Table of Curriculum

Classification	Course No.	Computer Code	Course Name	Lecture; Lab.; Credit (Assignment)	Semester	Note
Mandatory Major	PH221	20.221	Classical Mechanics I	3:0:3(6)	spring	
	PH231	20.231	Electromagnetism I	3:0:3(6)	spring	
	PH251	20.251	Physics Laboratory I	0:4:2(3)	spring	
	PH301	20.301	Quantum Mechanics I	3:0:3(6)	spring	
	PH302	20.302	Quantum Mechanics II	3:0:3(6)	fall	
	PH311	20.311	Thermal Physics	3:0:3(4.5)	spring	
	PH351	20.351	Physics Laboratory III	0:3:2(3)	spring/fall	
Elective Major	PH211	20.211	Mathematical Methods in Physics I	3:0:3(6)	fall	
	PH212	20.212	Mathematical Methods in Physics II	3:0:3(6)	spring	
	PH222	20.222	Classical Mechanics II	3:0:3(6)	fall	
	PH232	20.232	Electromagnetism II	3:0:3(6)	fall	
	PH241	20.241	Modern Physics	3:0:3(4.5)	spring	
	PH252	20.252	Physics Laboratory II	0:4:2(3)	fall	
	PH312	20.312	Statistical Physics	3:0:3(6)	fall	
	PH361	20.361	Solid State Physics I	3:0:3(4.5)	fall	
	PH391	20.391	Optics	3:0:3(4.5)	spring/fall	
	PH401	20.401	Atomic and Molecular Physics	3:0:3(4.5)	spring/fall	◎
	PH402	20.402	Laser Optics	3:0:3(4.5)	spring/fall	◎
	PH413	20.413	Computational Physics	2:3:3(4.5)	spring/fall	◎
	PH421	20.421	Nonlinear Dynamics	3:0:3(4.5)	fall	◎
	PH430	20.430	Biophysics	3:0:3(4.5)	spring/fall	◎
	PH431	20.431	Soft Matter Physics	3:0:3(4.5)	spring	◎
	PH441	20.441	Introduction to Plasma Physics	3:0:3(4.5)	fall	◎
	PH450	20.450	Nuclear and Elementary Particle Physics	3:0:3(4.5)	fall	
	PH462	20.462	Solid State Physics II	3:0:3(4.5)	spring	
	PH471	20.471	Theory of Relativity and Cosmology	3:0:3(4.5)	spring	◎
	PH481	20.481	Astrophysics	3:0:3(4.5)	fall	◎
	PH487	20.487	Lecture on current topics of physics research I	1:0:1(1.5)	summer	
	PH488	20.488	Lecture on current topics of physics research II	2:0:2(3)	summer	
	PH489	20.489	Special Topics in Physics	3:0:3(4.5)	spring/fall	◎
Research	PH490	20.490	B.S. Thesis Research	0:6:3	spring/fall	
	PH491	20.491	Introduction to Physics Research	1:0:1	spring	
	PH495	20.495	Individual Study	0:6:1	spring/fall	
	PH496	20.496	Seminar	1:0:1	spring/fall	
	PH497	20.497	Special Topics in Experimental Physics	2:2:2(3)	fall	

