

APPLIED SCIENCE, MATERIALS SCIENCE & ENGINEERING 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
Required Research Experience		
Select one of the following:		2-6
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	
APSC 495 & APSC 496	Honors and Honors	
Pre-approved Senior Research projects from other departments.		
Required Courses		
APSC 201	Introduction to Materials Science & Engineering	3
APSC 301	Mechanics of Materials	3
APSC 422	Introduction to Materials Characterization	3
Additional Courses		7
Additional Courses May Be Selected From the Following:		
APSC 251	Engineering Design	

PHYS 302	Fluid Mechanics
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 427	Biomedical Materials and Devices
APSC 457	Computational Materials Design
CHEM 312	Inorganic Chemistry
Additional APSC Graduate Courses That May Be Taken and Counted With Instructor Permission: ¹	
APSC 607	Mathematical and Computational Methods I
APSC 621	Applied Solid State Science
APSC 623	Materials Science of Surfaces and Interfaces
APSC 627	Lasers in Medicine, Science, and Technology
APSC 637	Introduction to Optoelectronics
APSC 784	Imaging Methods

Total Hours **18-22**