

# SCHOOL PROFILE

CEEB# 262-147

## Missouri Academy Administration:

Cleo Samudzi, Ph.D.  
Dean of the Missouri Academy

## General description of the school

Founded in August 2000, Missouri Academy of Science, Mathematics and Computing (Missouri Academy or MASMC) is a two-year, residential, early-college school for high performing and academically talented high school students. It is located on the campus of Northwest Missouri State University and is an integral part of the university. The school enrolls domestic and international students who have completed only 10th grade at their traditional high schools. In essence, the Missouri Academy replaces the junior and senior years of traditional high school. The curriculum is rigorous and consists of all college coursework taught by professors at Northwest Missouri State University. Missouri Academy students sit in the same classrooms side-by-side with traditional university students; and professors have the same high expectations for these students as they do of traditional university students. Thus, all courses taken by Missouri Academy students are:

- Taught on the campus of Northwest Missouri State University
- Taught by regular faculty members of Northwest Missouri State University
- Taken in competition with degree candidates at Northwest Missouri State University
- Offered as regular part of the Northwest Missouri State University academic curriculum

High school students who successfully complete this program receive an Associate of Science (AS) degree, as well as a high school diploma. It is an opportunity for exceptional students to live and study in a community of peers. The Missouri Academy is highly selective and only the best and brightest students are admitted to undertake what is arguably one of the most difficult high school curricula in the Midwest (in the USA).

## School administration

The Missouri Academy is fully part of Northwest Missouri State University (a state-assisted public university), and as such, it is publicly funded. Within the university structure, the Missouri Academy operates semi-autonomously – with its own staff members whose function is to recruit students, manage student residential life and monitor academic progress. However, all academic instruction is provided by university professors as described above. The principal administrator is a dean of the Missouri Academy who reports to the Associate Provost for Undergraduate Studies/Dean of the College of Arts and Sciences at Northwest Missouri State University. Approximately 90% of the Missouri Academy funding comes from the university, and 10% comes from the Missouri Department of Elementary and Secondary Education through the state-funded Average Daily Attendance (K-12) formula funding.

## Admission to the Missouri Academy

To be considered for admission into the Missouri Academy, a high school sophomore must have a minimum ACT composite score of 23 and a minimum mathematics sub-score of 24 OR minimum SAT scores of 1060 total and 560 mathematics sub-score. Furthermore, all students who enroll must have completed Algebra II and Geometry. The admissions committee at the Missouri Academy uses the following five factors during the selection process: (1) ACT/SAT scores, (2) Grade-point average or GPA in 9th and 10th grades, (3) Class rank, (4) Teacher evaluations, (5) Student essays and (6) High school counselor report.

Students must successfully complete two years at the Missouri Academy to graduate. Thus, every fall semester, a new class of incoming students join a class of returning students. The table below shows admissions data for incoming cohorts for the past nine years. The average age of these incoming students is 16.1 years.

	Enrolled students*	Mean ACT**		Mean GPA: (9th-10th) grades	Mean class rank (top x%)	International students	Female/Male	Minority population***
		Composite	Math					
<b>Class of 2010</b>	103	26.0 ± 1.8	26.2 ± 1.9	3.9 ± 0.1	9.8%	10	49/54	16.3%
<b>Class of 2011</b>	96	26.9 ± 1.8	26.6 ± 2.4	3.9 ± 0.1	6.5%	16	47/49	13.4%
<b>Class of 2012</b>	77	26.5 ± 2.5	25.8 ± 1.9	3.9 ± 0.1	7.9%	10	38/39	9.0%
<b>Class of 2013</b>	97	26.6 ± 3.0	26.3 ± 1.8	3.9 ± 0.1	6.7%	18	52/45	12.4%
<b>Class of 2014</b>	70	26.9 ± 2.3	26.4 ± 2.2	3.9 ± 0.1	8.0%	25	38/32	17.7%
<b>Class of 2015</b>	61	26.5 ± 1.8	26.5 ± 2.1	3.8 ± 0.2	9.9%	27	22/39	8.1%
<b>Class of 2016</b>	84	27.6 ± 2.3	26.9 ± 1.6	3.9 ± 0.1	6.6%	36	46/38	6.0%
<b>Class of 2017</b>	61	26.9 ± 2.4	26.7 ± 2.4	3.8 ± 0.1	8.8%	29	32/29	14.5%
<b>Class of 2018</b>	59	25.8 ± 3.0	25.6 ± 2.7	3.8 ± 0.2	11.0%	28	31/28	13.6%

\*Enrolled students means the number of entering (first-year) students per cohort.

