Expected Course Offerings by Semester

APPLIED PHYSICS

The schedule below is based on historical patterns and expected scheduling. The semester and location in which a course may be offered **is subject to change** due to instructor availability, student demand, and the need to provide an appropriate balance of subjects and course levels in all semesters.

Course Offering Modalities

In-Person (IP)
[**01** = Homewood Campus]
[**31** = Applied Physics Lab]

Virtual-Live (VL)
[**01VL** = Synchronous at Homewood]
[**3VL** = Synchronous at APL]
[**8VL** = Synchronous Online]

Online (O)
[**81** = Asynchronous Online]

Core Courses		***Select four (4) - At least three (3) must be from the first six (6)***			
Course #	**Course Name**	**Pre-Req***	**Summer**	**Fall**	**Spring**
615.641	Mathematical Methods for Physics and Engineering		O	O	O
615.642	Electromagnetics			O	O
615.651	Statistical Mechanics and Thermodynamics		O	O	O
615.653	Classical Mechanics	615.641	O	O	O
615.654	Quantum Mechanics	615.641, 615.653		O	O
615.665	Modern Physics		O		O
615.671	Principles Of Optics		O	O	O
615.680	Materials Science		VL		
Electives		***At Least six (6) of the following***			
Course #	**Course Name**	**Pre-Req***	**Summer**	**Fall**	**Spring**
615.611	Classical Physics				
615.644	Physics of Space Systems I				
615.645	Physics of Space Systems II	615.644* or 615.744*			
615.646	Physics of Magnetism				
615.647	Fundamentals of Sensors				
615.648	Alternate Energy Technology				
615.662	Introduction to Astrophysics			O	
615.731	Photovoltaic & Solar Thermal Energy Conversion				
615.744	Physics of Space Systems I				
615.745	Physics of Space Systems II	615.644* or 615.744*			
615.747	Sensors and Sensor Systems			O	O
615.748	Introduction to Relativity				O
615.751	Modern Optics	615.642		VL	VL
615.755	Space Physics	615.642			
615.757	Solid State Physics	615.654			
615.760	Physics of Semiconductor Devices				
615.761	Intro To Oceanography			O	
615.762	Applied Computational Electromagnetics			VL	
615.765	Chaos and Its Applications		O	O	O
615.769	Physics of Remote Sensing				O
615.772	Cosmology	615.748	O/VL	O/VL	
615.775	Physics of Climate				O
615.778	Optical System Design and Modelling	615.671			VL
615.780	Optical Detectors & Applications			O	
615.781	Quantum Information Processing	615.654		O	O
615.782	Optics and Matlab				O
615.800	Applied Physics Project				
615.802	Directed Studies in Applied Physics				

See catalog of complete list and description of prerequisites.
(*indicates a suggested, non-requisite course)

Expected Course Offerings by Semester

APPLIED PHYSICS

The schedule below is based on historical patterns and expected scheduling. The semester and location in which a course may be offered **is subject to change** due to instructor availability, student demand, and the need to provide an appropriate balance of subjects and course levels in all semesters.

Course Offering Modalities

In-Person (IP)
[**01** = Homewood Campus]
[**31** = Applied Physics Lab]

Virtual-Live (VL)
[**01VL** = Synchronous at Homewood]
[**3VL** = Synchronous at APL]
[**8VL** = Synchronous Online]

Online (O)
[**81** = Asynchronous Online]

Materials and Condensed Matter Concentration Core Courses

Course #	Course Name	Pre-Req*	Summer	Fall	Spring
615.641	Mathematical Methods for Physics and Engineering		O	O	O
615.642	Electromagnetics			O	O
615.651	Statistical Mechanics and Thermodynamics		O	O	O
615.680	Materials Science		VL		

Materials and Condensed Matter Concentration Electives ***At least four (4) of the following; Six (6) total courses required***

Course #	Course Name	Pre-Req*	Summer	Fall	Spring
515.617	Nanomaterials		O		O
515.635	Mechanical Properties of Materials				O
525.606	Electronic Materials				VL
525.621	Introduction to Electronics and the Solid State			VL	
535.684	Modern Polymeric Materials				O
535.732	Fatigue and Fracture of Materials				
535.748	Stress Waves, Impacts and Shockwaves				
615.646	Physics of Magnetism				
615.647	Fundamentals of Sensors				
615.747	Sensors and Sensor Systems			O	O
615.757	Solid State Physics	615.654			
615.760	Physics of Semiconductor Devices				
615.800	Applied Physics Project				
615.802	Directed Studies in Applied Physics				

Photonics Concentration Core Courses

Course #	Course Name	Pre-Req*	Summer	Fall	Spring
615.641	Mathematical Methods for Physics and Engineering		O	O	O
615.654	Quantum Mechanics	615.641, 615.653		O	
615.671	Principles Of Optics		O	O	O
525.613	Fourier Techniques in Optics			O	
525.625	Laser Fundamentals	525.605		O	
525.691	Fundamentals of Photonics				O

Photonics Concentration Electives ***At Least four (4) of the following***

Course #	Course Name	Pre-Req*	Summer	Fall	Spring
525.613	Fourier Techniques in Optics			O	
525.625	Laser Fundamentals	525.605		O	
525.636	Optics & Photonics Lab	525.605			
525.691	Fundamentals of Photonics				O
525.753	Laser Systems and Applications	525.625			
525.756	Optical Propagation, Sensing, and Backgrounds				VL
525.772	Fiber-Optic Communication Systems	525.691		VL	
525.796	Introduction to High-Speed Optoelectronics		VL		
525.797	Advanced Fiber Optic Laboratory	525.691 or 615.751			
615.751	Modern Optics	615.642		VL	VL
615.778	Optical System Design and Modelling	615.671			VL
615.780	Optical Detectors & Applications			O	
615.781	Quantum Information Processing	615.654		O	O
615.782	Optics and Matlab				O
615.800	Applied Physics Project				
615.802	Directed Studies in Applied Physics				

See catalog of complete list and description of prerequisites.
(*indicates a suggested, non-requisite course)