※ ◎ : Course mutually recognized by undergraduate and graduate programs

Classification	Course No.	Computer Code	Course Name	Lecture; Lab.; Credit (Assignment)	Semester	Note
Mandatory General Course	CC510	11.510	Introduction to Computer Application	2:3:3(10)	spring/fall	
	CC511	11.511	Probability and Statistics	2:3:3(6)	spring/fall	
	CC512	11.512	Introduction to Materials and Engineering	3:0:3(3)	spring/fall	
	CC522	11.522	Introduction to Instruments	2:3:3(8)	fall	
Mandatory Major Course	PH503	20.503	Quantum Mechanics I	3:0:3(4.5)	spring	◎
	PH507	20.507	Advanced Electrodynamics I	3:0:3(4.5)	fall	◎
	PH601	20.601	Applied Physics Laboratory I	0:9:3(4.5)	spring or fall	
Elective Course	PH504	20.504	Quantum Mechanics II	3:0:3(4.5)	fall	◎
	PH505	20.505	Advanced Mechanics	3:0:3(4.5)	spring	◎
	PH508	20.508	Advanced Electrodynamics II	3:0:3(4.5)	spring	◎
	PH509	20.509	Statistical Mechanics	3:0:3(4.5)	spring	◎
	PH602	20.602	Applied Physics Laboratory II	0:9:3(4.5)	fall	
	PH611	20.611	Advanced Solid State Physics I	3:0:3(4.5)	spring/fall	
	PH612	20.612	Advanced Solid State Physics II	3:0:3(4.5)	spring/fall	
	PH613	20.613	Semiconductor Physics	3:0:3(4.5)	spring/fall	
	PH615	20.615	Introduction to Phase Transition	3:0:3(4.5)	spring/fall	
	PH616	20.616	Semiconductor Photonics	2:3:3(4.5)	spring	
	PH621	20.621	Advanced Wave Optics	3:0:3(4.5)	spring/fall	
	PH622	20.622	Geometrical Optics	3:0:3(4.5)	spring/fall	
	PH624	20.624	Quantum Optics	3:0:3(4.5)	spring/fall	
	PH627	20.627	Fiber Optics	3:0:3(4.5)	spring/fall	
	PH641	20.641	Advanced Plasma Physics	3:0:3(4.5)	spring/fall	
	PH642	20.642	Plasma Waves	3:0:3(4.5)	spring/fall	
	PH643	20.643	Applied Plasma Physics	3:0:3(4.5)	spring/fall	
	PH650	20.650	Advanced Soft Matter Physics	3:0:3(4.5)	fall	
	PH653	20.653	Relativistic Qauntum Field Theory I	3:0:3(4.5)	spring/fall	
	PH654	20.654	Relativistic Qauntum Field Theory II	3:0:3(4.5)	spring/fall	
	PH711	20.711	Physics of Magnetism	3:0:3(4.5)	spring/fall	
	PH713	20.713	Physics of Superconductivity	3:0:3(4.5)	spring/fall	
	PH716	20.716	Topics in Solid State Physics I	3:0:3(4.5)	spring/fall	
	PH717	20.717	Topics in Solid State Physics II	3:0:3(4.5)	spring/fall	
	PH721	20.721	Nonlinear Optics	3:0:3(4.5)	spring/fall	
	PH724	20.724	Laser Plasma Interactions	3:0:3(4.5)	spring/fall	
	PH741	20.741	Topics in Plasma Physics	3:0:3(4.5)	spring/fall	
	PH742	20.742	Plasma Confinement Theory	3:0:3(4.5)	spring/fall	
	PH754	20.754	Advanced Particle Physics	3:0:3(4.5)	spring/fall	
	PH757	20.757	Topics in Particle Physics	3:0:3(4.5)	spring/fall	
	PH878	20.878	Advanced lecture on current topics of physics research I	1:0:1(1.5)	summer	
	PH879	20.879	Advanced lecture on current topics of physics research II	2:0:2(3)	summer	
	PH880	20.880	Topics in Physics	3:0:3(4.5)	spring/fall	

Classification	Course No.	Computer Code	Course Name	Lecture; Lab.; Credit (Assignment)	Semester	Note
Research	PH960	20.960	M.S. Thesis		spring/fall	
	PH965	20.965	Independent Study in M.S.		spring/fall	
	PH966	20.966	M.S. Seminar	1:0:1	spring/fall	
	PH969	20.969	Introduction to Physics Research	1:0:1	pring	
	PH980	20.980	Ph.D. Thesis		spring/fall	
	PH986	20.986	Ph.D. Seminar	1:0:1	spring/fall	
	PH990	20.990	Physics Colloquium	1:0:0	spring/fall	

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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	PH241	Modern Physics	PH241	Modern PhysicsI	change of course title
			PH242	Modern PhysicsII	course abolished
Undergraduate	PH241	Modern Physics	PH243	Introduction to Modern Physics	course abolished
Undergraduate	PH351	Physics Laboratory III	PH352	Physics Laboratory IV	course abolished
Undergraduate	PH391	Optics	PH391	Optics I	change of course title
Undergraduate	PH402	Laser Optics	PH392	Laser Optics II	course abolished
Undergraduate	PH421	Nonlinear Dynamics	PH421	Fluid physics	course abolished
			PH421	Chaos and Nonlinear Dynamics	change of course title
Undergraduate	PH491	Introduction to Physics Research	PH494	Introduction to Physics Research	course abolished
Undergraduate	PH497	Special Topics in Experimental Physics	PH451	Special Topics in Experimental Physics	change of course title
Graduate	PH624	Quantum Optics	PH624	Laser and Quantum Optics	change of course title
Graduate	PH653	Relativistic Qauntum Field Theory I	PH653	Advanced Quantum Mechanics I	change of course title
Graduate	PH654	Relativistic Qauntum Field Theory II	PH654	Advanced Quantum Mechanics III	change of course title
Graduate	PH969	Introduction to Physics Research	PH968	Introduction to Physics Research	course abolished
			PH614	Light Scattering Spectroscopy	course abolished
			PH625	Advanced Spectroscopy	course abolished
			PH726	Semiconductor Optics	course abolished

※Substitute courses may differ according to the effective year of the requirements.