Course Listing and Curriculum Map for the Physics Major

Requirements	Semester Course Number	Course Title	Semester Units		Quarter Equivalent Course Number	Quarter Credits	Notes	Relevant Learning Goals Achieved (see below)
Required Non-Physics Core:								
Introductory Math	Math 1251	Calc I	5		Math 151	5	Semester sequence has same content as quarter sequence	2
	Math 1258	Calc II	5		Math 152	5		
					Math 153	5		
Upper Division Math	Math 2249	CalcIII	3		Math 254	5	Content of current 254	2
	Math 2431	LinAlg/DiffEq	3		Math 415	4	Merges 415 and 568	2
					Math 513	3		
Prerequisite	CSE 1211	Intro to C++	2		CSE 202	4	Same content	3
Physics Core:								
Introductory	Physics 1250/1250H	Mechanics, Thermal Physics, Waves	5		Physics 131/131H	5	Semester sequence has same content as quarter sequence	1,2
	Physics 1251/1251H	E&M, Optics, Modern Physics	5		Physics 132/132H	5		
					Physics 133/133H	5		
Intermediate	Physics 2300	Dynamics of Particles and Waves I	4		Physics 261	4	Semester sequence has same content as quarter sequence	1,2
	Physics 2301	Dynamics of Particles and Waves II	4		Physics 262	4		
	Physics 2095	Introductory Seminar	1		Physics 295	1	Same Content	6
Upper Division	Physics 5400/5400H	E&M I	4		Physics 555	4	Semester course has all of 555 and some of 656	1,2
					Physics 656	4		
	Physics 5500/5500H	Quantum I	4		Physics 631	4	Semester course has all of 631 and some of 632	1,2
					Physics 632	4		

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Requirements	Semester Course Number	Course Title	Semester Units		Quarter Equivalent Course Number	Quarter Credits	Notes	Relevant Learning Goals Achieved (see below)
Physics Labs Core	Physics 3700	Methods in Experimental Physics	2		Physics 416	4	Same content	3,4,5
	Physics 4700	Intro Electronics for Physicists	3		Physics 517	4	Same content	3,4,5
	Physics 5700	Advanced Laboratory	3		Physics 616	4	Same content	3,4,5
		Physics Electives:						
	Physics 3455H	Honors Holography	3		Physics H455	4	Same content	3,4,5
	Physics 3470	Optics	3		Physics 570	4	Same content	2
Grad introductory	Physics 6802	Topics in Elementary Particle Physics	4		Physics 780.xx	4	Enhanced content	1,7
	Physics 6803	Topics in Astroparticle Physics	4		Physics 780.xx	4	Enhanced content	1,7
	Physics 6804	Topics in Atomic and Molecular Physics	4		Physics 780.xx	4	Enhanced content	1,7
	Physics 6805	Topics in Nuclear Physics	4		Physics 780.xx	4	Enhanced content	1,7
	Physics 6806	Topics in Condensed Matter Physics	4		Physics 780.xx	4	Enhanced content	1,7
	Physics 6809	Topics in Biophysics	4		Physics 780.xx	4	Enhanced content	1,7
	Physics 6810	Topics in Computational Physics	4		Physics 780.xx	4	Enhanced content	1,7
	Physics 6820	Special Topics	4		Physics 780.xx	4	Enhanced content	1,7

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Requirements	Semester Course Number	Course Title	Semester Units		Quarter Equivalent Course Number	Quarter Credits	Notes	Relevant Learning Goals Achieved (see below)
Additional Required Courses, Advanced Physics Option								
	Physics 5401H	E&M II	4		Physics 656	4	Semester course has some of 656 and all of 657	1,2
					Physics 657	4		
	Physics 5501H	Quantum II	4		Physics 632	4	Semester course has some of 632 and all of 633	1,2
					Physics 633	4		
	Physics 5600	Statistical Physics	4		Physics 621	4	Semester course has all of 621 and some of 622	1,2
					Physics 622	4		
	Physics 5300	Theoretical Mechanics	4		Physics 664	4	Enhanced content	1,2
Additional Required Courses, Applied Physics Option								
	1 Physics Elective From Above List		4		Elective	4	Enhanced content	1,2
	15 Credit hours from Minor, Double Major		15			18	Enhanced content	7
Additional Required Courses, Physics Teaching Option								
	1 Physics Elective From Above List		4		Elective	4	Enhanced content	1,2
	Physics 5100	ysics for In-Service Teach	4		Physics 670	5	Same content	7
	Bio 113		4		Bio 113	5	Enhanced content	7
	Earth Sci 110		3		Earth Sci 110	3	Same content	7
	Geog 520		3		Geog 520	3	Same content	7
	Astron 291		3		Astron 291	3	Same content	7
	Chem 121		5		Chem 121	5	Semester sequence has same content as quarter sequence	7
	Chem 122		5		Chem 122	5		
					Chem 123	5		

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Requirements	Semester Course Number	Course Title	Semester Units		Quarter Equivalent Course Number	Quarter Credits	Notes	Relevant Learning Goals Achieved (see below)
	Additional Required Courses, Life Sciences Option							
	1 Physics Elective From Above List		4		Elective	4	Same content	1,2
	Bio 113		4		Bio 113	5	Enhanced content	7
	Bio 114		4		Bio 114	5	Enhanced content	7
	Chem 121		5		Chem 121	5	Semester sequence has same content as quarter sequence	7
	Chem 122		5		Chem 122	5		
					Chem 123	5		
	Chem 251		4		Chem 251	4	Semester sequence has same content as quarter sequence	7
	Chem 252		4		Chem 252	4		
					Chem 253	4		
	Chem 254		2		Chem 254	3	Same content	
	Chem 255		2		Chem 255	3	Same content	7
Learning Goal	1	Undergraduate Physics majors will acquire a basic mastery of fundamental areas of physics, from classical mechanics, through electricity and magnetism, and finally to modern physics including quantum mechanics and relativity.						
	2	Undergraduate Physics majors will develop powerful analytical and problem solving skills in areas involving both physics and mathematics.						
	3	Undergraduate Physics majors will acquire a basic mastery of experimental physics						
	4	Undergraduate Physics majors will acquire a basic mastery of data reduction and error analysis						
	5	Undergraduate Physics majors will be able to effectively communicate their physical understanding both professionally and colloquially (orally and in writing).						
	6	Undergraduate majors will be apprised of and encouraged to participate in academic research, industrial research and/or outreach activities which are consistent with their interest, ability and postgraduate plans.						
	7	Undergraduate majors will acquire expertise relevant to their chosen program option						