COMPOSITE MATERIALS		
Faculty:	Faculty of Geosciences	
Name of study program:	**Materials and Metallurgy**	
Department:	**Materials and Metallurgy**	
Level:	MASTER	
The code of subject:	5	
Subject:	**COMPOSITE MATERIALS**	
Subject Status:	Elective	(Winter / Summer)
Semester:	I	(According to approved programe)
Total hours:	2+2	(According to approved programe)
ECTS:	4	(According to approved programe)
Schedule / Hall		
Academic year:		
Professor:	Afrim Osmani	
Assistants:	Lecturer:	Assistant
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Course description:	The course will address the main features composite materials, principles of fiber reinforcement, with metallic, polymeric matrices and different methods for the development of new composite materials
Course objectives:	To achieve fundamental understanding of the subject of structural mechanics of composite materials and applications in aerospace, civil, and mechanical engineering
Learning outcomes:	With successfully passing the exam of this course students will be trained to: - To understand and implement the dependence of properties from composition, structure and processes of manufactured all types of composite materials. - To analyze the mechanisms of damage, - Argue the application characteristics of composite materials.

Designed study plan:	Week	Lectures which will be held
	First week:	General Introduction
	Second week:	Basic Definitions and Classification of Composites Basic definitions,
	Third week:	Basic constituent materials in Composites
	Fourth week:	Behaviour of a Laminae-I
	Fifth week:	Tensorial concept and indicial notations
	Sixth week:	Behaviour of a Laminae-II
	Seventh week:	Laminated Composites-I
	Eighth week:	Laminated Composites-II
	Ninth week:	Strength and Failure theories
	Tenth week:	Design Concepts
	Eleventh week:	Fabrication/Manufacturing Techniques,processing, forming structural Shapes, ect
	Twelfth week:	Special Topics
	Thirteenth week:	Recycling of Composites

	Fourteenth week:	Engineering Applications
	Fifteenth week:	Civil Engineering Applications
Literature: Basic		1. R. Gibson, "Principles of Composite Materials Mechanics" CRC Press, 2012, 2. Rama M., "Materialet e veçanta", Ligjerata te autorizuar, FGJT, Mitrovice 2011. 3. Dilo T., "Shkenca dhe Teknologjia e Materialeve", Chapter 16, Tiranë 2012
Literature: Additional		1. E. Barbero,"Introduction to Composite Materials Design,"2nd Ed, CRC , 2011 2. A. K. Kaw, "Mechanics of Composite Materials," 2nd Edition, CRC Press, 2005. 3. Reddy, J. N,"Theory and Analysis of Elastic Plates and Shells,"CRC, 2nd ed, 2006.
Teaching methods		Interactive lectures, numerical and exercises. Tests during lectures

Contribution on student load

Activity	Hours	Days/week	Total
Lectures	2	15	30
Exercise theoretical/laboratory	2	15	30
Practice work	-	-	-
Contact with lecturer/consultations	-	-	-
Field exercises	2		2
Mid-terms, seminars	2	2	4
Homework	2	3	6
Individual time spent studying (at the library or home)	2	15	30
Final preparation for the exam	4	4	16
Time spent in evaluation (tests, quiz, final exam)	2	2	4
Projects, presentations, etc.	1	3	3
Total			125

Evaluation methods

Tests / Colloquia	2x15 (%)
Practical test during exercises	10 (%)
Seminar paper	10 (%)
Homework during the semester	10 (%)
Final exam 40 (%)	40 (%)

Academic policies and rules of conduct:	Regular attendance is required of students in lectures and exercises. Rules of conduct as quieting learning, access to the hall of learning time, turn off cell phones, etc. are also mandatory.