

# 2018 PROFILE



## IMSA Offers Unmatched Educational Experiences

The Illinois Mathematics and Science Academy (IMSA) fosters the discoverers. The thinkers. The innovators and experimenters. The problem-solvers of the future who can change the world through their life's work. IMSA innovates the future of science, technology, engineering and math (STEM) education. It creates a strong and diverse pipeline of talented students at its tuition-free residential academy in Aurora, IL for 10th through 12th grade students. IMSA's mission is to ignite and nurture creative, scientific, ethical minds that advance the human condition.

### Investigation and Innovation

20% of students' time is spent outside the classroom exploring independent study, research, innovation or entrepreneurship. Student Inquiry and Research (SIR) exposes students to authentic research experiences in a breadth of fields through on- and off-campus collaborations with university faculty and over 70 world-class institutions. IN2 is IMSA's new state-of-the-art innovation center designed to stimulate entrepreneurship including prototyping, makerspace activity and the launching of new tech start-ups and business ventures.

### Service and Leadership

Through IMSA's service learning program, students are required to complete 200 hours of service during their three year tenure. IMSA's Leadership Education program develops students' personal, social and academic skills through required co-curricular activities. Leadership Education Development (LEAD) is the hallmark promoting discussion and action on societal issues including social entrepreneurship, public policy and research development.

### Grading

In order to promote collaborative exploration and discovery, the Academy does not provide grade point averages or class averages.

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**50%**

of IMSA Faculty have a PhD.  
100% have a  
Master's Degree.

**650**

residential academy students  
come from over  
50 Illinois counties.



Illinois Mathematics and Science Academy

## Science 4.0 credit minimum; All science courses have a lab component

### Core Courses [Sophomore]

Methods in Scientific Inquiry  
Scientific Inquiries—Biology  
Scientific Inquiries—Chemistry  
Scientific Inquiries—Physics

Molecular and Cellular Biology  
Physiology and Disease  
Seminar in Biology—Development

### Chemistry Electives

Advanced Chemistry—Structure and Properties  
Advanced Chemistry—Chemical Reactions  
Biochemistry

Environmental Chemistry  
Organic Chemistry I  
Organic Chemistry II

### Physics Electives

Biophysics  
Computational Science  
Engineering  
Modern Physics

Physics—Sound and Light  
Physics—Calculus-based Mechanics  
Physics—Calculus-based Electricity and Magnetism  
Planetary Science

### Biology Electives

Evolution, Biodiversity and Ecology  
Microbes and Disease

## Mathematics and Computer Science 3.0 credit minimum

### Calculus Core Courses

AB Calculus I  
AB Calculus II  
BC Calculus I  
BC Calculus II  
BC Calculus III  
BC Calculus I/ II  
BC Calculus II/ III

Mathematical Investigations III  
Mathematical Investigations IV

### Pre-Calculus Electives

Discrete Mathematics  
Graph Theory with Applications  
Mathematical Modeling  
Modern Geometries  
Problem Solving  
Statistical Experimentation and Inference  
Statistical Exploration and Description

### Post-Calculus Electives

Advanced Problem Solving  
Advanced Topics in Mathematics  
Differential Equations  
Introduction to Algebraic Structures I and 2  
Multi-Variable Calculus  
Number Theory  
Theory of Analysis

### Computer Science Electives

Advanced Programming  
Computer Seminar—Advanced Web Technologies  
Computer Seminar—Cyber Security and Android App Programming  
Object Oriented Programming  
Robotics Programming  
Web Technologies

### Pre-Calculus Core Courses

Geometry  
Mathematical Investigations I/II  
Mathematical Investigations II

### Computer Science Core Course [Sophomore]

Computer Science Inquiry

## English 3.0 credit minimum

### Core Courses [Sophomore]

Literary Explorations I  
Literary Explorations II

### Junior/Senior Electives

Creative Writing Workshop  
Graphic Novels—Image and Text  
Modern Theater  
Speculative Fiction Studies  
Topics in World Literature—Modern World Fiction

