Reactors, Criticality in Homogenous Reactors, Reactor Calculations with One Group, Heterogenous Reactors, Infinite Rise Coefficient, Minimal Critical Dimension, Reactor Control, The Structure of Nuclear Reactors.Course Learning Outcomes• Ability to work Nuclear Power Plant and facilities produced neutron (cyclotron type accelerators / research reactors) • To be able to tell the basics of the nuclear reactors. • Order nuclear reactor types and the working principles of nuclear reactor • Tell the basics concepts and knowledges about the nuclear reactors • Ability to rapidly distinguish the true an required knowledge, • Ability to do analyze of results • Ability to work at TAEK, TUBITAK-UME, and research	GAZI UNIVERSITY GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCE ECTS FORM								
Credits       3         ECTS       Assoc.Dr.Sema Bilge Ocak         Name of Lecturer And e-mail address       Assoc.Dr.Sema Bilge Ocak         Department/Program       Advanced Technologies         Course Type									
ECTS       And e-mail address         Name of Lecturer       Assoc.Dr.Sema Bilge Ocak         And e-mail address       Department/Program         Advanced Technologies       Course Language         Course Language       Turkish         Course Contents       Fundamentals of The Nuclear Physics, Fundamentals of Neutron Physics, Slowing Neutrons, The Properties of Thermal Neutrons, Division of Nucleus (Fission), The Physical Properties of The Nuclear Reactors, Criticality in Homogenous Reactors, Reactor Calculations with One Group, Heterogenous Reactors, Infinite Rise Coefficient, Minimal Critical Dimension, Reactor Control, The Structure of Nuclear Reactors.         Course Learning Outcomes <ul> <li>Ability to work Nuclear Power Plant and facilities produced neutron (cyclotron type accelerators / research reactors)</li> <li>To be able to tell the basics of the nuclear reactors.</li> <li>Order nuclear reactor types and the working principles of nuclear reactors</li> <li>Ability to present oral and written forms in her/his field</li> <li>Ability to oanalyze of results</li> <li>Ability to do analyze of results</li> <li>Ability to work at TAEK, TUBITAK-UME, and research groups, universities, research centers in advanced level, people who specialize in these subjects.</li> <li>References</li> <li>Re</li></ul>		3							
Name of Lecturer And e-mail address       Assoc.Dr.Sema Bilge Ocak         Advanced Technologies       Advanced Technologies         Course Type       Turkish         Course Language       Turkish         Course Objectives       Fundamentals of The Nuclear Physics, Fundamentals of Neutron Physics, Slowing Neutrons, The Properties of Thermal Neutrons, Division of Nucleus (Fission), The Physical Properties of The Nuclear Reactors, Critical Dimension, Reactor Control, The Structure of Nuclear Reactors.         Course Learning Outcomes <ul> <li>Ability to work Nuclear Power Plant and facilities produced neutron (cyclotron type accelerators / research reactors)</li> <li>To be able to tell the basics of the nuclear reactors.</li> <li>Order nuclear reactor types and the working principles of nuclear reactor</li> <li>Tell the basics concepts and knowledges about the nuclear reactors</li> <li>Ability to rapidly distinguish the true an required knowledge, Ability to vork at TAEK, TUBITAK-UME, and research groups, universities, research centers in advanced level, people who specialize in these subjects.</li> </ul> References up to date) <ul> <li>Books</li> <li>I.Reactor Physics, P. F. Zweifel, 1973</li> <li>Nuclear Reactor Analysis J. J. Duderstadt, L. J. Hamilton, 1976.</li> <li>Nuclear Reactor Analysis J. J. Duderstadt, L. J. Hamilton, 1976.</li> <li>Nuclear Reactor Engineering, S. Galsstone, A. Sesonske, 1967.</li> </ul> Planned learning activities and teaching methods <ul> <li>Theoric</li> <li>Pracetice</li> <li>Lab</li></ul>		0							
Department/Program       Advanced Technologies         Course Type	Name of Lecturer	Assoc.Dr.Sema Bilge Ocak							
Course Type         Course Language         Turkish           Course Semester         There is no prerequisite for this course.         Prerequisites           Course Objectives         Fundamentals of The Nuclear Physics, Fundamentals of Neutron physics, Slowing Neutrons, The Properties of Thermal Neutrons, Division of Nucleus (Fission), The Physical Properties of The Nuclear Reactors, Criticality in Homogenous Reactors, Reactor Calculations with One Group, Heterogenous Reactors, Infinite Rise Coefficient, Minimal Critical Dimension, Reactor Control, The Structure of Nuclear Reactors.           Course Learning Outcomes <ul> <li>Ability to work Nuclear Power Plant and facilities produced neutron (cyclotron type accelerators / research reactors)</li> <li>To be able to tell the basics of the nuclear reactors.</li> <li>Order nuclear reactor types and the working principles of nuclear reactor</li> <li>Tell the basics concepts and knowledges about the nuclear reactors</li> <li>Ability to rapidly distinguish the true an required knowledge, Ability to work at TAEK, TUBITAK-UME, and research groups, universities, research centers in advanced level, people who specialize in these subjects.</li> </ul> <li>References         <ul> <li>References must be up to date)</li> </ul> </li> <li>Planned learning activities and teaching methods and sessesment Methods and Sessessment Methods and Sessesment Methods and Sessesment Methods a</li>		Advance	d Technolo	ogies					
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Laboratory						
Practice						
Other		Х	10			
Final Exam		Х	40			
WEEKLY COURSE PLAN						
Week	Contents and topics					
1. Week	Fundamentals of Neutron Physics, Fundamentals of Reactor Physics					
2. Week	Slowing the Neutrons. Properties of the Thermal Neutrons.					
3. Week	Division of The Nucleus (Fission)					
4. Week	The Physical Properties of The Nuclear Reactors					
5. Week	Homogenous Reactors					
6. Week	Heterogenous Reactors,					
7. Week	MIDTERM EXAM					
8. Week	Infinite Rise Coefficient, Minimal Critical Dimension,					
9. Week	Reactor Control					
10. Week	The Structure of Nuclear Reactors.					
11. Week	Power reactors and reactor materials,					
12. Week	Reactor heat generation, reactor shielding and safety					
13. Week	Fuel cycle of nuclear reactors					
14. Week	Characteristic quantities of Fuel cycle, types of fuel cycle operations of fuel					
	cycle, of radioactive waste management					
15. Week	FINAL EXAM					