

Course Details										
Code					Academic Year			Semester		
MWT312					3		6			
Title						Т	Α	L	ECTS	
Composite Materials						2	1	1	6	
Language	German									
Level	Undergraduate		x	Graduate			P	ostgra	duate	
Department / Program	Materials Science a	and	Technolog	ЗУ						
Forms of Teaching and Learning	Face to face									
Course Type	Compulsory					Ele	ctive			х
Objectives	Students acquire of learn the classificat They develop the u classes.	tion	and prop	erties of com	posite	es as w	ell as va	arious J	orocess t	echnologies.
Content	Metal matrix com reinforced compo composites, prepre	site	s; directio	onal, random	n, İor	ng and	short	fibers	, particl	
Prerequisites										
Coordinator										
Lecturer(s)	Asist Prof.Dr. Çağla Söz									
Assistant(s)										
Work Placement	No									
Recommended or Required R	Reading									
Books / Lecture Notes	Autar K. Kaw, 2006, Mechanics Of Composite Materials, Second Edition, CRC Press.									
Other Sources	 Autar K. Kaw, 2006, Mechanics Of Composite Materials, Second Edition, CRC Press. Jones, R.M., 1975, Mechanics Of Composite Materials, Edward Brothers, 1998 Cristian Decolon, 2002, Analysis Of Composite Structures, Hermes Penton Ltd. Daniel Gay, Suong V. Hoa, Stephen V. Tsai, 2003, Composite Material Design And Applications, CRC Press. Laszlo P. Kollar, George S. Springer, 2003, Mechanics of Composite Structures, Cambridge University Press. 									
Additional Course Material										
Documents										
Assignments										
Exams										
Course Composition										



Mathemits with some some some some some some some some			00011010				
Engineering DesignIndecideIndecideIndecideSocial SciencesIndecideIndecideSecond SciencesIndecideIndecideNatural SciencesIndecideIndecideNatural SciencesIndecideIndecideReath SciencesIndecideIndecideReath SciencesIndecideIndecideAssessmentIndecideIndecideAssessmentIndecideIndecideAssignmentsIndecideIndecideAssignmentsIndecideIndecideAstendancesIndecideIndecideRecitationsIndecideIndecideFinal ExamIndecideIndecideRecitationsIndecideIndecideForesterIndecideIndecideRecitationsIndecideIndecideRecitationsIndecideIndecideRecitationsIndecideIndecideResentation / SemignmentsIndecideIndecideResentation / SemignmentsIndecideIndecideResentation / SemignmentsIndecideIndecideRecitationsIndecideIndecidePreparationIndecideIndecideRecitationsIndecideIndecideIndecideIndecideIndecideRecitationsIndecideIndecideIndecideIndecideIndecideIndecideIndecideIndecideRecitationsIndecideIndecideIndecideIndecideIndecideInde		nd Basic		%			
Social SciencesIndeximateIndeximateEducational SciencesIndeximateIndeximateNatural SciencesIndeximateIndeximateHealth SciencesIndeximateIndeximateHealth SciencesIndeximateIndeximateKatessementIndeximateIndeximateActiveIndeximateIndeximateActiveIndeximateIndeximateActiveIndeximateIndeximateAssignmentsIndeximateIndeximateAssignmentsIndeximateIndeximateAssignmentsIndeximateIndeximateAssignmentsIndeximateIndeximateAssignmentsIndeximateIndeximateFreind ExamIndeximateIndeximateProjectsIndeximateIndeximateAssignmentsIndeximateIndeximateAssignmentsIndeximateIndeximateSelf-StudyIndeximateIndeximatePresentation / SeminarIndeximateIndeximatePresentation / SeminarIndeximateIndeximatePresentation / SeminarIndeximateIndeximatePresentation / SeminarIndeximateIndeximatePresentation / SeminarIndeximateIndeximateProjectsIndeximateIndeximateProjectsIndeximateIndeximateProjectsIndeximateIndeximateProjectsIndeximateIndeximateIndeximateIndeximateIndeximateProjectsIndeximateI	Engineering			100%			