\*\*The mean ACT, mean GPA and mean class rank are calculated for domestic students only.

\*\*\*Minorities are US citizens and permanent residents who are non-caucasians.



## Contact us:

[www.nwmissouri.edu/MASMC](http://www.nwmissouri.edu/MASMC)  
or call toll-free 877.398.4615  
local phone: 660.562.1960  
fax: 660.562.1856  
email: [MASMC@nwmissouri.edu](mailto:MASMC@nwmissouri.edu)

**Missouri Academy of Science,  
Mathematics and Computing**  
Northwest Missouri State University  
800 University Drive  
Maryville, MO 64468-6001

# ACADEMICS

## 1. Required core courses for all students

### Science:

- Biological/Life Sciences:
  - Principles of Biology (4 credits)
- Chemical Sciences:
  - Chemistry I (4 credits)
  - Chemistry II (5 credits)
- Physical Sciences:
  - Classical Physics I (5 credits)
  - Classical Physics II (5 credits)

### Mathematics:

- Pre-Calculus (4 credits)
- Calculus I (4 credits)

### Computer Science:

- Computer Programming I (3 credits)

### English/Communication:

- Composition I (3 credits)
- Composition II (3 credits)
- Literature (3 credits)
- Fundamentals of Oral Communication (3 credits)

### Social Science and Humanities:

- America—A Historical Survey (3 credits)
- Introduction to American Government & Politics (3 credits)

### Seminar/Colloquium:

- Missouri Academy Seminar (1st year students) (1 credit)
- Colloquium (2nd year students) (1 credit)

## 2. Required tracks: each student must choose one track

Tracks	Courses
Track-1: Science and Mathematics	<ul style="list-style-type: none"> <li>General Microbiology (4 credits) OR Genetics (4 credits)</li> <li>Scientific Computing (3 credits)</li> <li>Calculus II (5 credits)</li> <li>Humanities elective (3 credits) (approved by the Missouri Academy advisor)</li> </ul>
Track-2: Biomedical Sciences	<ul style="list-style-type: none"> <li>General Microbiology (4 credits)</li> <li>Genetics (4 credits)</li> <li>Probability &amp; Statistics (3 credits)</li> <li>Introduction to Ethics: Bio-Medical Ethics (3 credits)</li> </ul>
Track-3: Engineering and Physics	<ul style="list-style-type: none"> <li>Calculus II (5 credits)</li> <li>Classical Mechanics I (4 credits)</li> <li>Statistics (3 credits)</li> <li>Humanities elective (3 credits) (approved by the Missouri Academy advisor)</li> </ul>
Track-4: Computer Science	<ul style="list-style-type: none"> <li>Computer Programming II (3 credits)</li> <li>Data Structures (3 credits)</li> <li>Discrete Mathematics (3 credits)</li> <li>Network Fundamentals (3 credits) OR Database Systems (3 credits)</li> <li>Humanities elective (3 credits) (approved by the Missouri Academy Advisor)</li> </ul>

In addition to completing required courses, Missouri Academy students have the opportunity to enroll in additional general elective courses (3–12 credits) offered at Northwest Missouri State University – provided the student is in good academic standing. Some of these courses are lower-level (for freshmen and sophomores) and others are higher-level courses (for juniors, seniors, and graduate students). The full complement of courses offered at Northwest Missouri State University is provided in the undergraduate catalog located at [nwmissouri.smartcatalogiq.com/en/2016-2017/Undergraduate-Catalog](http://nwmissouri.smartcatalogiq.com/en/2016-2017/Undergraduate-Catalog).

