



Illinois Mathematics and Science Academy

igniting and nurturing
creative, ethical, scientific minds
that advance the human condition

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

IMSA 2014 PROFILE

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 56 full-time teaching faculty members, all of whom have advanced degrees, with 44% holding doctorate degrees. In addition, 30% 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.

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 Students are required to complete 200 hours of service during their three years at IMSA.

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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.

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www.imsa.edu/academics/CAC | CEEB Code: 140177

SCIENCE
4.0 credit minimum

All science courses have a lab component

Core Courses

[Sophomore]
 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: Neurobiology

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

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
 Polyhedra and Geometric Sculpture
 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

[Sophomore]
 Literary Explorations I
 Literary Explorations II

[Junior]
 Literary Explorations III

Junior/Senior Electives

20th Century Poetry
 Creative Writing Workshop
 Film Study: History and Criticism
 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
 Tolkien: Language and Literature

SOCIAL SCIENCE
2.5 credit minimum

Core Courses

[Sophomore]
 American Studies
 [Junior]
 The World in the Twentieth Century

Junior Electives

Ancient World Religion and Philosophy
 Conflict in World History
 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

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 I
 Japanese II
 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

Music Theory
 String Orchestra
 Wind Ensemble

Visual Arts

Advanced Ceramics
 Art Design
 Ceramics
 Photography

WELLNESS EDUCATION
1.0 credit minimum

Core Course

[Sophomore]
 Moving and Learning

Wellness Electives

Dance
 Lifeguarding and Water Polo
 Movement and Relaxation

Wellness Electives

Outdoor and Indoor Games
 Tennis and Badminton

INDEPENDENT LEARNING

Advanced Study

Independent Study

Student Inquiry and Research (SIR)

Total Applied Learning for Entrepreneurs (TALENT)

IMSA TESTING HIGHLIGHTS

ACT Scores - Class of 2013- Middle 50% Ranges and Means

	IMSA Mean (N = 167)	IMSA Middle 50% Range	Illinois College-Bound Senior Mean	All College-Bound Senior Mean
Composite	31.9	30.0–34.0	20.6	20.9

SAT Reasoning Test - Class of 2013 - Middle 50% Ranges and Means

	IMSA Mean (N = 203)	IMSA Middle 50% Range	Illinois College-Bound Senior Mean	All College-Bound Senior Mean
Critical Reading	647	590-730	600	496
Math	689	650-760	617	514
Writing	641	570-720	590	488

Scholarship Recognition

Class of 2014

- 203 Total number of students in class
- 4 National Achievement Semifinalists
- 48 National Merit Semifinalists

Class of 2013

- 191 Total number of students in class
- 3 National Achievement Finalists
- 47 National Merit Finalists
- 9 National AP Scholars
- 43 AP Scholars with Distinction
- 16 AP Scholars with Honors
- 1 Intel Science Talent Search Semi-finalist
- 2 Siemens Award Competition Semi-finalists
- 1 Illinois Junior Academy of Science Gold Medal Winner
- 1 National Outstanding Paper Group Award in the High School Mathematical Contest in Modeling (HiMCM)
- 1 3rd Place Winner (Math Team) in the Illinois Council of Teachers of Mathematics (ICTM) Contest
- 1 1st Place Winner (Scholastic Bowl Team) in State
- 1 13th Place Winner (Science Bowl Team) in Nation
- 1 3rd Place winner (Science Olympiad Team) in State
- 1 1st, 2nd, and 3rd Place Winners (Illinois Future Business Leaders of America) State Leadership Conference

Advanced Placement (AP) Examinations for 2012–2013 School Year

Although IMSA does not offer AP courses, 725 AP examinations were administered to 314 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	64	13	147	118	20	38	45	28	47
Average Score	3.7	2.5	4.5	3.2	3.5	2.9	4.0	4.0	4.1

A Sample Grade Distribution Report for Junior Course Enrollment (2012–2013)

Course	A	A-	B+	B	B-	C+	C	C-	D	No. of Students
Mathematical Investigations IV (Fall)	11	16	7	18	2	7	5	0	2	68
BC Calculus I (Spring)	3	9	5	13	11	2	5	3	4	55
BC Calculus II (Spring)	8	4	5	7	9	0	2	2	1	38
Advanced Chemistry--Structure and Properties (Fall)	31	37	7	25	15	4	4	1	0	124
Advanced Chemistry--Chemical Reactions (Spring)	27	24	6	29	21	3	7	5	0	122
Molecular and Cellular Biology	6	11	6	7	4	0	4	2	0	40
Literary Explorations III	11	56	39	72	23	5	1	0	0	207
Creative Writing Workshop	5	14	9	12	0	0	0	1	0	41
The World in the Twentieth Century	62	62	25	35	9	4	4	1	3	205

