



**67**  
AL Counties  
Represented

**100%**  
College  
Acceptance

**16:1**  
Student:Teacher  
Ratio

**STEM**  
CERTIFIED  
through  
Cognia

**100%**  
of faculty have  
Ph.D. or  
Master's degree

**200+**  
courses taught  
at honors level  
or university  
equivalent



# ALABAMA SCHOOL OF MATH AND SCIENCE

*Educating the next generation of leaders, scholars, and innovators*

**2021 - 2022 SCHOOL PROFILE**

## OUR MISSION

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.

## ABOUT ASMS

The Alabama School of Mathematics and Science is the state of Alabama's only fully residential public 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 for 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.

ASMS DEPARTMENT OF ACADEMIC AFFAIRS

1255 DAUPHIN STREET | MOBILE, AL 36604 | 251.441.2100 | MFRYE@ASMS.NET | SCHOOL CODE 011793 | ASMS.NET

## 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 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 Academic Coursework

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

## Student Body Demographics

RACE / ETHNICITY	STUDENTS	PERCENT
Black or African American	29	12.28%
Caucasian	145	61.44%
Hispanic	10	4.23%
Asian	32	13.55%
Arab American	3	1.3%
Multiracial	14	5.93%
Other	2	.85%
Prefer not to answer	1	.42%
Total	236	100%

  

YEAR IN SCHOOL	TOTAL STUDENTS
Seniors	72
Juniors	84
Sophomores	80
Total	236

## 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. For the 2020-2021 school year, ASMS responded to the COVID-19 pandemic by adopting hybrid instructional methods. Effective Fall 2021, ASMS courses are fully in-person.

## Research Fellows

ASMS students are eligible to apply and be selected for the Research Fellows program. Working with the ASMS Research Coordinator and a faculty mentor, participants choose a research topic and then compile a bibliography, conduct research, prepare a paper, deliver a presentation, and defend their work. ASMS encourages students to submit their work to conferences and publications when possible.

## 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.

## 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 2021 Statistics

### GRADUATES

77 Students  
100% College Bound

### STANDARDIZED TEST PERFORMANCE

ACT Average Composite Score: 29  
SAT Mean Evidence-Based Reading & Writing: 660  
SAT Mean Mathematics: 672  
SAT Mean Total Score: 1323

### NATIONAL MERIT

7 National Merit Finalists  
6 Commended Scholars

### GPA

4.0 - 3.75 = 52 students  
3.74 - 3.5 = 21 students  
3.49 - 3.0 = 4 students

## AP Data for 2021 Test Takers

Total AP Students: 119  
Number of Exams: 277  
Average AP Exam Score: 3.3  
% of Exams with Scores 3+: 77%





# Academic Course Offerings

## BIOLOGY

Honors Biology  
AP Biology  
Anatomy and Physiology  
AP Environmental Science  
Zoology  
Classical Genetics  
Intro to Microbiology  
Marine Biology  
Biological Systems  
Microbial Ecology  
Oceanography  
Veterinary Medicine

## 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  
Webpage Development  
App Development  
Advanced C#  
Advanced Java  
Advanced Web Development  
Computer Ethics  
Computer Security Fundamentals  
Cybersecurity  
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  
Gothic Studies

## FINE ARTS

AP Studio Art  
Graphic Design  
Survey of the Arts: Music  
Survey of the Arts: Visual Arts  
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  
Walt Disney's America

## GENERAL ELECTIVES

ASMS Research Fellows  
Debate  
History of Microbiology  
Evolution and Biodiversity  
Qualitative Research Methods  
Molecular Biology  
Mythology  
Intro to Psychology

## 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  
Intro to Game Theory

## PHYSICS

Intro to Physics  
Flight Studies  
Honors Physics

AP Physics 1 & 2  
Robotics  
AP Physics C  
Intro to Astronomy  
Intro to Materials Science  
Intro to Medical Physics  
Mechanical Engineering  
Quantum & Relativity  
Principles of Biophysics  
Lasers and Holography  
Computational Materials Science

## WORLD LANGUAGES

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

## Five-Year Matriculation

Alabama A & M University  
Alabama State University  
Amherst College  
Auburn University  
Barnard College  
Baylor University  
Berklee College of Music  
Birmingham Southern College  
Brandeis University  
Brigham Young University  
Case Western University  
Centre College  
Coastal Alabama Community College  
Colorado School of Mines  
Colorado State University  
Columbia University  
Cornell University  
Dillard University  
Duke University  
Embry-Riddle Aeronautical University  
Emory University  
Florida A & M University  
Florida Southern College  
Furman University  
George Washington University  
Georgia Institute of Technology  
Harvard University  
Harvey Mudd College  
Hendrix College  
Howard University  
Illinois Institute of Technology  
Jacksonville State University  
James Madison University  
Johns Hopkins University  
Kenyon College  
Lake Erie College

Louisiana State University  
Macalester College  
Massachusetts Institute of Technology  
Mississippi College  
Mississippi State University  
Mississippi Valley State University  
New York University  
Oberlin College  
Oglethorpe University  
Oxford College of Emory University  
Parsons School of Design  
Pepperdine University  
Pomona College  
Rice University  
Rose Hulman Institute of Technology  
Samford University  
Santa Fe Community College  
Sarah Lawrence College  
Southern Union Community College  
Southern University and A & M College  
Stanford University  
Swarthmore College  
Sweet Briar College  
Texas A & M University  
Tougaloo College  
Trevecca Nazarene University  
Trinity University  
Troy State University  
Tulane University  
Tuuskegee University  
United States Merchant Marine  
United States Military Academy  
United States Naval Academy  
University of Alabama  
University of Alabama at Birmingham  
University of Alabama in 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 Dundee  
University of Maine  
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 Tennessee  
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

