

Curriculum

□ Undergraduate Course

Classification	Subject No.	Subject Name	Lecture:Lab.:Credit (Homework)	Semester	Remark
Basic Electives	NQE101	Nuclear and Quantum World	3:0:3(3)	Fall	
Mandatory Major Courses	NQE201	Fundamentals of Nuclear and Quantum Science	3:0:3(4)	Spring	
	NQE202	Fundamentals of Nuclear Engineering I	3:0:3(4)	Spring	
	NQE302	Nuclear Reactor Theory and Simulation	3:3:4(6)	Fall	
	NQE405	System Engineering of Nuclear Power Plants and Experiments	3:3:4(6)	Spring	
	NQE409	Nuclear and Quantum Engineering Design Project	2:6:4(6)	Spring	
Elective Major Courses	NQE203	Fundamentals of Nuclear Engineering II	3:0:3(4)	Fall	
	NQE261	Introduction to Medical Imaging	3:0:3(4)	Fall	
	NQE271	Energy and Environment	3:0:3(4)	Spring	
	NQE321	Design and Implementation of Nuclear Systems	1:6:3(3)	Spring	
	NQE341	Nuclear Chemistry and Experiments	3:3:4(6)	Spring	
	NQE361	Interaction of Quantum Particles with Matter	3:0:3(6)	Spring	
	NQE362	Radiation Biophysics	3:0:3(4)	Fall	
	NQE371	Nuclear Energy Economics and Management	3:0:3(4.5)	Fall	
	NQE383	Fundamentals of Quantum Beam Engineering	3:0:3(6)	Fall	
	NQE408	Reactor Experiments	1:3:2(3)	Spring, Summer Fall, Winter	
	NQE412	Monte Carlo Methods and Applications	3:0:3(6)	Fall	
	NQE421	Nuclear Thermal Hydraulics and Experiments	3:3:4(6)	Spring	
	NQE426	Introduction to Ultra-small Scale Engineering	3:3:4(6)	Fall	
	NQE427	Risk and Reliability Engineering	3:0:3(6)	Spring	
	NQE431	Nuclear and Quantum I&C and Experiments	3:3:4(6)	Spring	
	NQE435	Information Engineering for Nuclear and Quantum Applications and Experiments	3:3:4(6)	Spring, Fall	
	NQE441	Environmental Engineering of Nuclear Power	3:0:3(4.5)	Fall	
	NQE451	Nuclear and Quantum Materials and Experiments	3:3:4(6)	Spring	
	NQE471	Experimental Quantum Engineering	2:3:3(6)	Spring	
	NQE472	Quantum Computer and Quantum Information	3:0:3(6)	Fall	
NQE486	Introduction to Fusion Reactor Systems	3:0:3(4)	Fall		
NQE487	Scientific Oral English in Nuclear and Quantum Engineering	3:0:3(4)	Spring, Fall		
NQE488	Special Topics and Nuclear and Quantum Engineering I	2:0:2(4)	Spring		
NQE489	Special Topics in Nuclear and Quantum Engineering II	3:0:3(6)	Fall		
Research	NQE490	B.S. Thesis Research	0:6:3	Spring, Fall	
	NQE495	Independent Research	0:6:1	Spring, Fall	
	NQE496	Seminar	1:0:1	Spring, Fall	

※ 400-level courses are mutually recognizable between the bachelor's and master's program.