## 3. Grading system

The grading system for Missouri Academy students is the same as that for Northwest Missouri State University, since Missouri Academy students sit in the same classes and take the same courses as any other traditional university students. The GPA is calculated on an unweighted 4.0 scale with quality points as shown below:

Grade	A	B	C	D	F
Description	Excellent	Very Good	Good	Poor/Pass	Fail
Quality points per trimester	4.0	3.0	2.0	1.0	0.0

## 4. Student academic performance at graduation

Cumulative GPA (Highest possible GPA = 4.0)	Class of 2010 (63)*	Class of 2011 (74)*	Class of 2012 (53)*	Class of 2013 (61)*	Class of 2014 (44)*	Class of 2015 (45)*	Class of 2016 (67)*	Class of 2017 (48)*
% of students with GPA > 3.5	36%	54%	49%	57%	61%	47%	60%	67%
% students with GPA 3.0 – 3.5	48%	35%	42%	38%	34%	44%	33%	29%
% students with GPA 2.75 – 3.0	16%	11%	9%	5%	5%	7%	7%	2%
% students with GPA < 2.75	0%	0%	0%	0%	0%	2%	0%	2%

\*Number of students graduating per class

## 5. Sample course-taking sequence

	Trimester-1	Trimester-2	1 <sup>st</sup> May session
First year	Principles of Biology (4) English Composition I (3) Pre-Calculus (4) Chemistry I (4) Missouri Academy Seminar (1)	Calculus I (4) Chemistry II (5) English Composition II (3) Track-1 & Track-3: Humanities Elective (3) Track-2: Bio-Medical Ethics (3) Academic and Career Pathways (0)	Five or six courses are offered during the May session for Missouri Academy students. Each student is required to take one course: <ul style="list-style-type: none"> <li>General Microbiology (4)</li> <li>Intro to American Government &amp; Politics (3)</li> <li>Calculus II (5)</li> <li>Humanities Elective (3)</li> <li>Literature (3)</li> <li>Computer Programming I or II (3)</li> </ul>
	15 – 16 credit hours	15 – 17 credit hours	3 – 5 credit hours
Second year	Classical Physics I (5) Track-1 & Track-3: Calculus II (5) Track-2: Probability & Statistics (3) Literature (3) Oral Communication (3) Track-4: Discrete Mathematics (1) College Application Process (0)	Classical Physics II (5) Computer Programming I (3) Intro to American Government & Politics (3) Track-1 & Track-2: Genetics (4) Track-3: Statics (3) Track-4: Network Fundamentals (3) or Database Systems (3) Colloquium (1)	Five or six courses are offered during the May session for Missouri Academy students. Each student is required to take one course: <ul style="list-style-type: none"> <li>Track-3: Classical Mechanics I (4)</li> <li>Computer Programming I or II (3)</li> <li>Elective (3)</li> <li>Elective (3)</li> </ul>
	15 – 17 credit hours	15 – 16 credit hours	3 – 5 credit hours

The tables below show Missouri Academy (MASMC) student performance on the post-admission ACT as compared with that of students across the state of Missouri (Mo.).

Class	Average post-admission ACT scores											
	Students tested		English		Mathematics		Reading		Science		Composite	
	MASMC	Missouri	MASMC	Missouri	MASMC	Missouri	MASMC	Missouri	MASMC	Missouri	MASMC	Missouri
2010	57	48,290	28.2	21.5	29.5	21.0	27.6	22.0	28.2	21.6	28.5	21.6
2011	66	48,565	29.2	21.5	30.8	21.0	28.0	21.9	28.8	21.6	29.4	21.6
2012	45	49,222	28.4	21.4	29.9	21.1	28.9	21.9	30.0	21.5	29.4	21.6
2013	44	49,217	29.0	21.4	31.0	21.0	29.4	21.9	29.5	21.6	29.8	21.6
2014	36	48,865	29.0	21.6	31.8	21.1	28.3	22.3	31.1	21.7	30.2	21.8
2015	30	49,640	28.9	21.4	31.3	21.0	28.9	22.2	30.8	21.7	30.1	21.7
2016	26	68,446	29.0	19.7	33.4	19.8	27.6	20.6	29.7	20.4	30.0	20.2
2017	44	68,480	29.0	19.8	31.7	19.9	27.7	20.8	29.3	20.5	29.6	20.4

