Certificate

Advanced Engineering with a Concentration in Biomedical Engineering Certificate

The Graduate Certificate in Biomedical Engineering Program offers students and professionals the opportunity to further their knowledge with advanced study in the growing area of Biomedical Engineering. The program is designed to provide well-rounded instruction in several key facets of Biomedical Engineering. Those who complete the Program receive the Advanced Engineering Certificate in Biomedical Engineering from Old Dominion University and a letter of recognition from the Batten College of Engineering and Technology. Courses taken for the certificate program may later be applied to the Ph.D. degree in Biomedical Engineering.

Certificate Program Admission Requirements

- Bachelor of Science degree (or equivalent) in an engineering field or undergraduate degree in another relevant STEM field.
- Prerequisites for applicants from non-engineering fields include college-level mathematics, calculus-based physics, and chemistry or biology.

Certificate Program Curriculum Requirements

- Twelve credit hours of graduate course work
- A grade point average of 3.0 or better

BME Fundamentals		
Complete the following Core Courses (9CH)		*9*
BME 711	Biological Mechanisms for Biomedical Engineers	
BME 712	Engineering Fundamentals in Biomedicine	
BME 740	Regenerative Medicine	
BME Electives [1]		
Complete a 3CH BME elective course selected from the following:		*3*
BME 530	Therapy and Function Models for Medical Simulation	
BME 554	Introduction to Bioelectrics	
BME 562	Introduction to Medical Image Analysis	
BME 564	Biomedical Applications of Low Temperature Plasmas	
BME 612	Digital Signal Processing I	
BME 695	Topics in Biomedical Engineering	
BME 700	Cardiovascular Physiology	
BME 702	Biomedical Sciences Journal Club	
BME 710	Advanced Cell Biology	
BME 720	Modern Biomedical Instrumentation	
BME 721	Mathematical Modeling in Physiology	
BME 726	Biomaterials	
BME 731	Finite Element Analysis	
BME 741	Principles of Visualization	
BME 751	Computational and Statistical Methods in Biomedical Engineering	
BME 754	Advanced Bioelectrics	
BME 755	Biomembranes and Ion Channels	
BME 760	Autonomous and Robotic Systems Analysis and Control	
BME 762	Applied Medical Image Analysis	
BME 770	Advanced Study in Biology	
BME 775	Grant Writing in Biology	
BME 783	Digital Image Processing	
BME 785	Advanced Manufacturing Technology	
BME 792	Biomechanics	
BME 794	Cellular Biomechanics	
BME 795	Special Topics in Biomedical Engineering	
BME 797	Independent Study	
Total Credit Hours		**12**

1 Appropriate course substitutions may be considered with permission of the Graduate Program Director.