APPLIED SCIENCE, BIOENGINEERING TRACK, MINOR

At William & Mary's School of Computing, Data Sciences & Physics, we empower students and faculty to push boundaries through innovation, interdisciplinary collaboration, and cutting#edge research. Grounded in the university's liberal arts tradition, we cultivate ethical leaders fluent in technology, data, and science–prepared to tackle critical challenges from AI and quantum computing to societal transformation. Through immersive hands#on learning, close mentorship, and engagement with industry and the public sector, CDSP prepares its graduates to generate new knowledge, drive meaningful change, and shape a vibrant future.

The Applied Science Program

The Department of Applied Science (http://www.wm.edu/as/appliedscience) is an interdisciplinary department that focuses on graduate education but also offers an increasingly rich lineup of undergraduate courses and programs. The undergraduate courses are particularly suitable for physics, mathematics, chemistry, computer science, data science, neuroscience and biology. While Applied Science does currently not offer an undergraduate major, Applied Science faculty have mentored numerous self-designed majors with an Applied Science-centric curriculum. Also, minors in Applied Science are offered with a track in either Materials Science & Engineering or Computational Biology.

Applied Science cooperates with affiliated faculty from the Departments of Biology, Chemistry, Computer Science, Geology, Mathematics, Physics, Psychology, and the Virginia Institute of Marine Science (VIMS), as well as from the NASA Langley Research Center (LaRC) and the Thomas Jefferson National Accelerator Facility (JLab).

Core faculty research interests include: Biomaterials, Nanomaterials & Scanning Probe Techniques; Nondestructive Evaluation, Robotics and Medical Imaging; Nanotechnology and Thin Films, Surface Science, Accelerator Science, Electronic and Magnetic Materials Science; Laser Spectroscopy; Solid State Nuclear Magnetic Resonance; Neurophysiology and Cell Biology; Computational Neuroscience; Biophysical Chemistry & Structural Biology; Geospatial Analysis.

Code	Title	Hours
Research		
Select one of the following:		3
APSC 401 & APSC 402	Research Applied Science and Research Applied Science	
APSC 403 & APSC 404	Independent Study in Applied Science and Independent Study in Applied Science	
BIOL 403	Research in Biology	
APSC 495 & APSC 496	Honors and Honors	
Pre-approved Senior Research projects from other departments		
Core Requirements		
APSC 251	Engineering Design	3
BIOL 203	Introduction to Molecules, Cells, Development	3
APSC 201 or BIOL 377	Introduction to Materials Science & Engineering	3
Additional Courses		
Select six credits from the following:		6
APSC 201	Introduction to Materials Science & Engineering	
APSC 301	Mechanics of Materials	
APSC 304	Energy and Thermodynamics	
APSC 327	Introduction to Laser Biomedicine	
APSC 428	Scanning Probe Nanoengineering: Visualization and Manipulation of Matter at Atomic Scales	
APSC 431	Applied Cellular Neuroscience	
APSC 432	Applied Systems Neuroscience	
APSC 440	Respiratory Neurobiology	
APSC 450	Computational Neurosci	
BIOL 301		
BIOL 377		
CHEM 312	Inorganic Chemistry	
PHYS 302	Fluid Mechanics	
Total Hours		**18**