additional literature				
		No.	Author	Title	Publisher	Year
	22.2.	1.	Bengamin O Ali	Fundamentals principles of Occupatinal Safety and Health	International Labour Office Geneva	2011
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**					
1.	**Title of the Course**	**Intelligent transport systems**				
2.	**Code**	2MF110212				
3.	**Study Program**	Transport organization and logistics				
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University Goce Delcev - Stip Faculty of mechanical engineering-Vinica Department of Transport organization and logistics				
5.	**Cycle (first, second and third cycle)**	First cycle				
6.	**Academic year / semester**	Fourth / eighth	**7.**	**Number of credits**	4	
8.	**Professor (s)**	Assi. Prof. Angel Tasevski, PhD				
9.	**Requirements for enrollment the Course**	/				
10.	**Purposes of the curriculum (competencies)**: (Introducing the students to the area as a special preparation for attendance of the studies)					
11.	**Content of the course program:** 13. Road traffic situation and development as a basis for the application of modern transport systems. .Development of modern transport systems in the world and in our country. Modern transport infrastructure and technical equipment as the basis in function of intense and optimal development of modern transport systems by types of transport. Perspectives of the development of modern transport systems.					
12.	**Learning methods**: Lectures, exercises, consultations, tutorials					
13.	**Total available time**	120 hours				
14.	**Distribution of available time**	2+1+1 / per week				
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2		
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1		
16.	**Other forms of activities**	**16.1.**	**Project tasks**	hours		
		16.2.	**Individual tasks**	1 hours		
		16.3.	**Home learning**	hours		
17.	**Method of assessment**					
	17.1.	**Tests / oral exams**	70 points			
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**	10 points			

	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		**up 50 points**	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% success from all pre-exam activities i.e. 42 points from two mid-term exams, seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		No.	Author	Title	Publisher	Year
		1.	R.Perisic	Modern transport technology 1	Faculty of Transport Beograd	1988
		2.	R.Perisic	Container transport	Faculty of Transport Beograd	1999
		3.	I.Markovic	Modern transport technology	Informator Zagreb	1998
	22.2.	**Additional literature**				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Annex No.3	**Program of the Course - first cycle studies**

1.	**Title of the Course**	**Marketing Management**
2.	**Code**	2MF107512
3.	**Study Program**	Transport, Organization and Logistics
4.	**Organizer of the study program (unit or institute, Faculty, department)**	University “Goce Delcev”- Stip, Faculty of Mechanical Engineering -Vinica
5.	**Cycle (first, second and third cycle)**	First cycle

6.	**Academic year / semester**	Fourth/eighth	7.	**Number of ECTS credits**	4
8.	**Professor (s)**	Assi. Prof. Nikolinka Doneva, Ph.D			
9.	**Requirements for enrollment the Course**	No			
10.	**Purposes of the curriculum (competencies**): The aim of the course is to give students knowledge in the field of managing the marketing activities, marketing environment analysis and its dynamic and stimulating influence on the companies' work, marketing decisions which managers make, marketing planning, marketing tactics and marketing control.				
11.	**Contents of the course program:** 1. 21st Century Marketing, 2. Development of marketing strategies and plans 3. Market research and data collecting 4. Customer satisfaction, loyalty and value 5. Consumer Market Research 6. Business markets analysis 7. Market segmentations 8. Brand Positioning & Management 9. Competition strategies 10. Product strategy 11. Services Design and Management 12. Price Determination, Pricing Strategies				
12.	**Learning methods:** Interactive teaching, in-class exercises, individual and/or team work on projects, consultations and individual learning.				
13.	**Total available time**	120 hours			
14.	**Distribution of available time**	2 +1 +1			
15.	**Forms of teaching / learning activities**	**15.1.**	**lectures / theoretical - contact teaching, e-teaching**	2	
		15.2.	**theoretical and practical exercises, e-exams, preparation of independent seminar work**	1	
16.	**Other forms of activities**	**16.1.**	**Project tasks**		
		16.2.	**Individual tasks**	1	

		16.3.	**Home learning**	
17.	**Method of assessment**			
	17.1.	**Tests / oral exams**		70 points
	17.2.	**Seminars (paper / project - presentation: written and/or oral)**		10 points
	17.3.	**Activity and participation**		20 points
18.	**Assessment Criteria (points / score)**		**up 50 points**	5(five) (F)
			51 to 60 points	6(six) (E)
			61 to 70 points	7 (seven) (D)
			71 to 80 points	8 (eight) (C)
			81 to 90 points	9 (nine) (B)
			91 to 100 points	10 (ten) (A)
19.	**Signature requirement and passing the final exam**		60% success from all pre-exam activities i.e. 42 points from two mid-term exams, seminar paper, attendance of lectures and exercises	
20.	**Language of teaching / study**		Macedonian	
21.	**Method of monitoring the quality of teaching**		Self-evaluation	

22.	**Literature**					
	22.1.	**Required literature**				
		Order No.	Author	Title	Publisher	Year
		1.	K. Philip	Marketing Management	Data Pons Skopje	2009
		2.				
		3.				
	22.2.	**Additional literature**				
		Order No.	Author	Title	Publisher	Year
		1.	A. C. Suleska, B. Jakovski,	Marketing Management	Faculty of Economics Skopje	2008
		2.				
		3.				