

# BIOMEDICAL SCIENCES (BMED)

## 500 Level Courses

**BMED 550:** *Special Topics in Biomedicine*. 2 credits.

This course presents various topics in biomedicine in a lecture/seminar format. Students build on the ABS Certificate curriculum to enhance their understanding of biomedical issues and better prepare for careers in the health professions. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Specialized Designation:** Topic Varies

**Recommended Prerequisite:** Successful completion of first semester of the ABS Certificate curriculum (Biochemistry, Biostatistics, Histology).

**Recommended Corequisite:** Spring ABS Certificate courses (Human Anatomy, Human Physiology).

**Registration Restrictions:**

Enrollment limited to students in the SC-CERG-ABS program.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

## 600 Level Courses

**BMED 601:** *Biochemistry and Molecular Biology*. 4 credits.

Principles of biochemistry and cell signaling and current concepts regarding physiological processes at the cellular and molecular levels. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 602:** *Biomedical Statistics*. 3 credits.

Basic principles of biostatistics and epidemiology in theoretical and practical context including: exploring and displaying data appropriately, exploring relationships between two variables, issues of gathering sample data, and understanding randomness and probability. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 603:** *Cell Biology and Microscopic Anatomy*. 3 credits.

Examines basic histological techniques, ultrastructure of the cell, basic tissue types and histology of specific organ systems. Structure-functional and clinical correlations are described. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 604:** *Fundamentals of Human Physiology*. 5 credits.

Essential concepts of physiology and mechanisms of body function are presented at various levels of organization, ranging from cellular and molecular to tissue and organ system levels. Emphasis is placed on understanding the integrated regulation of various body processes among the major systems. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 605: *Introduction to Human Anatomy*. 3 credits.**

Principles of anatomy as well as the pertinent anatomy associated with the thorax, abdomen, and pelvic cavities. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 610: *Principles of Systems Biology*. 2 credits.**

Students will build on their knowledge of cellular and molecular biology, genetics, and physiology to understand how these components combine to give rise to complex systems function found in biology. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Sciences master's degree.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 611: *Molecular Genetics*. 2 credits.**

Students will build on their knowledge of molecular biology and genetics to understand how these components' functions are altered during the inception and course of human disease. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Sciences master's degree.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 612: *Principles of Gross Anatomy*. 1 credit.**

Principles of anatomy as well as the pertinent anatomy associated with the thorax, abdomen, and pelvic cavities. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Science's master's program

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 613: *Pathophysiology*. 3 credits.**

Students build on knowledge of physiologic principles and apply the information to pathologic conditions. A higher understanding of the molecular and genetic basis of pathology will be developed as the mechanisms of disease are studied. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Sciences master's program

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 614: *Introduction to Neuroscience*. 3 credits.**

Achieve specific knowledge of the developmental and evolutionary aspects of the nervous system, to introduce systems neurobiology through study of the visual system and motor system pathways. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Science's master's program

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 651: *Physician and Society*.** 1 credit.

Seminar series explores the cultural, social, economic and ethical factors that affect the practice of medicine in the 21st century. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May be repeated within the degree for a maximum 2 credits.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**

This course is graded on the Satisfactory/No Credit scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 652: *Biomedical Career Pathways*.** 1 credit.

Series of workshops, presentations and field trips. Students will learn study and interview skills to become better prepared to complete AMCAS and secondary applications to medical schools. Offered by College of Science (<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to students with a major in Advanced Biomedical Sciences or Biomedical Sciences.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Seminar

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)

**BMED 653: *Forum and Research*.** 3 credits.

Bi-weekly seminar-style presentations and reading assignments, followed by short student reports, followed by a small group discussions on topics of current interest. Students will prepare a detailed research paper on a topic related to one of the forum topics. Offered by College of Science

(<https://catalog.gmu.edu/colleges-schools/science/>). May not be repeated for credit.

**Recommended Prerequisite:** Admission to Biomedical Sciences master's degree.

**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Graduate Regular scale. (<https://catalog.gmu.edu/policies/academic/grading/>)