Class	Percent of students meeting college readiness benchmarks*											
	Students tested		English		Mathematics		Reading		Science		Meeting all	
	MASMC	Missouri	MASMC	Missouri	MASMC	Missouri	MASMC	Missouri	MASMC	Missouri	MASMC	Missouri
2010	57	48,290	100	73	98	44	93	57	93	32	88	26
2011	66	48,565	100	73	100	44	94	56	92	32	86	26
2012	45	49,222	100	73	98	46	96	56	96	33	91	27
2013	44	49,217	100	72	98	45	91	49	98	41	89	28
2014	36	48,865	100	72	100	45	83	51	100	42	83	29
2015	30	49,640	100	71	100	44	93	51	97	42	90	30
2016	26	68,446	100	59	100	35	85	40	92	32	81	22
2017	44	64,480	100	59	100	34	68	43	95	34	68	23

\*A benchmark score is the minimum score needed on an ACT subject-area test to indicate a 50% chance of obtaining a B or higher, or about a 75% chance of obtaining a C or higher in the corresponding credit-bearing course.

## Student development

### Student development philosophy

Student development is an important part of the experience at the Missouri Academy. Throughout the two years the Missouri Academy Residential Life staff develops programs designed to provide support for student growth in leadership, responsibility and citizenship.

Most students who attend the Missouri Academy are not only high performing in science, mathematics, and computing, but are also gifted/ talented in music, arts, the humanities, athletics and community service. They have performed extremely well at local, statewide and multi-state appearances for Model United Nations, Boys State and Girls State, community service projects, musical ensembles and theatre.

### Clubs and organizations

Missouri Academy students have opportunities to participate in many activities and organizations. Some of the clubs and organizations are only for Missouri Academy students, and others are university-wide and appropriate for adolescents 15-18 years of age. Some examples of these clubs and organizations include:

### Missouri Academy clubs and organizations:

- Student Government Association
- Beta Club
- Yearbook Club
- Model United Nations
- Future Business Leaders of America (FBLA)
- Missouri Academy Mathematics Team
- Robotics Club
- Residential Life Committee
- Prom Committee
- Improv Club
- Student Activities Committee
- Second Year Experience
- Science Olympiad

### University-wide clubs, organizations and other activities:

- Northwest Marching Band
- Northwest Orchestra
- Northwest Residence Hall Association
- Religious organizations
- Forensics
- Research and internships
- Northwest Student Senate
- International student organizations

### Community service

Community service is central to the philosophy and living/learning community of the Missouri Academy. Students participate in voluntary community service activities throughout the two years in residence. These community service activities range from painting homes in the local Maryville community, to helping in nursing homes, to tutoring in local schools, to adopting a highway, to a canned food drive and assisting with care of animals at the local Humane Society of Maryville.