Educational SciencesImage: space s	Engineering Des	ign		%			
Natural SciencesImage: space	Social Sciences			%			
Health Sciences%Expert Knowledge0%Assessment%AssessmentPrecentage (%)Midtern Exam0400Quiz400Quiz0400Quiz0400Assignments0400Assignments0Assignments0Recitations0Projects00000Final Exam0000000Ctr Doints100000ECT Points100000Self-Study15230Self-Study100000Presention /= reparation10100000Presention /= reparation10100000Midtern Exam100000000Notement reparation /= reparation100000Notement reparation /= reparation1000Presention /= reparation10000Recitations12300Projects12000Final Exam12200Curr Heighter reparation /= reparation1000Projects12000Curr Heighter reparation /= reparation1000Projects1200	Educational Scie	ences		%			
<th <="" colspace<="" th=""><th>Natural Sciences</th><th>S</th><th></th><th></th><th>%</th></th>	<th>Natural Sciences</th> <th>S</th> <th></th> <th></th> <th>%</th>	Natural Sciences	S			%	
AssessmentPercentage (%)Midterm Exam9Percentage (%)Quiz40Quiz40Quiz </th <th>Health Sciences</th> <th></th> <th></th> <th></th> <th>%</th>	Health Sciences				%		
ActivityPercentage (%)Midterm ExamQuizQuizAssignmentsAssignmentsAttendanceRecitationsProjetsFinal ExamFor ExtrementsCTS PointsCTS PointsCTS PointsSelf-StudySelf-StudyPresentation / SeriesPresentation / SeriesProjects </th <th>Expert Knowled</th> <th>ge</th> <th></th> <th></th> <th>%</th>	Expert Knowled	ge			%		
Midtern Exam940Quiz666Assignments666Assignments676Attendance676Recitations676Projects010060Final Exam01000CTS Points and Verk LoadCTS Points and Verk Load100Other Social	Assessment						
QuízGenerationGenerationAssignmentsGGAttendanceGGRecitationsGGProjectsGGFinal ExamGGCTS PointsTorGGG <th>Activ</th> <th>/ity</th> <th>Cou</th> <th>nt</th> <th>Percentage (%)</th>	Activ	/ity	Cou	nt	Percentage (%)		
AsignmentsIndex statementsIndex statementsAttendanceIndex statementsIndex statementsRecitationsIndex statementsIndex statementsProjectsIndex statementsIndex statementsFGTS Points and KLOADNork Load (Hours)Index statementsCTS Points and KLOADIndex statementsIndex statementsCTS Points and KLOADIndex statementsIndex statementsSelf-StudyIndex statementsIndex statementsSelf-StudyIndex statementsIndex statementsSelf-StudyIndex statementsIndex statementsPresentation / StatementsIndex statementsIndex statementsNidtern ExamIndex statementsIndex statementsNidtern ExamIndex statementsIndex statementsInal ExamIndex statementsIndex statementsStatementsIndex statementsIndex statementsInal ExamStatementsIndex statements1StatementsIndex statements2Index statementsIndex statements1StatementsIndex statements2Index statementsIndex statements1StatementsIndex statements2Index statementsIndex statements3Index statementsIndex statements3Index statementsIndex statements3Index statementsIndex statements3Index statementsIndex statements3Index statementsIndex statements <t< th=""><th>Midterm Exam</th><th></th><th>1</th><th></th><th>40</th></t<>	Midterm Exam		1		40		
AttendanceIndecident of the set of the s	Quiz						
RecitationsIndexIndexIndexFinal Exam <th>Assignments</th> <th></th> <th></th> <th></th> <th></th>	Assignments						
ProjectsIndiabationIndiabationFinal Exam00Count0More LoadCountDurationWork Load (Hours)Count0Active100Active100Active100Self-Study00Active1000Self-StudySelf-Study00 <td c<="" th=""><th>Attendance</th><th></th><th></th><th></th><th></th></td>	<th>Attendance</th> <th></th> <th></th> <th></th> <th></th>	Attendance					
