APPLIED & ENGINEERING PHYSICS COTERMINAL MASTER'S PROGRAM
Sample Study Programs (courses subject to change)

with bioengineering depth classes

Autumn Quarter		
Course	Units	Title
Applied Physics 201	4	Electrons and Photons
Applied Physics 315	4	Methods in Computational Biophysics
Bioengineering 300A	3	Molecular and Cellular Bioengineering
Bioengineering 361	3	Biomaterials in Regenerative Medicine
Bioengineering 393	1	Bioengineering Departmental Research Colloquium
Autumn total	15	
Winter Quarter		
Course	Units	Title
Applied Physics 202	4	Introductory Biophysics
Applied Physics 204	4	Quantum Materials
Bioengineering 300B	3	Engineering Concepts Applied to Biology
Bioengineering 335	3	Molecular Motors I
Bioengineering 393	1	Bioengineering Departmental Research Colloquium
Winter Total	15	
Spring Quarter		
Course	Units	Title
Applied Physics 203	4	Atoms, Fields and Photons
Applied Physics 232	4	Advanced Imaging Lab in Biophysics
Applied Physics 293	3	Theoretical Neuroscience
Bioengineering 223	3	Physics and Engineering of X-ray Computed Tomography
Bioengineering 393	1	Bioengineering Departmental Research Colloquium
Spring Total	15	
Total units	45	

with electrical engineering depth classes in photonics

Autumn Quarter		
Course	Units	Title
Applied Physics 201	4	Electrons and Photons
Applied Physics 207	3	Photonics Laboratory
Materials Science and Engineering 346	3	Nanophotonics
Electrical Engineering 268	3	Introduction to Modern Optics
Applied Physics 483	1	Optics and Electronics Seminar
Autumn total	14	
Winter Quarter		
Course	Units	Title
Applied Physics 202	4	Introductory Biophysics

Applied Physics 204	4	Quantum Materials
Electrical Engineering 334	3	Micro and Nano Optical Device Design
Electrical Engineering 243	3	Semiconductor Optoelectronic Devices
Applied Physics 483	1	Optics and Electronics Seminar
Winter Total	15	
Spring Quarter		
Course	Units	Title
Applied Physics 203	4	Atoms, Fields and Photons
Applied Physics 227	3	Quantum Device Physics of Atomic and Semiconductor Systems
Electrical Engineering 309	3	Semiconductor Memory Devices
Electrical Engineering 340	3	Optical Micro and Nano Cavities
Applied Physics 290	2	Directed Study
Applied Physics 483	1	Optics and Electronics Seminar
Spring Total	16	
Total units	45	

with materials science and engineering depth classes

Autumn Quarter		
Course	Units	Title
Applied Physics 201	4	Electrons and Photons
Applied Physics 219	3	Solid State Physics and the Energy Challenge
Materials Science and Engineering 203	3	Atoms Arrangements in Solids
Materials Science and Engineering 256	3	Solar Cells, Fuel Cells, and Batteries: Materials for the Energy Solution
Applied Physics 470	1	Condensed Matter Seminar
Autumn total	14	
Winter Quarter		
Course	Units	Title
Applied Physics 202	4	Introductory Biophysics
Applied Physics 204	4	Quantum Materials
Electrical Engineering 243	3	Semiconductor Optoelectronics Devices
Materials Science and Engineering 204	3	Thermodynamics and Phase Equilibria
Applied Physics 470	1	Condensed Matter Seminar
Winter Total	15	
Spring Quarter		
Course	Units	Title
Applied Physics 203	4	Atoms, Fields and Photons
Materials Science and Engineering 322	3	Transmission Electron Microscopy Laboratory
Materials Science and Engineering 343	3	Organic Semiconductors for Electronics and Photonics
Materials Science and	3	Rate Processes in Materials

Engineering 207		
Applied Physics 290	2	Directed Study
Applied Physics 470	1	Condensed Matter Seminar
Spring Total	16	
Total units	45	

with mechanical engineering depth classes†

Autumn Quarter		
Course	Units	Title
Applied Physics 201	4	Electrons and Photons
Applied Physics 207	4	Laboratory Electronics
Electrical Engineering 212	3	Integrated Circuit Fabrication Processes
Applied Physics 219	3	Solid State Physics and the Energy Challenge
Electrical Engineering 310	1	Integrated Circuits Technology and Design Seminar
Autumn total	15	
Winter Quarter		
Course	Units	Title
Applied Physics 202	4	Introductory Biophysics
Applied Physics 204	4	Quantum Materials
Electrical Engineering 312	3	Micromachined Sensors and Actuators
Engineering 341	3	Micro/Nano Systems Design and Fabrication
Electrical Engineering 310	1	Integrated Circuits Technology and Design Seminar
Winter Total	15	
Spring Quarter		
Course	Units	Title
Applied Physics 203	4	Atoms, Fields and Photons
Materials Science and Engineering 316	3	Nanoscale Science, Engineering and Technology
Mechanical Engineering 358	3	Heat Transfer in Microdevices
Mechanical Engineering 457	3	Fluid Flow in Microdevices
Applied Physics 290	1	Directed Study
Electrical Engineering 310	1	Integrated Circuits Technology and Design Seminar
Spring Total	15	
Total units	45	

† Students can choose from mechanical engineering depth areas of (i) Fluid Mechanics, (ii) Energy Systems, (iii) High Temperature Gas dynamics, (iv) Dynamics, (v) MEMS, or (vi) Materials and Stress Analysis.