

# COLLEGE OF SCIENCE

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The College of Science was established in 1976 and is composed of nine departments within four schools: School of Biological and Environmental Sciences, School of Forensic and Criminal Justice Sciences, School of Mathematics and Applied Informatics, and School of Physical Sciences. While the College of Science Dean's Office is located in Science Building 270, the college operates out of several buildings including the Science Building, Morrow Library, Prichard Hall, and Smith Hall. Some lecture and laboratory classes and faculty offices also are in the Robert C. Byrd Biotechnology Science Center and the Weisberg Applied Engineering Complex.

## Mission of the College

Scientific and technologically trained people are essential to our nation's health and prosperity in a rapidly expanding global economy. Students majoring in baccalaureate degree programs in the College of Science receive a broad education conducive to pursuing a wide range of career options. Course requirements include solid grounding in the student's chosen area of scientific interest along with studies in humanities and the social sciences. Students receive instruction in a learning environment that encourages competency in written and oral communication skills along with the ability to work in groups. Special emphasis is placed on experiential learning through participation in activities such as undergraduate research and internships. For non-science majors, departments in the College of Science offer a series of courses which focus on enhancing science literacy through instruction in integrated science and practical applications of mathematics.

## School of Biological and Environmental Sciences - Dr. Brian Antonsen, Director

The School of Biological and Environmental Sciences (SBES) is committed to teaching students about the science of life from molecular to population scales, and all of the myriad interactions between living and non-living parts of our world. The School includes the Department of Biological Sciences and the Department of Natural Resources and the Environment. These departments offer courses in cell, molecular and medical biology, ecology and evolutionary biology, biotechnology, environmental science, and natural resources and recreation management, among others. Students in SBES are actively engaged in research with faculty mentors, and they frequently publish their work, and make presentations at national meetings. Programs in SBES have been designed to prepare students for careers in the life sciences, or to continue their education in graduate school, or through professional degrees in a variety of health care disciplines. Alumni of these programs have chosen diverse career paths and are now working as health professionals, teaching at all educational levels, serving as environmental researchers and regulators, conducting biomedical and pharmaceutical research, and operating bioscience and consulting businesses that help grow and diversify the West Virginia economy.

## School of Forensic and Criminal Justice Sciences - Dr. Dhruba Bora, Director

The School of Forensic and Criminal Justice Sciences (SFCJS) includes the Department of Criminal Justice and Criminology and the Department of Forensic Sciences. The SFCJS unites the top Master of Science in Forensic Science program in the country with a well-established undergraduate and graduate program in Criminal Justice, and a rapidly growing undergraduate major in Cyber Forensics and Security. SFCJS programs focus on real-world application of criminology and scientific detection technologies. Coursework in these programs is multidisciplinary and prepares students for careers in the criminal justice system as well as graduate programs or law school. Our BA, BS, and MS graduates work throughout the country and the world in classic forensic science, digital forensic science, law enforcement, and information assurance professions.

## School of Mathematics and Applied Informatics - Dr. Alfred Akinsete, Director

The School of Mathematics and Applied Informatics (SMAI) offers undergraduate and graduate programs in the departments of Mathematics and Computer and Information Technology (CIT). CIT students can receive a bachelor's degree in Computer and Information Technology with an emphasis in Web and Mobile Application Development, Computer Applications, or Gaming and Simulation Development. Students of mathematics can earn degrees in Mathematics, Applied Mathematics and Statistics. The award-winning faculty of SMAI take pride in teaching excellence, both in the classroom and in research settings. Our students benefit from small classes, faculty access, and support services designed to ensure their success. Graduates of both Mathematics and CIT programs frequently go on to graduate school. Those who go into the workforce are employed in virtually every sector of the economy.

## School of Physical Sciences - Dr. Michael Castellani, Director

The School of Physical Sciences (SPS) includes the departments of Chemistry, Geology, and Physics. All three departments offer classes with expert faculty complemented by hands on experience in the laboratory or field. Research opportunities for students of the Physical Sciences range in size from nanotechnology to cosmology, and in scope from the theoretical aspects of quantum mechanics to the applied discipline of oil and gas exploration. Class sizes and student to faculty ratios are small, providing some of the best educational experiences available anywhere. A major in Chemistry provides students with preparation to work in the chemical industry, to go on to graduate education in chemistry, or to apply to professional schools in many health-related fields. Majors in Geology receive extensive field training and practical experience, which helps explain our exceptional placement rate (over 95%) of Geology graduates either entering graduate school or securing professional positions in their field of study. A major in Physics provides students with a broad understanding of the laws that govern the universe, from the cosmos to the quark. Physics students acquire a set of highly transferable skills in problem-solving, data analysis, and an understanding of how things work. These skills are in high demand in diverse sectors, opening career paths to physics graduates across different industries, like aerospace, healthcare, energy, materials, technology, computing, education, defense, etc.

Course offerings by all departments within the college are available to science majors and to students in other disciplines who are interested in broadening their skills and knowledge in basic science, mathematics, and computers.

