



NANOMEDICINE

Bachelor of Science

Nanomedicine is the use of extremely small particles and devices (1-100 nanometers in size) in the diagnosis and treatment of disease. It is a key enabling approach for revolutionary areas such as targeted drug delivery, regenerative medicine and personalized medicine. Applications of nanomedicine already exist in the treatment of cancer, kidney disease and multiple sclerosis, with many more under development. Virginia Tech has the only Nanomedicine major in the United States.

- ▶ Covers areas such as diagnostic devices, medical imaging tools, drug delivery vehicles, gene therapy, tissue engineering and theranostics.
- ▶ The Nanomedicine major provides broad training across the life and physical sciences.
- ▶ Global Nanomedicine sales were estimated at \$139 billion in 2016.

Careers in Nanomedicine

Diagnostic Imaging
Internal Medicine
Medical Devices & Products
Pharmaceutical Development
Nephrologist
Neurologist
Oncologist
Pharmacology
& many others

Course Offerings

NANOSCIENCE

Intro to Nanoscience
Nanoscience Research Seminar
Undergraduate Research
Quantum Physics of Nanostructures
Nanoscience & the Environment
Nanoscale Synthesis, Fabrication, & Characterization
Professional Dissemination of Nanoscience Research
Introduction to Nanomedicine
Advanced Nanomaterials and Devices

PHYS

General Physics and Lab



CHEM

General Chemistry and Lab
Organic Chemistry and Lab



BIOL

Principles of Biology and Lab
Cell & Molecular Biology for Engineers



MATH

Elementary Calculus



- ▶ Students will also choose 9 credits from a list of restricted electives in various fields (Biology, Chemistry, Neuroscience, Systems Biology, etc.)
- ▶ 8 credits of undergraduate research required as part of degree.