



2020-2021 SCHOOL PROFILE

Educating the next generation of leaders, scholars, and innovators

The Alabama School of Mathematics and Science offers students educational opportunities they will not find anywhere else in the state of Alabama. ASMS is set apart by its academic rigor, residential learning environment, leadership opportunities, and research focus for students.

WWW.ASMS.NET



OFFICE OF ACADEMIC AFFAIRS

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Welcome to ASMS

The Alabama School of Mathematics and Science is the state of Alabama's only fully public residential high school for highly motivated sophomores, juniors, and seniors seeking advanced studies in math, science, and the humanities. The Alabama State Legislature founded ASMS in 1989 "to better prepare Alabama's future leaders" for STEM (science, technology, engineering, and math) careers. ASMS's mandate encourages it to offer a challenging academic environment for students from all across Alabama and especially to those from underserved counties.



Admissions

Rising 10th and 11th graders from across Alabama apply to attend ASMS. The Admissions Committee receives nearly 600 applications per year and selects approximately the top 17% of applicants. The committee considers ACT score, GPA, extracurricular activities, motivation, maturity, and campus diversity in choosing the best students from the state's 67 counties.

Curriculum

ASMS operates on an accelerated system of three academic terms per year. Students benefit from a challenging curriculum that includes AP courses, honors courses, electives modeled on university seminars, and individualized independent study courses. Access to AP courses and upper-level electives requires department or instructor approval. All students are required to enroll in at least five academic courses per term, but many choose to take on additional research hours and electives in their areas of interest.

Students complete a minimum of 27 Carnegie Units in coursework. Those who surpass the curriculum requirement in a subject area by 1.5 CU may graduate with a "Concentration" in the subject, while

Student Body Demographics

Race / Ethnicity	Students	Percentage
Black or African American	36	14%
Caucasian	151	60%
Hispanic	12	5%
Asian	36	14%
Arab American	2	1%
Multiracial	11	4%
Other	3	1%
Prefer not to answer	3	1%
Total	254	100%

Year in School	Total Students
Seniors	82
Juniors	94
Sophomores	78
Total	254

those who exceed the requirement by 3.0 CU may earn a "Concentration with Distinction" designation. All concentration coursework must meet subject-area GPA requirements set by the department.

Required ASMS Coursework

Biology	1.5 CU
Chemistry	1.5 CU
Computer Science	0.5 CU
English	4.5 CU
Foreign Language	2.0 CU
History	4.0 CU
Mathematics	4.0 CU
Physics	1.5 CU
Special Projects	.75 CU
Electives	5.0 CU



College Preparedness

All ASMS instructors hold advanced degrees in their subject areas and most have experience teaching at postsecondary institutions. All courses are taught at the Honors level or above. Most academic courses are modeled on university equivalents and are taught using college textbooks. Students must maintain a 2.5 GPA. Thanks to ASMS's challenging academics and college-like residential environment, our graduates begin their college experience uniquely prepared to succeed.

Grading

ASMS reports both weighted and unweighted cumulative GPA, which includes transfer coursework from the freshmen and, possibly, sophomore years. ASMS does not rank students. During the Spring 2020 term, ASMS responded to the COVID-19 pandemic by implementing a four-day-per-week remote learning schedule, issuing technology to students in need, and allowing them to apply for optional pass/fail grading.

Research Fellows

ASMS juniors are eligible to apply and be selected for the Research Fellows program. Students conduct scholarly research and complete a bibliography, literature review, conference paper, poster, presentation, and portfolio. Faculty members mentor students on their research. This program, which existed in a limited pilot form during the 2019-2020 school year, is largely on hold for 2020-2021 due to COVID-19.

Special Projects

Between the Winter and Spring Terms, ASMS students participate in a five-day academic event known as Special Projects Week. Each student enrolls in a single intensive course that meets for six hours per day. These specialized courses are designed around the research interests of ASMS faculty, and they introduce students to the exciting challenge of academic and professional labor. All 2021 Special Projects courses will be remote.

Student Life and Leadership

Students at ASMS hold leadership positions that empower them to improve their learning and residential environments. Student Government manages a total annual budget of \$39,500, which it uses to host events, invite guest speakers, and install amenities. Student Ambassadors escort visitors on campus and serve as hosts during official functions. Peer Advisers acclimate new students to dorm life, plan hall activities, and supervise cleaning responsibilities. Students invent and perpetuate memorable campus traditions from the Geekfest convention to Goofy Olympics.



