No. 4

Course syllabus for First cycle studies					
1.	**Course title**	Fundamentals of Engineering Technology 1			
2.	**Code**	FTM1M4			
3.	**Study Program**	Clothing Design and Engineering			
4.	**Study program organizer (unit, institute, department, division)**	Faculty of Technology and Metallurgy			
5.	**Degree (first, second, third cycle)**	First			
6.	**Academic year / semester**	1 year 1 semester	7.	**Number of ECTS**	7
8.	**Instructors**	Prof. Dr. Irena Mickova			
9.	**Prerequisites for course enrollment**				
10.	**Objectives of the course syllabus (competences):** The objective of the course is for students to acquire basic knowledge of engineering graphics, computer graphics and mechanical engineering **Acquired skills (competences):**				
11.	**Course Content:** Engineering Graphics. Methods of expression and communication in engineering design. *Descriptive geometry. Technical drawing*. Classification of technical drawings. Types of lines and their applications. Technical lettering. Formats and scales. Standardization and standards. Projection drawing. Orthogonal projections. Basic, special, and simplified views. Intersections of objects. Solid modeling. Sections and breaks. Dimensioning. Surface finish symbols. Shop drawings. *Computer Graphics*. Application of computer graphics. Graphic standards. Graphic systems. Two-dimensional and three-dimensional graphics. Raster and vector computer graphics (classification of vectors and vector operations). Types of curves and curved surfaces. Drafting using AutoCAD. Mechanical Engineering. Machining materials. Mechanical properties of materials and testing. Loads, stresses and safety factors of machine components (static and dynamic material testing). Tolerances and tolerance fields. Connections of machine components (threaded connections). Pins. Keys. Couplings. Shafts and axles. Bushings. Bearings. Power transmission elements. Mechanical transmissions (belt drives, friction pairs, gear drives, chain drives). Elastic connection elements (springs). Simplified representation of machine components.				
12.	**Study methods:** Lectures, classroom and laboratory activities, office hours, project assignments (homework, research paper), and self-study (exam preparation).				
13.	**Total available time**		210 hours		
14.	**Allocation of available time**				
15.	**Teaching activities**	15.1	Lectures-theoretical teaching		30 hours
		15.2	Exercises (laboratory, practice classes), research paper, group activities		45 hours

16.	**Other types of activities**	16.1	Projects	20 hours
		16.2	Independent work	35 hours
		16.3	Self-study	80 hours

17.	**Grading system**		
	17.1.	Exams	80 points
	17.2.	Successfully completed lab and lecture activities	10 points
	17.3.	Homework and/or research paper	10 points

18.	**Grading criteria (points/grade)**	Up to 61 points	5 (five) (F)
		From 61 to 69 points	6 (six) (E)
		From 70 to 79 points	7 (seven) (D)
		from 80 to 89 points	8 (eight) (S)
		From 90 to 95 points	9 (nine) (B)
		from 95 to 100 points	10 (ten) (A)

19.	**Prerequisites for taking the final exam**	
20.	**Language in which lectures are conducted**	Macedonian and English
21.	**Method for monitoring the quality of lectures**	Anonymous survey of students

22. **LITERATURE**

22.1. Compulsory literature

No.	Author	Title	Publisher	Year
1.	B.Bhattacharyya, S.C. Bera	Engineering Graphics	I. K. International Pvt Ltd, New Delhi,	2009
2.	K Venugopal	*Engineering Drawing And Graphics + Autocad,*	New Age International (P) Ltd, New Delhi,	2007
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	M. B. Shah, Shah / Rana, B. C. Rana	Engineering Drawing	Copyright Dorling Kindersley (India) Pvt, Ltd,	2010
2.	R.L Timings	Basic Engineering Technology	Butterworth-Heinemann Ltd , Oxford	1995
3.				
4.				