



Illinois Mathematics and Science Academy®

IMSA 2015 Profile

Founding Member of the National Consortium for Specialized Secondary Schools of Mathematics, Science and Technology



The internationally recognized Illinois Mathematics and Science Academy® (IMSA) develops creative, ethical leaders in science, technology, engineering and mathematics. As a teaching and learning laboratory created by the State of Illinois, IMSA enrolls academically talented Illinois students (grades 10-12) in its advanced, residential college preparatory program, and it serves thousands of educators and students in Illinois and beyond through innovative instructional programs that foster imagination and inquiry. IMSA also advances education through research, groundbreaking ventures and strategic partnerships. (www.imsa.edu)

IMSA employs 55 full-time teaching faculty members, all of whom have advanced degrees, with 47% holding doctorate degrees. In addition, 31% of faculty members are certified by the National Board for Professional Teaching Standards (NBPTS). IMSA fosters a collaborative learning environment that is problem-centered, inquiry-based and integrative. IMSA's students are engaged in rich opportunities to work with prominent researchers, explore questions of their own, champion their ideas for product development and make significant leadership contributions.

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Student Inquiry and Research (SIR) pairs students with on-campus and off-campus professionals so that they can actively investigate a topic about which they are passionate. The SIR standards focus on planning, investigating, analyzing and communicating. Requirements include a proposal, investigation journal/notebook, active engagement, progress report, abstract, investigation paper and presentation at IMSAloquium.

Total Applied Learning for Entrepreneurs (TALENT) provides students with experiential learning opportunities related to bringing an idea to the market-place to solve real world problems. TALENT instills the thinking patterns and mindset of an entrepreneur and engages students in understanding intellectual property, developing a business plan, developing products, securing funding, networking, communicating ideas and starting a business.

Independent Study is a student-selected learning experience that provides the opportunity to personalize learning beyond the IMSA course offerings. An Independent Study may be conducted by a senior (or junior with Principal's permission) under the direction of an IMSA faculty member for one or two semesters.

Advanced Study provides students the opportunity to pursue learning for graduation credit and receive a letter grade in a class not included in IMSA's regular course offerings. An Advanced Study proposal is completed jointly by a senior student and IMSA faculty member; the class is conducted under the direction of the faculty member for one or two semesters.

Leadership Education helps students become leaders within the Academy, in the community and in the world. Navigation is a forum for sophomores to process their academic, social and emotional experiences at IMSA. Leadership Education and Development engages all students in open discussion, meaningful activities, real-life applications and personal reflection to develop their passions and impact social change. Residence Life develops students' personal and social skills and academic talents.

Service Learning requires students to complete 200 hours of service during their three years at IMSA.

In light of IMSA's selective admission process and in order to promote collaborative exploration and discovery, the Academy does not provide grade point averages or class rankings.

Total graduation requirement: 17 credits. Eight (8) credits must be in mathematics and science.
For information on course descriptions, please visit our website: www.imsa.edu/academics/CAC

SCIENCE 4.0 credit minimum

All science courses have a lab component			
Core Courses <i>[Sophomore]</i> Methods in Scientific Inquiry Scientific Inquiries - Biology - Molecular Genetics - Organisms and Ecosystems Scientific Inquiries - Chemistry Scientific Inquiries - Physics	Biology Electives Evolution, Biodiversity and Ecology Microbes and Disease Molecular and Cellular Biology Physiology and Disease Seminar in Biology: Animal Behavior	Chemistry Electives Advanced Chemistry - Structure and Properties Advanced Chemistry - Chemical Reactions Biochemistry Environmental Chemistry Organic Chemistry I Organic Chemistry II Survey of Organic Chemistry	Physics Electives Biophysics Computational Science Engineering Modern Physics Physics: Sound and Light Physics: Calculus-based Mechanics Physics: Calculus-based Electricity and Magnetism Planetary Science

MATHEMATICS 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	Pre-Calculus Electives Discrete Mathematics Graph Theory with Applications 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 Multi-Variable Calculus Number Theory Theory of Analysis	Computer Science Electives Advanced Programming Computer Science Computational Thinking Computer Seminar Object Oriented Programming Robotics Programming Web Technologies I
Pre-Calculus Core Courses Geometry I/II Mathematical Investigations I/II Mathematical Investigations II Mathematical Investigations III Mathematical Investigations IV			

ENGLISH 3.0 credit minimum

Core Courses <i>[Sophomore]</i> Literary Explorations I Literary Explorations II <i>[Junior]</i> Literary Explorations III	Junior/Senior Electives 20th Century Poetry Creative Writing Workshop Film Study: History and Criticism IMSATube: Non-Fiction Film Study Modern Theater Speculative Fiction Studies	Junior/Senior Electives The Idea of the Individual Topics in World Literature: Modern World Fiction Topics in World Literature: Victorian Fiction	Senior Electives Gender Studies Graphic Novels: Image and Text
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SOCIAL SCIENCE 2.5 credit minimum