Final Exam160Total100ECTS Points ar Ver K LoadECTS Points ar Ver K LoadCountDurationWork Load (Hours)ActiveCountDurationWork Load (Hours)Active XCountDurationWork Load (Hours)Self-StudyCountDurationWork Load (Hours)Self-StudyCountDurationWork Load (Hours)AssignmentsGallSelf-StudySelf-StudyPresentation / Self-StudyIndemode Self-StudySelf-StudySelf-StudyPresentation / Self-StudySelf-StudySelf-StudySelf-StudyMidterm ExamIndemode Self-StudyIndemode Self-StudySelf-StudySelf-StudyMidterm ExamIndemode Self-StudyIndemode Self-StudyIndemode Self-StudySelf-StudyNotation / Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyNotation / Self-StudySelf-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudySelf-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudySelf-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Self-StudyIndemode Sel	Recitations						
<th <="" colspace<="" th=""><th>Projects</th><th></th><th></th><th></th><th></th></th>	<th>Projects</th> <th></th> <th></th> <th></th> <th></th>	Projects					
ECTS Points and Work Load Activity Count Duration Work Load (Hours) Lectures 15 2 30 Self-Study 10 100 100 Self-Study 10 0 0 Assignments 0 100 0 Assignments 0 0 0 Presentation / Swinar 0 0 0 Presentation / Swinar 11 2 2 Midterm Exam 11 0 2 Nidterm Exam 115 13 15 Laboratory 13 15 30 Projects 0 12 2 Final Exam 1 2 2 Final Exam 1 2 2 ECTS Points Load More Load / Hours 6 6 Ectre Subark Load / Hours	Final Exam		1	60			
ActiveCountDurationWork Load (Hours)Lectures15230Self-Study10100100Self-Study10100Asignments100Asignments100Presentation / Segments100PreparationPreparation2Midterm Exam112Recitations30Indicatory30Projects30Friel Exam1230Final Exam22Total Work Load (Hours)ECTS Point Work Load (Hours)Colspan="4">Colspan="4">Set Set Set Set Set Set Set Set Set Set			100				
Lectures15230Self-Study10100100AssignmentsI100100AssignmentsII100Presentation / Swinar PreparationIIIPreparation / Swinar Streppenation / SwinarIIIPreparation / SwinarIIIIMidterm ExamIIIIRecitationsIIIILaboratoryIIIIIsolatoratoryIIIIProjectsIIIIFinal ExamIIIIECTS Point Work Load / Hours)6Learning Out=Learning Learning	ECTS Points an	d Work Load					
Self-StudyInfloinInfloinInfloinAssignmentsInfloinInfloinPresentation / Swinar PreparationInfloinInfloinMidterm ExamInfloinInfloinInfloinMidterm ExamInfloinInfloinInfloinKecitationsInfloinInfloinInfloinLaboratoryInfloinInfloinInfloinProjectsInfloinInfloinInfloinFinal ExamInfloinInfloinInfloinFortal Komen LeinerInfloinECTS Point Load / Hours)InfloinInfloinInfloinInfloinInfloinLearning OuterInfloinStudents acture det knowledge of the wirfacture and use of compositionInfloinInfloinInfloinInfloinInfloinStudents acture det knowledge of the wirfacture and use of compositionInfloinInfloinInfloinInfloinInfloinStudents acture det knowledge of the wirfacture and use of compositionInfloinInfloinInfloinInfloinInfloinInfloinInfloinInfloinInfloinInfloin <td colsp<="" th=""><th>Activ</th><th>/ity</th><th>Count</th><th>Duration</th><th>Work Load (Hours)</th></td>	<th>Activ</th> <th>/ity</th> <th>Count</th> <th>Duration</th> <th>Work Load (Hours)</th>	Activ	/ity	Count	Duration	Work Load (Hours)	
AssignmentsImage: style in the	Lectures		15	2	30		