Class of 2020 Statistics

Graduates

79 Students

100% College Bound

Standardized Test Performance

ACT Average Composite Score: 30

SAT Mean Evidence-Based Reading & Writing: 673

SAT Mean Mathematics: 652

SAT Mean Total Score: 1325

National Merit

3 National Merit Finalists

2 Commended Scholars

GPA

4.0-3.75 57 students

3.74-3.5 17 students

3.49-3.0 5 students

AP Data for 2020 Test Takers

Total AP Students 103

Number of Exams 195

AP Students with Scores 3+ 78

% of Total AP Students with Scores 3+ 75.7%



Course Offerings

BIOLOGY

Honors Biology
AP Biology
Anatomy and Physiology
AP Environmental Science
Zoology: Vertebrate, Invertebrate
Classical Genetics
Molecular Genetics and Genomics
Intro to Microbiology
Marine Biology
Biological Systems
Microbial Ecology
Oceanography

CHEMISTRY

Introductory Chemistry
General Chemistry
Organic Chemistry
AP Chemistry
Intro to Organic Chemistry
Biochemistry
Inorganic Chemistry
Environmental Chemistry

COMPUTER AND INFORMATION SCIENCE

Computer Science: Principles
AP Computer Science
Database Design & SQL
Data Science w/ Python
C#
Webpage Development
App Development
Advanced C#
Advanced Java
Advanced Web Development
Computer Ethics
Computer Security Fundamentals
Fundamentals of Programming
Microcomputer Applications

ENGLISH

AP English Language
Sophomore English
American Literature 19th Century
American Literature 20th Century
Dystopian Novel
AP English Literature
British Literature I & II
African-American Literature
Speech Communication
Journalism, Media Literacy,
& Mass Communication
Creative Writing
Shakespeare on Stage
Adv Speech Communications
Out of the Canon
Victorian Women's Studies
Writing about Film

GENERAL ELECTIVES

ASMS Research Fellows
Mythology
Intro to Psychology

FINE ARTS

AP Studio Art
Graphic Design
Survey of the Arts: Music
Survey of the Arts: Visual Arts
Health
Debate
Intro Music Theory
Advanced Music Theory I, II, III
Broadway Blues & Jazz
Theater Arts/Production
Advanced Art I, II, III
Sight Singing & Ear Training
Intro to Sociology

HISTORY

Adv American Studies I & II
Economics
Adv American Government
American Minority Relations
Rock-n-Roll
Revolutions
World War I & II
AP US History
Post-1945 US History
Civil War
America in the 1950s
Heroes & History
Ethics & Govt Policy
Comparative Religions
Human Geography
Human Geography II
Terrorism & Violence
The New South
The Romantic Era
Western Thought II
Women of the Renaissance

MATHEMATICS

Geometry
Intermediate Algebra
Accelerated Algebra
Trigonometry
Precalculus
AP Calculus Review
AP Statistics Review
Differential Calculus
Integral Calculus
BC Calculus
Introduction to Statistics
Visual Mathematics
Number Theory
Multivariable Calculus I & II
Differential Equations
Linear Algebra
Problem Solving
Topology
Advanced Geometry
Complex Analysis
Finite Math
Geometric Design
Intro Real Analysis I & II

PHYSICS

Intro to Physics
Flight Studies
Honors Physics
AP Physics 1 & 2 (AP Physics B)
Robotics
AP Physics C
Intro to Astronomy
Intro to Materials Science
Intro to Medical Physics
Mechanical Engineering
Quantum & Relativity
Principles of Biophysics

WORLD LANGUAGES

Beginning French
Intermediate French
Advanced French
French IV & V
Readings in French
Beginning German
Intermediate German
Advanced German
German IV & V
Readings in German
Beginning Spanish
Intermediate Spanish
Advanced Spanish Reading
Program Abroad: Germany & Spain
Spanish IV

Five-Year Matriculation

Agnes Scott College
Alabama A & M University
Alabama State University
Amherst College
Auburn University
Baylor University
Berklee College of Music
Birmingham Southern College
Brandeis University
Brigham Young University
Brown University
Case Western University
Centre College
Coastal Alabama Community College
Colorado School of Mines
Colorado State University
Columbia University
Cornell University
Dillard University
Embry-Riddle Aeronautical University
Emory University
Florida A & M University
Florida Southern College
Furman University
George Washington University
Georgia Institute of Technology
Hendrix College
Howard University
Illinois Institute of Technology
Jacksonville State University
James Madison University
Johns Hopkins University
Kenyon College
Lake Erie College
Lehigh University
Louisiana State University
Macalester College
Massachusetts Institute of Technology
Mississippi College
Mississippi State University
New York University
Oberlin College
Oglethorpe University
Oxford College of Emory University
Parsons School of Design
Pomona College
Rice University
Samford University
Santa Fe Community College
Southern University and A & M College
Stanford University
Sweet Briar College
Texas A & M University
Tougaloo College
Trenholm State
Trevecca Nazarene University
Trinity University
Tulane University
Tuskegee University
United States Merchant Marine
United States Military Academy
United States Naval Academy
University of Alabama
University of Alabama at Birmingham
University of Alabama at Huntsville
University of California - Davis
University of California - Los Angeles
University of Central Florida
University of Florida
University of Miami
University of Mississippi

University of Montevallo
University of North Alabama
University of North Carolina - Chapel Hill
University of North Carolina - Charlotte
University of Notre Dame
University of Oklahoma
University of Pittsburgh
University of Rochester
University of South Alabama
University of South Florida
University of Southern California
University of Texas - Austin
University of Texas - El Paso
University of Van Amsterdam
University of West Florida
Vanderbilt University
Washington University in St. Louis
Wellesley College
William Carey University
Williams College
Yale University