Core Courses <i>[Sophomore]</i> American Studies <i>[Junior]</i> The World in the Twentieth Century	Junior Electives Ancient World Religion and Philosophy Conflict in World History History of Cultural Contact Medieval Societies Power and Authority in History	Senior Electives History of Astronomy History of Biology History of Philosophy History of Technology and Culture	Senior Electives International Relations Political Theory The History of China and India United States Government and the Constitution
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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	German I	Japanese I	Mandarin Chinese I	Russian I	Spanish II
French II	German II	Japanese II	Mandarin Chinese II	Russian II	Spanish III
French III	German III	Japanese III	Mandarin Chinese III	Russian III	Spanish IV
French IV					Spanish V
French V					

FINE ARTS 0.5 credit minimum

Music Chamber Choir Chamber Strings Concert Band Concert Choir	Music Music Theory String Orchestra Wind Ensemble	Visual Arts Advanced Ceramics Art Design Ceramics Photography
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WELLNESS EDUCATION 1.0 credit minimum

Core Course <i>[Sophomore]</i> Moving and Learning	Wellness Electives Dance Lifeguarding and Water Polo Movement and Relaxation	Wellness Electives Outdoor and Indoor Games Tennis and Badminton
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INDEPENDENT LEARNING

Advanced Study	Independent Study	Student Inquiry and Research (SIR)	Total Applied Learning for Entrepreneurs (TALENT)
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IMSA TESTING HIGHLIGHTS

ACT Scores - Class of 2014- Middle 50% Ranges and Means				
	IMSA Mean (N = 181)	IMSA Middle 50% Range	Illinois College-Bound Senior Mean	All College-Bound Senior Mean
Composite	32.2	31.0–34.0	20.7	21.0

SAT Reasoning Test - Class of 2014 - Middle 50% Ranges and Means				
	IMSA Mean (N = 152)	IMSA Middle 50% Range	Illinois College-Bound Senior Mean	All College-Bound Senior Mean
Critical Reading	682	632.5-740	600	496
Math	727	680-770	617	514
Writing	681	632.5-730	590	488

Scholarship Recognition

- Class of 2015**
- 195 Total number of students in class
 - 7 National Achievement Semifinalists
 - 45 National Merit Semifinalists
- Class of 2014**
- 198 Total number of students in class
 - 3 National Achievement Finalists
 - 41 National Merit Finalists
 - 3 National AP Scholars
 - 17 AP Scholars with Distinction
 - 14 AP Scholars with Honors
 - 4 Siemens Award Competition Semifinalists
 - 2 Illinois Junior Academy of Science Gold Medal Winners
 - 1 International Math Olympiad Gold Medal Winner
 - 3 Members Selected for Finalist Team in the High School Mathematical Contest in Modeling (HiMCM)
 - 1 2nd Place Winner Math Team in the Illinois Council of Teachers of Mathematics (ICTM) Contest
 - 2 1st Place Winners Illinois Future Business Leaders of America State Leadership Conference
 - 1 2nd Place Winner Illinois Future Problem Solving Team in State
 - 1 1st Place Winner Scholastic Bowl Team in State
 - 1 7th Place Winner Science Olympiad Team in State
 - 1 1st Place Winner History Bowl Team in State
 - 1 2nd Place Winner National History Bee in State
 - 1 US Geography Olympiad National Champion
 - 1 1st 100 Butterfly and 2nd 100 Backstroke in the Illinois High School Association (IHSA)

Advanced Placement (AP) Examinations for 2013–2014 School Year									
Although IMSA does not offer AP courses, 666 AP examinations were administered to 316 students									
Examinations	Biology	Calculus AB	Calculus BC	Chemistry	Computer Science A	Physics C: E & M	Physics C: Mech	Statistics	English Language
No. of Students Tested	55	29	144	114	30	42	57	39	31
Average Score	3.8	3.4	4.5	3.0	4.0	3.1	3.9	4.4	4.4

A Sample Grade Distribution Report for Junior Course Enrollment (2013–2014)										
Course	A	A-	B+	B	B-	C+	C	C-	D	No. of Students
Mathematical Investigations IV	15	8	7	18	6	1	2	2	2	61
BC Calculus I	5	5	4	18	10	5	5	1	3	56
BC Calculus II	2	7	5	10	8	1	1	0	0	34
Advanced Chemistry--Structure and Properties	20	24	5	25	11	1	4	0	0	90
Advanced Chemistry--Chemical Reactions	23	35	7	18	33	6	8	9	2	141
Microbes and Disease	3	9	0	23	9	1	3	0	0	48
Literary Explorations III	13	53	35	58	29	11	6	1	4	210
Web Technologies I	5	6	3	17	0	1	2	0	0	34
The World in the Twentieth Century	45	64	23	34	15	8	4	3	6	202

