Table of Curriculum (Undergraduate)

Classification	Subject No.	Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
Elective Basic	NQE101	33.101	Nuclear and Quantum World	3:0:3(3)	Fall	
Mandatory Major	NQE201	33.201	Fundamentals of Nuclear and Quantum Science	3:0:3(4)	Spring	
	NQE202	33.202	Introduction to Nuclear Engineering I	3:0:3(4)	Spring	
	NQE203	33.203	Introduction to Nuclear Engineering II	3:0:3(4)	Fall	
	NQE204	33.204	Interaction of Radiation with Matters	3:0:3(4)	Fall	
	NQE301	33.301	Nuclear Reactor Theory	3:0:3(4)	Fall	
	NQE303	33.303	Radiation Measurement Experiments	2:3:3(6)	Fall	
	NQE401	33.401	System Engineering of Nuclear Power Plants and Experiments	3:3:4(6)	Spring	
	NQE402	33.402	Nuclear and Quantum Engineering Design Project	1:6:3(4)	Fall	
Elective Major	NQE211	33.211	Engineering Mathematics for Nuclear Engineers	3:0:3(4)	Fall	
	NQE272	33.272	Introduction to Medical Physics	3:0:3(4)	Fall	
	NQE281	33.281	Energy, Environment and Water	3:0:3(4)	Spring	
	NQE311	33.311	Numerical Methods and Computer Simulation	3:0:3(4)	Spring	
	NQE322	33.322	Introduction to Nuclear Thermal Hydraulics	3:0:3(4)	Fall	
	NQE331	33.331	Nuclear I&C and Experiments	2:3:3(4)	Spring	
	NQE341	33.341	Nuclear Chemistry	3:0:3(4)	Spring	
	NQE351	33.351	Introduction to Nuclear and Quantum Engineering Materials	3:0:3(4)	Fall	
	NQE363	33.363	Fundamentals of Neutron and X-ray Science	3:0:3(4)	Fall	
	NQE373	33.373	Interaction to Radiation Biology	3:0:3(4)	Spring	
	NQE382	33.382	Engineering Physics for Nuclear Engineers	3:0:3(4)	Fall	New
	NQE434	33.434	Nuclear Power Systems Control	3:1:3(6)	Spring·Fall	
	NQE441	33.441	Environmental Engineering of Nuclear Power	3:0:3(4)	Fall	
	NQE452	33.452	Application of Nuclear and Quantum Engineering Materials	3:0:3(4)	Spring	
	NQE471	33.471	Experiments in Quantum Engineering	2:3:3(4)	Spring	
	NQE481	33.481	Introduction to Nuclear Fusion Engineering	3:0:3(4)	Spring	
	NQE484	33.484	Writing English Essays for Engineers	3:0:3(4)	Spring	
	NQE485	33.485	Special Topics and Nuclear and Quantum Engineering III	1:0:1(4)	Spring·Summer·Fall	
	NQE488	33.488	Special Topics and Nuclear and Quantum Engineering I	2:0:2(4)	Spring·Summer·Fall	
	NQE489	33.489	Special Topics in Nuclear and Quantum Engineering II	3:0:3(4)	Spring·Summer·Fall	
Research	NQE490	33.490	B.S. Thesis Research	0:6:3	Spring·Fall	
	NQE495	33.495	Independent Research	0:6:1	Spring·Fall	
	NQE496	33.496	Seminar	1:0:1	Spring·Fall	

Table of Curriculum (Graduate)