□ Graduate Course

Classification	Subject No.	Subject Name	Lecture:Lab.:Credit (Homework)	Semester	Remark
General Courses	CC010	Leadership	1:0:0	Spring, Fall	
	CC500	Scientific Writing in English	3:0:3(4)	Spring, Fall	
	CC510	Introduction to Computer Applications	2:3:3(10)	Spring, Fall	
	CC511	Probability Statistics	2:3:3(6)	Spring, Fall	
	CC512	Introduction to Materials Science	3:0:3(6)	Spring, Fall	
	CC513	Engineering Economics and Cost Analysis	3:0:3(6)	Fall	
	CC522	Introduction to Instruments	2:3:3(8)	Fall	
	CC530	Entrepreneurship and Business Strategies	3:0:3(6)	Fall	
	CC531	Patent Analysis and Invention Disclosure	3:0:3(6)	Spring, Fall	
Major Courses	NQE511	Nuclear Reactor Kinetics	3:0:3(3)	Fall	
	NQE512	Nuclear Reactor Analysis and Design	3:0:3(6)	Spring	
	NQE513	Neutron and Quantum Particle Transport Theory and Computation	3:0:3(6)	Spring	
	NQE520	Nuclear Reactor Engineering	3:0:3(6)	Fall	
	NQE521	Nuclear Thermal-Hydraulics I	3:0:3(6)	Spring	
	NQE522	Nuclear Power Plant Design Project	3:0:3(6)	Spring	
	NQE523	Nuclear Reactor Safety I	3:0:3(6)	Spring	
	NQE524	Simulation of Nuclear and Quantum System	3:0:3(6)	Winter	
	NQE526	Quantum and Micro Energy Transport	3:0:3(6)	Fall	
	NQE527	Gas-cooled Reactors and Hydrogen	3:0:3(6)	Fall	
	NQE532	Nuclear and Quantum Instrumentation Systems	3:1:3(6)	Spring	
	NQE534	Nuclear and Quantum Control Systems	3:1:3(6)	Fall	
	NQE536	Compact Nuclear Simulator Operation Experiment	1:3:2(6)	Winter	
	NQE540	Nuclear Chemical Engineering	3:0:3(6)	Spring	
	NQE541	Radioactive Waste Management	3:0:3(6)	Fall	
	NQE551	Nuclear Materials	3:0:3(6)	Fall	
	NQE552	Integrity of Nuclear Structural Materials	3:0:3(6)	Spring	
	NQE561	Radiation Measurement Systems	3:0:3(4)	Spring	
	NQE562	Radiation Imaging Instrumentation	3:0:3(4)	Spring	
	NQE563	Radiation Biology	3:0:3(4)	Spring	
	NQE571	NMR Engineering	3:1:3(6)	Spring, Fall	
	NQE572	Neutron Optics	3:0:3(6)	Spring, Fall	
	NQE575	Nuclear Energy Policy	3:0:3(6)	Spring	
NQE581	Nuclear Fusion Engineering	3:0:3(6)	Spring		
NQE582	Applied Plasma Engineering	3:0:3(6)	Fall		
NQE583	Particle Accelerator Engineering	3:0:3(6)	Fall		
NQE595	Technical Writing in Nuclear and Quantum Engineering	3:0:3(4)	Spring, Fall		
NQE598	Special Topics in Nuclear and Quantum Engineering I	2:0:2(4)	Spring		
NQE599	Special Topics in Nuclear and Quantum Engineering II	3:0:3(6)	Fall		
Major Courses	NQE621	Nuclear Thermal-Hydraulics II	3:0:3(6)	Fall	
	NQE623	Nuclear Reactor Safety II	3:0:3(6)	Fall	
	NQE624	Nuclear Fuel and Core Design	3:0:3(6)	Fall	
	NQE625	Numerical Methods in Reactor Engineering Analysis	3:2:3(6)	Winter	
	NQE631	Nuclear and Quantum Instrumentation and Control Design	2:3:3(6)	Fall	
	NQE651	Radiation Effects on Reactor Materials	3:0:3(6)	Fall	
	NQE653	Nuclear Reactor Fuel Elements	3:0:3(6)	Spring	
	NQE675	Special Topics in Nuclear Energy Policy	3:0:3(6)	Fall	
	NQE726	Special Topics in Nuclear Safety Analysis	2:3:3(6)	Fall	
	NQE727	Special Topics in Probabilistic Risk Assessment	2:0:2(4)	Summer	
	NQE735	Special Topics in Information Engineering for Nuclear and Quantum Applications	2:3:3(4)	Fall	
NQE743	Special Topics in Nuclear Chemical Engineering	2:0:2(4)	Spring, Fall		
Research	NQE960	M.S. Thesis Research		Spring, Fall	
	NQE965	M.S. Independent Research		Spring, Fall	
	NQE966	M.S. Seminar	1:0:1	Spring, Fall	
	NQE980	Ph.D. Thesis Research		Spring, Fall	
	NQE986	Ph.D. Seminar	1:0:1	Spring, Fall	

※ 500-level courses are mutually recognizable between the bachelor's and master's program.