Presentation / Similar PreparationIndexIndexIndexMidterm Exam1122Recitations151151Laboratory1523030ProjectsIndex122Final Exam1222ECTS Point Work Load / Hours)6Learning Out=Index sequencies (Total Work Load / Hours)Students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A students acquies (Index sequencies (Total Work Load / Hours)A student acquies (Index sequencies (Total Work Load / Hours)A student acquies (Index sequencies (Total Work Load / Hours)A student acquies (Index sequencies (Total Work Load / Hours)A student	Self-Study		10	10	100		
PreparationIndexIndexIndexMidterm Exam122Recitations15115Laboratory15230Projects1230Projects122Final Exam122ECTS Point (Total Work Load / Hours)Generations (Total States Learning Outset (Total States Learning Cutset (Total States Le							
Recitations1115Laboratory30Projects30ProjectsFinal Exam122Total Work Load179ECTS Poirts Total Work Load / Hours)6Learning Out=ttStudents act_etailed knowledge of the market and use of computer2		eminar					
Laboratory15230Projects650Final Exam122Final Exam121ECTS Poirty Total Work Load / HoursGEctrs Poirty Total Work Load / HoursStudents act use of computer subscriptionsStudents act use of the multiple of the	Midterm Exam		1	2	2		
Projects Image: Normal System 1 Image: Normal System 3 Final Exam 1 2 2 Final Exam 1 2 1 Total Work Load 179 Offer System 3 Image: Normal System 3	Recitations		15	1	15		
Final Exam122Total Work Load179ECTS Points (Total Work Load / Hours)6Learning OutceresStudents acquire detailed knowledge of the multipacture and use of composition2Image: Students acquire detailed knowledge of the multipacture and use of composition	Laboratory		15	2	30		
Total Work Load 179 ECTS Points (Total Work Load / Hours) 6 Learning Outcomes 1 Students acquire detailed knowledge of the manufacture and use of composites. 2 Image: Colspan="2">Image: Colspan="2" Image: C	Projects						
ECTS Points (Total Work Load / Hours) 6 Learning Outcower 1 Students acquire detailed knowledge of the manufacture and use of composition 2 Image: Composition of the manufacture and use of the manufacture and use of composition of the manufacture and use of the manufacture	Final Exam		1	2	2		
Learning Outcomes 1 Students acquire detailed knowledge of the manufacture and use of composites. 2 Image: Composite of the manufacture and use of composite of the manufacture and use of composite of the manufacture and use of composites.				Total Work Load	179		
1 Students acquire detailed knowledge of the manufacture and use of composites. 2 Image: Composite of the manufacture and use of composites of the manufacture and use of composites.	ECTS Points (Total Work Load / Hours)						
2	Learning Outco	omes					
3	1	Students acqu	ire detailed knowledge of the m	anufacture and use of composi	tes.		
		Students acqu	ire detailed knowledge of the m	anufacture and use of composi	tes.		



4										
5										
6										
7										
8										
9										
10										
11										
12										
Weekly Conte	nt									
1	Definition of co			n based on mat	rix and topology,	Constituents o	of composites,			
			ano-composites							
2	-		ic Applications,	-	listribution, Inter	facial Reaction	of matrix-			
3			ng of reinforcing				or matrix			
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
Contribution o	f Learning Out	comes to Pro	gram Objective	es (1-5)						
	P1	P2	P3	P4	P5	P6	P7			
All										
1	1		3							
2										
3										
4										
5										
6										



7									
8									
9									
10									
11									
12									
Contribution Level 1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High									
Compiled by:									
Date of Compilation:									