Explanation of Grades			
A	Exceeds course requirements	P+	Exceeds course requirements, Pass with Distinction
B	Meets course requirements	P	Meets course requirements for course taken pass/fail
C	Needs improvement	F	Does not meet requirements for course taken pass/fail
D	Does not meet course requirements, no credit awarded	W	Withdrawal from course
I	Incomplete	WF	Withdrawal from course with failing grade

IMSA MATRICULATIONS - CLASS OF 2014 (198 GRADUATES)

Augustana College (1)	Howard University (1)	University of Pittsburgh (3)
Bard College (1)	University of Illinois at Chicago (10)	Princeton University (2)
Beloit College (3)	University of Illinois at Urbana-Champaign (46)	Purdue University (3)
Boston University (4)	Illinois Institute of Technology (3)	Reed College (1)
Brown University (3)	Indiana State University (1)	Rensselaer Polytechnic Institute (2)
California Institute of Technology (4)	Indiana University at Bloomington (1)	University of Rochester (1)
University of California, Berkeley (1)	Iowa State University (3)	Rose-Hulman Institute of Technology (1)
University of California, Los Angeles (1)	The University of Iowa (1)	Saint Louis University (2)
Carnegie Mellon University (6)	Johns Hopkins University (2)	University of Southern California (1)
Case Western Reserve University (8)	Lake Forest College (1)	St. Olaf College (1)
Claremont McKenna College (1)	Lawrence University (1)	Stanford University (2)
Columbia University (1)	Loyola University Chicago (1)	The Ohio State University (1)
Cornell College (1)	Marquette University (1)	Trinity College (1)
Cornell University (3)	Massachusetts Institute of Technology (1)	Truman State University (1)
Dartmouth College (1)	McGill University (1)	Tufts University (1)
Denison University (1)	Miami University, Oxford (3)	Tulane University (1)
DePauw University (1)	University of Miami (4)	Union College (1)
Drake University (1)	University of Michigan (4)	United States Military Academy (1)
Drexel University (1)	University of Missouri Columbia (2)	Vanderbilt University (7)
Duke University (2)	New College of Florida (1)	Washington University in St. Louis (3)
Embry-Riddle Aeronautical University (1)	New York University (2)	Wellesley College (1)
Florida Institute of Technology (1)	The University of North Carolina at Chapel Hill (1)	Wesleyan University (1)
Georgia Institute of Technology (2)	Northeastern University (4)	William Rainey Harper College (1)
Hampton University (1)	Northwestern University (6)	University of Wisconsin, Madison (2)
Harvard University (2)	University of Oklahoma (1)	Worcester Polytechnic Institute (1)
University of Houston (1)	University of Pennsylvania (1)	



UNIVERSITIES AND COLLEGES WITH THE LARGEST IMSA GRADUATE ENROLLMENT CLASSES OF 2012-2014

University of Illinois at Urbana-Champaign (152)	Loyola University Chicago (7)	University of Rochester (6)
University of Illinois at Chicago (21)	Purdue University (7)	Stanford University (6)
Case Western Reserve University (19)	University of Pennsylvania (7)	The Ohio State University (5)
Vanderbilt University (15)	Yale University (7)	Columbia University (5)
Illinois Institute of Technology (13)	University of Southern California (7)	Cornell University (5)
Saint Louis University (12)	University of Miami (7)	New York University (5)
Northwestern University (11)	University of Missouri Columbia (7)	Rensselaer Polytechnic Institute (5)
Northeastern University (11)	University of Chicago (6)	Massachusetts Institute of Technology (5)
California Institute of Technology (11)	University of Wisconsin, Madison (6)	Duke University (5)
Washington University in St. Louis (11)	Drexel University (6)	Georgia Institute of Technology (5)
Carnegie Mellon University (10)	Princeton University (6)	Truman State University (5)
University of Michigan (8)	University of Pittsburgh (6)	



College Placement Profile by %			
	2014	2013	2012
4 Yr College	99	99.5	98.6
Private Schools	53.5	55.5	55.2
In-State	6.1	12	8.5
Out-of-State	47.5	43.5	46.7
Public Schools	45.5	44	43.4
In-State	28.3	30.4	29.2
Out-of-State	17.2	13.6	14.2
2 Yr College	0.5	0	0.5
Non-US colleges	0.5	0.5	0.5

Student Population of Academy 2015-2017	
Male = 51% Female = 49%	
Percentage of students identifying as:	
41.2%	Asian
35.3%	White
8.8%	Hispanic or Latino
5.2%	Black
4.9%	Two or More Races
0.2%	American Indian or Alaska Native
4.5%	Not Reported



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www.imsa.edu

FOR MORE INFORMATION



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