Topics in World Literature—Victorian Fiction

### Senior Electives

African American Studies  
Gender Studies  
The Idea of the Individual

Shakespeare  
Tolkien—Language and Literature

### Core Courses [Junior]

Literary Explorations III

## Social Science 2.5 credit minimum

### Core Courses [Sophomore]

American Studies

### Junior Electives

Ancient World Religion and Philosophy  
Art, Worldview and Society in History  
Conflict in World History  
History of Cultural Contact

### Senior Electives

African American Studies  
History of Astronomy  
History of Biology  
History of Philosophy  
History of Technology and Culture  
Modern Genocide and Mass Violence

Political Theory  
Rise of the Atlantic World 1492–1815  
Topics in Current Affairs  
United States Government and the Constitution

### Core Courses [Junior]

The World in the Twentieth Century

## World Languages 2.0 credit minimum

A student must complete two years of world language study, with one year at level II or higher

French I  
French II  
French III  
French IV  
French V

German I  
German II  
German III  
Japanese III

Mandarin Chinese I  
Mandarin Chinese II  
Mandarin Chinese III  
Russian I  
Russian II

Russian III  
Spanish II  
Spanish III  
Spanish IV  
Spanish V

## Fine Arts 0.5 credit minimum

### Music

Chamber Choir  
Chamber Strings  
Concert Band  
Concert Choir  
Music Appreciation  
Music Theory  
String Orchestra  
Wind Ensemble

### Visual Arts

Art Design  
Drawing and Illustration  
Observational Drawing  
Printmaking

### Wellness Education 1.0 credit minimum

#### Core Course [Sophomore]

Moving and Learning

#### Wellness Electives

Dance  
Movement and Relaxation  
Net and Wall Games  
Outdoor and Indoor Games

### Independent Learning

Independent Study  
Student Inquiry and Research (SIR)  
Total Applied Learning for Entrepreneurs (TALENT)

# IMSA Academic Highlights

**25%**  
of IMSA's senior class  
was named  
National Merit  
Semifinalists.

## Recognition of Scholarships Class of 2018

**195**

Seniors

**46**

National Merit  
Semifinalists

**62**

Commended  
Students

## ACT Scores – Class of 2017

Middle 50% Ranges and Means

	IMSA Mean (n = 201)	IMSA Middle 50% range	Illinois College-Bound Senior Mean	All College-Bound Senior Mean
<b>Composite</b>	32.6	31.0 - 35.0	21.4	21

## SAT Reasoning Test—Class of 2017

Middle 50% Ranges and Means

	IMSA Mean (n = 218)	Illinois College-Bound Senior Mean	All College-Bound Senior Mean
<b>ERW</b>	688	556	538
<b>Math</b>	725	554	533

## Sample of Advanced Placement (AP) Examinations for 2016–2017 School Year

Although IMSA does not offer AP courses, 671 AP examinations were administered to 299 students

	Biology	Calculus AB	Calculus BC	Chemistry	Computer Science A	Physics C: E & M	Physics C: Mech	English Language
No. of Students Tested	44	31	158	80	47	49	59	35
Average Scores	3.9	3.4	4.3	3.3	4.0	3.3	4.0	4.2

## A Sample Grade Distribution Report for Junior Course Enrollment (2016–2017)

Course Name	A	A-	B+	B	B-	C+	C	C-	D	All
Mathematical Investigations IV	31	22	18	18	16	9	12	4	3	133
Literary Explorations III	33	64	46	35	15	3	3	2	0	201
Adv. Chemistry – Structure and Properties	24	23	6	14	6	4	7	2	1	87
BC Calculus I	5	18	14	22	15	7	9	2	2	94
Creative Writing Workshop	18	37	11	8	1	1	1	0	0	77
The World in the Twentieth Century	63	76	28	15	3	2	3	4	2	196
Advanced Chemistry— Chemical Reactions	13	22	4	16	7	3	9	4	0	78
Microbes and Disease	6	18	8	20	6	1	4	4	0	67

## Explanation of Grades

A = Exceeds course requirements

B = Meets course requirements

C = Needs improvement

D = Does not meet course requirements, no credit awarded

I = Incomplete

P+ = Exceeds course requirements, pass with distinction

P = Meets course requirements for course taken pass/fail

F = Does not meet requirements for course taken pass/fail

W = Withdrawal from course

WF = Withdrawal from course with failing grade

**20%**

of students' time is spent on independent research and internships.

