

Course Title-Course Code: İLT 530 NANOTECHNOLOGY I.							Name of the Programme: ADVANCED TECHNOLOGIES			
Semester	Teaching Methods							Credits		
	Lecture	Recite	Lab.	Field Study		Other	Total	Credit	ECTS Credit	
1-2	42			100		46	188	3	7.5	
Language	Turkish									
Compulsory / Elective	Compulsory									
Prerequisites	No									
Course Contents	What is nanotechnology?, The importance of nanotechnologies, Synthesis methods of nanomaterials: Plasma arcing, Lithography, chemical vapor deposition, Electrodeposition, Sol-gels, Micro emulsion, RF Plasma. Characterization methods of nanomaterials: Scanning Electron Microscopy (SEM), Scanning Hall Probe Microscopy (SHPM), Magnetic force microscopy (MFM), Scanning Tunneling Microscopy (STM), Atomic Force Microscopy (AFM), UV-VIS, FTIR, RAMAN, XRD, SAXS									
Course Objectives	The aim of the course is to learning fundamentals of nanomaterials.									
Learning Outcomes and Competences	The students who have taken this course can learn fundamentals of nanomaterials.									
Textbook and/or References	<ol style="list-style-type: none"> 1. Handbook of Nanotechnology, Bharat Bhushan Springer-Verlag Berlin Heidelberg New York 2004 2. Nanophysics and nanotechnology, Edward L. Wolf A John Wiley & Sons, Inc., Publication New York 2004 3. Nanostructured Materials Philippe Knauth, Joop Schoonman Kluwer Academic Publishers New York 2004 4. Nanoscale Materials in Chemistry, Kenneth J. Klabunde A John Wiley & Sons, Inc., Publication 2001 									
Assessment Criteria							<i>If any, mark as (X)</i>	Percent (%)		
	Midterm Exams						X	20		
	Quizzes									
	Homeworks						X	20		
	Projects									
	Term Paper						x	10		
	Laboratory Work									
	Other						x	50		
	Final Exam						X	50		
Instructors	Assist. Prof. Dr. Şükrü ÇAVDAR, cavdar@gazi.edu.tr									
Week	Subject									
1	What is nanotechnology? , The importance of nanotechnologies									
2	Synthesis methods of nanomaterials									
3	Plasma arcing, lithography, chemical vapour deposition									
4	Electrodeposition, sol-gels, micro emulsion, RF Plasma									
5	Characterization methods of nanomaterials									
6	Scanning Electron Microscopy (SEM)									
7	Midterms									

8	Scanning Hall Probe Microscopy (SHPM)
9	Magnetic force microscopy (MFM)
10	Scanning Tunneling Microscopy (STM)
11	Atomic Force Microscopy (AFM)
12	UV-VIS
13	FTIR, RAMAN
14	XRD and SAXS