## Missouri Academy graduate matriculations

<b>Class of 2012</b>	American University Brigham Young University–Provo Carnegie Mellon University Columbia University Georgia Institute of Technology Handong Global University Missouri University of Science and Technology Missouri State University	Northwest Missouri State University Rice University Saint Louis University Seattle University St. Louis College of Pharmacy Truman State University University of Arkansas–Fayetteville University of California–Berkeley	University of Illinois–Urbana/Champaign University of Missouri–Kansas City University of Missouri–Columbia University of Oxford–England University of Toronto University of Virginia Vassar College Xavier University of Louisiana
<b>Class of 2013</b>	Amherst College Boston University Brigham Young University Cornell University Creighton University Georgia Institute of Technology Harvard University Johns Hopkins University Missouri University of Science and Technology New York University	Northwest Missouri State University Oberlin College Ohio State University Rutgers University St. Louis College of Pharmacy Union College United States Air Force Academy University of California–Berkeley University of Chicago University of California–San Diego	University of Illinois–Urbana/Champaign University of Kansas University of Minnesota–Twin Cities University of Missouri–Columbia University of Missouri–Kansas City University of Missouri–St. Louis University of Washington–Seattle Washington University–St. Louis William Jewel College
<b>Class of 2014</b>	Case Western Reserve University Colorado State University Cornell University Georgia Institute of Technology Iowa State University Johns Hopkins University Korea Advanced Institute of Science and Technology McGill University (Canada) MidAmerica Nazarene University Missouri State University	Missouri University of Science and Technology New York University Northwest Missouri State University Pepperdine University Rochester Institute of Technology Saint Louis University Trinity University Truman State University University at Albany, SUNY University of California–Berkeley	University of California–Los Angeles University of Illinois–Urbana/Champaign University of Missouri–Columbia University of Missouri–Kansas City University of Missouri–Kansas City (Medicine) University of Missouri–St. Louis University of Oklahoma University of Rhode Island University of Washington University of Washington–Seattle
<b>Class of 2015</b>	Cooper Union Cornell University Duke University Georgia Institute of Technology Hannibal LaGrange University Johns Hopkins University Korea Advanced Institute of Science & Technology Missouri University of Science and Technology Missouri Southern State University	Missouri State University North Carolina State University Northwest Missouri State University Pennsylvania State University Rice University Rochester Institute of Technology Saint Louis University School of Art Institute of Chicago State University of New York at Oswego Truman State University	University of California–Davis University of Illinois at Urbana-Champaign University of Iowa University of Kansas University of Missouri–Columbia University of Nevada Las Vegas University of Pittsburgh University of Rhode Island University of Rochester US Military Academy at West Point
<b>Class of 2016</b>	Arkansas State University Boston College Brown University Case Western Reserve University Clemson University Creighton University Fordham University George Washington University Georgia Institute of Technology Grinnell College Hamilton College La Sierra University Maryville University of St. Louis Missouri State University	Missouri University of Science and Technology Northeastern University Northwest Missouri State University Purdue University Rensselaer Polytechnic Institute St. Louis College of Pharmacy Saint Louis University The Ohio State University Truman State University University of California–Berkeley University of California–Davis University of California–Irvine University of California–Los Angeles University of California–San Diego	University of California–Santa Barbara University of California–Santa Cruz University of Chicago University of Illinois–Urbana/Champaign University of Kansas University of Michigan University of Missouri–Columbia University of Missouri–Kansas City University of Missouri–St. Louis University of Nebraska–Lincoln University of Pittsburgh University of Rhode Island University of Rochester University of Washington–Seattle
<b>Class of 2017</b>	Baylor University Carthage College Cornell University Franklin & Marshall College Jacobs University Bremen (Germany) Johns Hopkins University Massachusetts Institute of Technology Missouri University of Science & Technology New York University Northeastern University	Northwest Missouri State University Northwestern University Purdue University School of Art Institute of Chicago Truman State University University of California–Berkeley University of California–Davis University of California–Los Angeles University of California–San Diego University of Chicago University of Colorado–Boulder	University of Colorado–Denver University of Illinois–Urbana/Champaign University of Maryland–College Park University of Missouri–Columbia University of Missouri–Kansas City University of Pittsburgh University of Washington–Seattle University of Wisconsin–Madison Washington and Lee University Washington University–St. Louis

\*Approximately 100% of Missouri Academy graduates go on to complete bachelor degree programs - 85% of them in science, technology, engineering and mathematics (STEM) and 15% in other fields.

## Institutional accreditation and program membership

The Missouri Academy is an integral part of Northwest Missouri State University. Northwest is a public four-year, moderately selective, Masters I institution (Carnegie Classification) with more than 6,800 students. The university offers 124 programs of study. The university is accredited

by the Higher Learning Commission of the North Central Association of Colleges and Schools. The Missouri Academy is an institutional member of the National Consortium of Specialized Secondary Schools (NCSSS), a member of the National Consortium of Early College Entrance Programs

(NCECEP), and a member of the Coalition of Leaders for Advanced Student Success (CLASS) which works to ensure the nation's best and brightest students, regardless of income, have the skills and knowledge to succeed in school and the workforce.