Course Code and Title     ILT544 MICRO AND NANO PATTERNING TECHNIQUES       Credits     3       ECTS     7.5       Name of Lecturer     Professor Elif ORHAN       And e-mail address     eliforhan@gazi.du.tr       Department/Program     Advanced Technologies       Course Type     Elective       Course Language     Turkish       Course Objectives     The fabrication techniques are one of the important aspects in the nano-science and nanotechnology. The aim of this course is to introduce the fabrication alternatives in micro and nano scales. Particularly, product-oriented fabrication technologies in nano-technology will be presented with some examples.       Course Contents     Introduction to Nanosystems and Nanodevices: Fabrication from micro- to nanotechnology. Photolithography. Photomask technology. Soft lithography, nanoimprint method. Interference lithography. Immersion lithography. Linearesimply. Mano-fabrication: Nano-fabrication processes for integrated circuit technology.       Outcomes     Ability to use technical /modern materials to be required in her/his works, ability to present oral and written forms in her/his field, ability to work on interdisciplinary studies, ability to analyze of results.       References     Books     1. Cu, Z., Nanofabrication Principles, Capabilites and Limits, Springer, ISBN: 978-0-387-75576-2, 2008.       Q. 2008.     Bunsban, B., Springer Handbook of Nanotechnology, Springer, ISBN: 978-0-387-75576-2, 2008. <
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Planned learning Theoric Practice Lab. Projects Assign. Other Total ECTS
<b>activities and</b> 42 76 30 188 7.5
teaching methods
Assessment Methods and Quantity (mark with "X") Percentage (%)
Criteria
Midterm Exam X 30
Quiz
Assignment X 10
Projects X 20
Laboratory
Laboratory Image: Constraint of the second

Final Exam	X 40
WEEKLY COURSE PLAN	
Week	Contents and topics
1. Week	Introduction to Nanosystems and Nanodevices: Fabrication from micro-to
	nanotechnology
2. Week	Introduction to Nanosystems and Nanodevices: Fabrication from micro-to
	nanotechnology
3. Week	Photolithography
4. Week	Photomask technology
5. Week	Soft lithography, nanoimprint method
6. Week	Interference lithography
7. Week	Midterm Exam
8. Week	Immersion lithography
9. Week	E-beam lithography
10. Week	Nano-templates by FIB (Focus Ion Beam)
11. Week	X-ray lithography, Plasmon lithography
12. Week	Nano-fabrication by self-assembly
13. Week	Direct writing lithography
14. Week	Dip-pen nanolithography
15. Week	A unique example on nano-fabrication: Nano-fabrication processes for
	integrated circuit technology
16. Week	A unique example on nano-fabrication: Nano-fabrication processes for
	integrated circuit technology