**32.6**

is the mean composite ACT score of the IMSA Class of 2017.

**43,333**

hours of community service are performed by IMSA students each year.

## IMSA Matriculations—Class of 2017 (213 Graduates)

	Attending	Accepted		Attending	Accepted		Attending	Accepted
American University	1	2	Illinois Institute of Technology	4	25	The University of Alabama at Huntsville	1	1
Amherst College	1	1	Illinois State University	1	3	Triton College	1	1
Augustana College	1	7	Illinois Valley Community College	1	1	Truman State University	1	4
Beloit College	1	2	Indiana University at Bloomington	1	5	University of California, Berkeley	3	8
Boston College	1	2	Iowa State University	1	7	University of Chicago	3	5
Boston University	1	13	Johns Hopkins University	1	2	University of Illinois at Chicago	16	58
Bradley University	1	5	Kalamazoo College	1	3	University of Illinois at Urbana-Champaign	44	152
Brown University	1	1	Knox College	1	8	University of Miami	3	10
California Institute of Technology	2	6	Lewis & Clark College	1	1	University of Michigan	3	21
Carleton College	1	2	Louisiana Tech University	1	1	University of Minnesota, Morris	1	1
Carnegie Mellon University	5	12	Loyola University Chicago	2	13	University of Minnesota, Twin Cities	3	27
Case Western Reserve University	6	37	Luther College	1	1	University of Missouri, Kansas City	2	6
Claremont McKenna College	1	1	Massachusetts Institute of Technology	2	2	University of Oxford, UK	1	1
Cleveland Institute of Music	1	1	Michigan State University	4	27	University of Pittsburgh	2	16
College of William and Mary	2	5	New York University	1	10	University of Richmond	1	1
Columbia University	2	4	New York University Shanghai	2	2	University of Southern California	1	7
Cornell University	1	2	Northeastern University	2	11	University of Texas, Dallas	2	3
Creighton University	2	9	Northwestern University	9	13	University of Washington	1	4
Dartmouth College	2	2	Parkland College	1	1	University of Waterloo, Canada	1	1
DePaul University	1	9	Purdue University	2	28	University of Wisconsin, Madison	2	23
Drexel University	2	19	Rose-Hulman Institute of Technology	1	7	University of Wisconsin, Platteville	1	2
Duke University	1	4	Saint Louis University	3	18	Vanderbilt University	11	15
Emory University	2	5	Saint Olaf College	2	3	Washington University in St. Louis	2	11
Georgia Institute of Technology	3	6	Southern Illinois University, Carbondale	1	1	Wayne State University	1	1
Grinnell College	3	11	Stanford University	3	5	Yale University	3	3
Harvard University	2	2	Swarthmore College	1	2			
Harvey Mudd College	1	1	The University of Alabama at Birmingham	2	8			
Howard University	2	2						
Illinois College	1	1						

## 2017 College Placement Profile (213 Graduates)

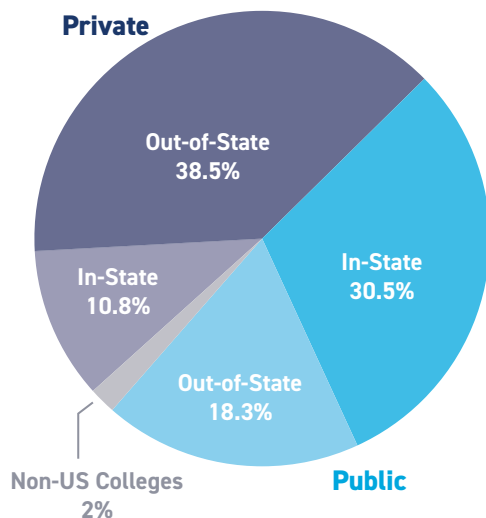
### Private Schools

- Private In-State
- Private Out-of-State

### Public Schools\*

- Public In-State
- Public Out-of-State
- Non-US Colleges

\*includes 3 two-year colleges



## Student Population of Academy, 2017-2018

Percentage of students identifying as:

41.6	Asian
35.4	White
8.9	Hispanic or Latino
8.2	Black
5.9	Two or More Races, Non-Hispanic or -Latino

Male = 50.0%

Female = 50.0%



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