Classification	Subject No.	Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
Elective	NQE502	33.502	Principles and Applications of Nuclear Engineering	3:0:3(4)	Fall	◎
	NQE503	33.503	Radiation Science, Technology and Applications	3:0:3(4)	Spring·Fall	◎
	NQE510	33.510	Nuclear Reactor Kinetics	3:0:3(4)	Fall	◎
	NQE512	33.512	Nuclear Reactor Analysis and Design	3:0:3(4)	Spring	◎
	NQE513	33.513	Neutron/Radiation Transport Theory and Computation	3:0:3(4)	Spring	◎
	NQE514	33.514	Monte Carlo Methods and Applications	3:0:3(4)	Spring	◎
	NQE517	33.517	Fast Reactor Design and Analysis	3:0:3(4)	Fall	◎
	NQE521	33.521	Reactor Thermal -Hydraulics	3:0:3(4)	Fall	◎
	NQE522	33.522	Nuclear Power Plant Design Project	3:0:3(4)	Spring·Fall	◎
	NQE523	33.523	Nuclear Reactor Safety	3:0:3(4)	Spring·Fall	◎
	NQE524	33.524	Simulation of Nuclear and Quantum System	3:0:3(4)	Spring·Fall	◎
	NQE526	33.526	Quantum and Micro Energy Transport	3:0:3(4)	Fall	◎
	NQE527	33.527	Gas-cooled Reactors and Hydrogen	3:0:3(4)	Fall	◎
	NQE528	33.528	Introduction to Risk and Reliability Engineering	3:0:3(4)	Fall	◎
	NQE529	33.529	Nuclear System Design Course	3:0:3(4)	Spring	◎
	NQE533	33.533	Nuclear Power Plant Instrumentation and Control Systems	3:1:3(6)	Spring·Fall	◎
	NQE535	33.535	Human Factors Engineering in Nuclear Power Plants	3:0:3(4)	Spring·Fall	◎
	NQE537	33.537	Wireless Power Electronics	3:0:3(4)	Spring	◎
	NQE538	33.538	Smart Grid and Power Electronics	3:0:3(4)	Spring	◎
	NQE540	33.540	Nuclear Chemical Engineering	3:0:3(4)	Spring	◎
	NQE541	33.541	Nuclear Waste Management	3:0:3(4)	Fall	◎
	NQE542	33.542	Chemistry of Actinides	3:0:3(4)	Fall	◎
	NQE543	33.543	Nuclear Power Plant Water Chemistry	3:0:3(4)	Fall	◎
	NQE545	33.545	Radiation Chemistry	3:0:3(4)	Spring	◎
	NQE551	33.551	Nuclear Reactor Metallurgy	3:0:3(4)	Spring·Fall	◎
	NQE552	33.552	Integrity of Nuclear Structural Materials	3:0:3(4)	Spring	◎
	NQE553	33.553	Nuclear Fuel Engineering	3:0:3(4)	Spring·Fall	◎
	NQE555	33.555	Mechanics of Irradiated Material	3:0:3(4)	Spring·Fall	◎
	NQE561	33.561	Radiation Measurement Systems	3:0:3(4)	Spring·Fall	◎
	NQE562	33.562	Radiation Imaging Instrumentation	3:0:3(4)	Spring	◎
	NQE563	33.563	Radiation Biology	3:0:3(4)	Spring·Fall	◎
	NQE564	33.564	Physics of Medical Imaging	3:0:3(4)	Spring	◎
	NQE571	33.571	NMR Engineering	3:1:3(6)	Spring·Fall	◎
	NQE572	33.572	Neutron Nano-Characterization	3:0:3(4)	Spring·Fall	◎
	NQE575	33.575	Nuclear Energy Policy	3:0:3(4)	Fall	◎
	NQE581	33.581	Nuclear Fusion Engineering	3:0:3(4)	Spring	◎

Classification	Subject No.	Code	Subject Name	Lecture:Lab.: Credit (Homework)	Semester	Remark
	NQE582	33.582	Applied Plasma Engineering	3:0:3(4)	Fall	◎
	NQE583	33.583	Engineering of Charged Particle Beams	3:0:3(4)	Fall	◎
	NQE584	33.584	Radiation Protection and Regulations	3:0:3(4)	Fall	◎
	NQE585	33.585	Introduction to Nuclear Safety Regulation	3:0:3(4)	Fall	◎
	NQE586	33.586	Safety Regulation for Nuclear Installations	3:0:3(4)	Spring	◎
	NQE587	33.587	Regulation for Nuclear Fuel Cycle and Emergency Preparedness	3:0:3(4)	Winter	◎
	NQE588	33.588	Advanced Design Project I for Nuclear and Quantum Engineering	0:9:3	Spring	◎
	NQE589	33.589	Advanced Design Project II for Nuclear and Quantum Engineering	0:9:3	Fall	◎
	NQE595	33.595	Technical Writing in Nuclear and Quantum Engineering	3:0:3(4)	Fall	◎
	NQE597	33.597	Special Topics in Nuclear and Quantum Engineering III	1:0:1(4)	Spring·Summer·Fall	◎
	NQE598	33.598	Special Topics in Nuclear and Quantum Engineering I	2:0:2(4)	Spring·Summer·Fall	◎
	NQE599	33.599	Special Topics in Nuclear and Quantum Engineering II	3:0:3(4)	Spring·Summer·Fall	◎
	NQE625	33.625	Computational Analysis in Nuclear System	3:0:3(4)	Spring	
	NQE628	33.628	Application of Probabilistic Safety Assessment	3:0:3(4)	Fall	
	NQE631	33.631	Nuclear and Quantum Instrumentation and Control Design	2:3:3(6)	Spring·Fall	
	NQE654	33.654	Materials for Nuclear Fuel Cycle	3:0:3(4)	Fall	New
	NQE656	33.656	Advanced Nuclear Systems and Materials	3:0:3(4)	Spring·Fall	
	NQE675	33.675	Special Topics in Nuclear Energy Policy	3:0:3(4)	Fall	
	NQE726	33.726	Special Topics in Nuclear Safety Analysis	2:3:3(6)	Fall	
Research	NQE960	33.960	M.S. Thesis Research		Spring·Fall	Spring·Fall
	NQE965	33.965	M.S. Independent Research		Spring·Fall	
	NQE966	33.966	M.S. Seminar	1:0:1	Spring·Fall	
	NQE980	33.980	Ph.D. Thesis Research		Spring·Fall	
	NQE986	33.986	Ph.D. Seminar	1:0:1	Spring·Fall	