## Departments

- Combined College and Professional Degrees (<http://catalog.marshall.edu/undergraduate/programs-az/science/combined-college-professional-degrees/>)
- Department of Biological Sciences (<http://catalog.marshall.edu/undergraduate/programs-az/science/biological-sciences/>)
- Department of Chemistry (<http://catalog.marshall.edu/undergraduate/programs-az/science/chemistry/>)
- Department of Computer and Information Technology (<http://catalog.marshall.edu/undergraduate/programs-az/science/computer-information-technology/>)
- Department of Criminal Justice and Criminology (<http://catalog.marshall.edu/undergraduate/programs-az/science/criminal-justice-criminology/>)
- Department of Cyber Forensics and Security (<http://catalog.marshall.edu/undergraduate/programs-az/science/cyber-forensics-security/>)
- Department of Geology (<http://catalog.marshall.edu/undergraduate/programs-az/science/geology/>)
- Department of Mathematics (<http://catalog.marshall.edu/undergraduate/programs-az/science/mathematics/>)
- Department of Natural Resources and the Environment (<http://catalog.marshall.edu/undergraduate/programs-az/science/natural-resources-environment/>)
- Department of Physics (<http://catalog.marshall.edu/undergraduate/programs-az/science/physics/>)
- Preparation for Professional Careers in the Health Care Professions (<http://catalog.marshall.edu/undergraduate/programs-az/science/preparation-professional-careers-health-care-professions/>)
- Sustainability, Interdisciplinary Minor (<http://catalog.marshall.edu/undergraduate/programs-az/science/interdisciplinary/>)

## Admission Requirements

The ACT scores required for full admission to the College of Science are a minimum mathematics score of 21 and a minimum composite score of 21. For the SAT, a score of 530 in math and a 1060 composite score are required. Students who are fully admitted are allowed to enroll in the major of their choice.

A student who does not meet these admission requirements but still wishes to pursue a program in the College of Science may gain admission by enrolling as a pre-science major<sup>1</sup> and completing the following requirements:

1. Completion of

Code	Title	Credit Hours
ENG 101 🌱	Beginning Composition	3
ENG 200H 🌱	Texting the World (CT)	3
ENG 201H 🌱	English Comp Honors	3
Total Credit Hours		9

with a grade of C or higher.

2. Completion of one of the following:

Code	Title	Credit Hours
Select one of the following:		
MTH 127	College Algebra-Expanded	3-5
MTH 130	College Algebra	
MTH 132	Precalculus with Sci Applica	
MTH 122	Plane Trigonometry	
MTH 140	Applied Calculus	
MTH 229 🌱	Calculus/Analytic Geom I (CT)	
Total Credit Hours		3-5

with a grade of C or higher. (For Criminal Justice majors, MTH 160 Applied Math Reasoning (CT) will fulfill the math requirement.)

3. A transfer student with a GPA of less than 2.0 who has not passed college algebra with a C or better will be placed in pre-science until he or she has a C or better in one of the following:

Code	Title	Credit Hours
Select one of the following:		
MTH 127	College Algebra-Expanded	3-5
MTH 130	College Algebra	
MTH 132	Precalculus with Sci Applica	
MTH 122	Plane Trigonometry	
MTH 140	Applied Calculus	
MTH 229 🌱	Calculus/Analytic Geom I (CT)	
Total Credit Hours		3-5

- 1 pre-biology, pre-chemistry, pre-computer information & technology, pre-criminal justice, pre-digital forensics, pre-environmental science, pre-geology, pre-mathematics, pre-natural resources & recreation management, and pre-physics

After meeting these requirements students will become fully admitted and will be allowed to declare a major.

## Academic Policies

For students transferring from another institution to Marshall, the College of Science will permit the application of any appropriate transfer credits accepted by the university to meet general education requirements. For coursework to be accepted as fulfilling upper division requirements, that work must have been earned at institutions accredited to offer junior/senior level courses.

## Degree Requirements

In addition to satisfying the requirements for a specific major, students must meet the college requirements outlined below and the university requirements as described in this catalog.

Students entering any baccalaureate degree program in the College of Science are responsible for meeting core foundations, which are baccalaureate program initiatives approved by the faculty and the university president for all students. Students are to consult with their academic/program advisors or the chairperson of their major departments for guidance in determining the specific details of meeting the above-referenced baccalaureate curricular initiatives.

## General College Requirements

1. Candidates for graduation must complete all Marshall University's Core Curriculum requirements as defined in this catalog.
2. Candidates for graduation must apply for graduation through the office of the dean.
3. Candidates for graduation must have a Grade Point Average of 2.0 or higher on all work attempted at Marshall University, and must have an average of 2.0 or higher in their major. Quality point deficiencies in the major cannot be reduced by taking lower division (100/200 level) courses within the major department, except as provided for by the *D/F Repeat Rule*; exceptions may be allowed by the department chair with the concurrence of the dean.
4. A minimum of 120 semester hours of credit is required for graduation. Forty (40) hours must be earned in courses numbered 300-499. Courses taken more than once will only count one time for graduation hours. Courses transferred from two-year or community colleges cannot be used to satisfy the upper division requirement.
5. The *CR/NC* option cannot be used:
  - a. for any course taken to meet the specific requirements for a B.S. degree (see below);
  - b. for any course taken to fulfill the requirements for a departmental major; or
  - c. for any course taken to fulfill the requirements for a minor.
6. Juniors and seniors are required to meet with an advisor in the Dean's Office to review an evaluation to determine if they are making satisfactory progress toward graduation.

## College of Science Requirements for the B.A. and B.S. Degrees

(Requirements vary for some programs. See major-specific requirements for details.)

Code	Title	Credit Hours
<b>Requirements</b>		
<i>Natural and Physical Sciences</i>		
	Courses to be distributed in at least two fields.	11
<i>Mathematics - Calculus</i>		
	Requirement varies by department. Students with lower ACT or SAT scores will be placed in the mathematics sequence at an appropriate level.	3-5
Total Credit Hours		14-16