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 2013 (191 GRADUATES)

American University (1)
 Arizona State University (1)
 Baylor University (1)
 Binghamton University (2)
 Boston College (1)
 Brandeis University (1)
 California Institute of Technology (3)
 Carleton College (3)
 Carnegie Mellon University (2)
 Carthage College (1)
 Case Western Reserve University (2)
 College of William and Mary (1)
 Columbia University (1)
 Cooper Union for the Advancement of Science (1)
 Cornell University (2)
 Dartmouth College (1)
 DePaul University (1)
 Drake University (2)
 Drexel University (3)
 Duke University (1)
 Emory University (1)
 Georgetown University (1)
 Georgia Institute of Technology (3)
 Grinnell College (2)
 Harvard University (1)
 Haverford College (1)

Illinois Institute of Technology (7)
 Illinois Wesleyan University (1)
 Johns Hopkins University (2)
 Knox College (3)
 Lawrence University (1)
 Loyola University Chicago (2)
 Macalester College (1)
 Massachusetts Institute of Technology (1)
 Michigan Technical University (1)
 Monmouth College (1)
 Muskingum University (1)
 New York University (2)
 North Central College (1)
 Northeastern University (5)
 Northwestern University (3)
 Princeton University (2)
 Purdue University (3)
 Rensselaer Polytechnic Institute (1)
 Rhodes College (2)
 Rice University (1)
 Ripon College (1)
 St. Louis University (4)
 Southern Illinois University—Carbondale (1)
 Southern Illinois University—Edwardsville (1)
 Southern Methodist University (1)
 Stanford University (2)
 Swarthmore College (1)

The Ohio State University (2)
 Truman State University (2)
 Tulane University (1)
 University of California at Los Angeles (2)
 University of Chicago (4)
 University of Colorado at Denver (1)
 University of Houston (1)
 University of Illinois Chicago (7)
 University of Illinois Urbana-Champaign (49)
 University of Miami (2)
 University of Michigan Ann Arbor (3)
 University of Minnesota Twin Cities (1)
 University of Missouri Columbia (1)
 University of Notre Dame (2)
 University of Pennsylvania (3)
 University of Pittsburgh (1)
 University of Rochester (2)
 University of Southern California (1)
 University of Wisconsin Madison (1)
 Vanderbilt University (4)
 Wake Forest University (1)
 Washington University in St. Louis (5)
 Wellesley College (1)
 Yale University (1)
 University College London (1)

UNIVERSITIES AND COLLEGES WITH THE LARGEST IMSA GRADUATE ENROLLMENT CLASSES OF 2011–2013

University of Illinois Urbana-Champaign (159)
 University of Illinois Chicago (19)
 Saint Louis University (17)
 Illinois Institute of Technology (15)
 Case Western Reserve University (14)
 California Institute of Technology (12)
 University of Rochester (11)
 Vanderbilt University (10)
 Northwestern University (9)
 University of Chicago (9)

University of Wisconsin-Madison (9)
 Massachusetts Institute of Technology (9)
 Washington University in St. Louis (9)
 Carnegie Mellon University (8)
 University of Pennsylvania (8)
 Northeastern University (8)
 Yale University (8)
 Loyola University Chicago (7)
 Princeton University (7)
 University of Southern California (7)

Michigan Technical University (6)
 Drexel University (6)
 University of Pittsburgh (6)
 Stanford University (6)
 DePaul University (5)
 Michigan State University (7)
 University of Michigan-Ann Arbor (5)
 Rensselaer Polytechnic Institute (5)
 Duke University (5)
 University of Missouri-Kansas City (5)
 University of Missouri-Columbia (5)

College Placement Profile by %

	2013	2012	2011
4 Yr College	99.5	98.6	95.5
Private Schools	55.4	55.2	52.4
In-State	12.0	8.5	13.1
Out-of-State	43.4	46.7	39.3
Public Schools	43.9	43.4	47.6
In-State	30.3	29.2	33.0
Out-of-State	13.6	14.2	14.6
2 Yr College	0.0	0.5	1.0
Non-US colleges	0.5	0.5	3.0

Student Population of Academy 2013–2014

Male = 51% Female = 49%

Percentage of students identifying as:

44.6%	Asian
38.0%	White
8.9%	Hispanic or Latino
7.9%	Black
0.5%	American Indian or Alaska Native
0.1%	Native Hawaiian or Other Pacific Islander