Substitute Course List

Substitute courses in the department					
Category	**Courses currently offered**		**Courses not currently offered**		
	Course no.	Course title	Course no.	Course title	Remark
Undergraduate Course	NQE341	Nuclear Chemistry	NQE321	Design and Implementation of Nuclear Systems	Course Close
"	NQE281	Energy, Environment and Water	NQE371	Nuclear Energy Economics and Management	"
"	NQE363	Fundamentals of Neutron and X-ray Science	NQE381	Introduction to Neutron and NMR Spectroscopy	"
"	NQE363	Fundamentals of Neutron and X-ray Science	NQE383	Fundamentals of Quantum Beam Engineering	"
"	NQE488	Special Topics in Nuclear and Quantum Engineering I	NQE408	Reactor Experiments	"
"	NQE351	Introduction to Nuclear and Quantum Engineering Materials	NQE421	Nuclear Thermal Hydraulics and Experiments	"
"	NQE373	Interaction to Radiation Biology	NQE426	Introduction to Ultra-small Scale Engineering	"
"	NQE331	Nuclear I&C and Experiments	NQE435	Information Engineering for Nuclear and Quantum Applications and Experiments	"
"	NQE311	Neumerical Methods and Computer Simulation	NQE471	Experimental Quantum Engineering	"
"	NQE311	Neumerical Methods and Computer Simulation	NQE461	Monte Carlo Methods and Applications	"
"	NQE481	Introduction to Nuclear Fusion Engineering	NQE472	Quantum Computer and Quantum Information	"
"	NQE322	Introduction to Nuclear Thermal Hydraulics	NQE221	Introduction to Nuclear Thermal Hydraulics	Course Change
"	NQE351	Introduction to Nuclear and Quantum Engineering Materials	NQE351	Introduction to Nuclear and Quantum Engineering Materials	"
"	NQE510	Nuclear Reactor Kinetics	NQE411	Nuclear Reactor Kinetics	"
"	NQE311	Numerical Methods and Computer Simulation	NQE461	Monte Carlo Methods and Applications	"
Graduate Course	NQE521	Reactor Thermal -Hydraulics	NQE520	Nuclear Reactor Engineering	Course Close
"	NQE512	Nuclear Reactor Analysis and Design	NQE536	Compact Nuclear Simulator Operation Experiment	"
"	NQE527	Gas-cooled Reactors and Hydrogen	NQE621	Nuclear Thermal-Hydraulics II	"
"	NQE523	Nuclear Reactor Safety	NQE623	Nuclear Reactor Safety II	"
"	NQE512	Nuclear Reactor Analysis and Design	NQE624	Nuclear Fuel and Core Design	"
"	NQE553	Nuclear Fuel Engineering	NQE653	Nuclear Reactor Fuel Elements	"
"	NQE553	Nuclear Fuel Engineering	NQE651	Radiation Effects on Reactor Materials	"
"	NQE675	Special Topics in Nuclear Energy Policy	NQE743	Special Topics in Nuclear Chemical Engineering	"
"	NQE502	Principles and Applications of Nuclear Engineering	NQE202	Introduction to Nuclear Engineering I	Course New
"	NQE510	Nuclear Reactor Kinetics	NQE511	Nuclear Reactor Kinetics	Course Change
"	NQE510	Nuclear Reactor Kinetics	NQE411	Nuclear Reactor Kinetics	"
"	NQE513	Neutron/Radiation Transport Theory and Computation	NQE513	Neutron and Quantum Particle Transport Theory and Computation	"

	Substitute courses in the department				
Category	Courses currently offered		Courses not currently offered		
	Course no.	Course title	Course no.	Course title	Remark
"	NQE521	Reactor Thermal -Hydraulics	NQE521	Nuclear Thermal-Hydraulics I	"
"	NQE523	Nuclear Reactor Safety	NQE523	Nuclear Reactor Safety I	"
"	NQE533	Nuclear Power Plant Instrumentation and Control Systems	NQE532	Nuclear and Quantum Instrumentation Systems	"
"	NQE434	Nuclear Power Systems Control	NQE534	Nuclear and Quantum Control Systems	"
"	NQE537	Wireless Power Electronics	NQE537	On-Line Electric Vehicles & Mobile Power Electronics	"
"	NQE625	Computational Analysis in Nuclear System	NQE625	Numerical Methods in Reactor Engineering Analysis	"
"	NQE553	Nuclear Fuel Engineering	NQE653	Nuclear Reactor Fuel Elements	"
"	NQE535	Human Factors Engineering in Nuclear Power Plants	NQE735	Special Topics in Information Engineering for Nuclear and Quantum Applications	"
"	NQE628	Application of Probabilistic Safety Assessment	NQE727	Special Topics in Probabilistic Risk Assessment	"