CTD Academic Summer Camp at Northwestern University

The Center for Talent Development Academic Summer Camp at Northwestern University offers students in Grades 6-12 a wide array of rigorous coursework within a supportive intellectual community. Students take a single course in a favorite subject, complimented by a rich activities program in the afternoon. Staffed by master instructors and caring support staff, a summer on Northwestern's Campus with CTD is one your student will never forget.

Application opens in January, and courses are filled on a rolling basis. Email our admissions team at ctd-admissions@northwestern.edu or call 847- 467-1575 for more information.

Location

Unless otherwise noted, CTD's 2023 Academic Summer Day and Residential Camp will take place on the Evanston campus of Northwestern University.

Tuition & Dates

Apply early! Early-bird tuition rates apply until 12:01 a.m. on Monday, May 29, 2023.

Academic Summer Day & Residential Camps for Grades 6-12

Dates	Tuition
June 25 – July 14, 2023 July 16 – August 4, 2023	Residential Camp: $4780 Day Camp: $2,660 Partnership Residential Camp: $5,550 Partnership Day Camp: $3,430
Civic Leadership Institute June 25 – July 14, 2023	Residential Camp: $4,895 Day Camp: $2,775
Leadership Intensive July 16 – July 21, 2023 July 23 – July 28, 2023 July 30 - August 4, 2023	(1-week) Residential Camp: $1,590 Day Camp: $885

Jump to Grades 6-8 Course Chart

Jump to Grades 9-12 Course Chart

Northwestern | CTD

Academic Summer Camp for Grades 6-8

CTD's Academic Summer Camp for Grades 6-8 offers two types of courses: Advanced Enrichment Courses & Accelerated Courses. **Advanced Enrichment Courses** are fast-paced, rigorous courses designed to allow students to explore specialized subjects in depth.

Advanced Enrichment Courses

Session 1: June 25 – July 14, 2023	Session 2: July 16 – August 4, 2023
Comics & Graphic Novels	Fantasy Writing & World Building
Horror Fiction	Cold Open: Crafting Topical Comedy
Film Studies	Introduction to Biotechnologies
Forensic Science	Code Your Own Adventure
Aerospace Engineering	Designing for Disaster
	FUSE Studio Design Challenge
Graphic Design Studio	Competition Math
Big League Analytics	Introduction to Game Theory
	Business Enterprising with INCubatoredu

1-Week Leadership Classes	
Leadership Intensive: Leadership for Today	July 16 - July 21
Leadership Intensive: Arts & Activism	July 23 - July 28
Leadership Intensive: Leadership for Today	July 30 - August 4

Accelerated Courses are compacted high school-level courses designed to help students accelerate in a particular subject area. These courses are eligible for one or two credits.

Accelerated Courses

Session 1: June 25 – July 14, 2023	Session 2: July 16 – August 4, 2023
Introduction to Journalism	Creative Writing Workshop
Persuasion & Debate	
Human Rights Spotlight: Water Security	
Introduction to Biomedicine	Comparative Anatomy
Chem Lab	Fundamental Physics
iOS Bootcamp & SwiftUI Development with MobilemakersEdu	
Introduction to Electrical Engineering	VEX® Robotics
Pre-Algebra Honors	Pre-Algebra Honors
Algebra I Honors	Algebra I Honors
	Geometry Honors

ENGLISH & LANGUAGE ARTS

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

NEW! Comics & Graphic Novels
From *The New York Times* Best Sellers list to *The New Yorker*, study the conventions of an evolving narrative form: the graphic story. Analyze layouts and frames that pull the reader through time, space, and perspective and practice bringing your own characters to the page in this studio-based analysis class. Students will try their hand at single frame cartoons, multi-page graphic stories, and critical analysis in a workshop environment and leave with a portfolio of work. Prior drawing experience not required.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:
- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Creative Writing Workshop
This course encourages developing writers to employ craft to creative advantage in genres such as short story, poetry, and memoir. Explore and apply the elements of effective writing through focused academic exercises, peer group response, literary analysis, and instruction in craft. Develop original creative pieces for a portfolio reflecting your growth as both a writer and thinker.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 R ≥24 OR EBRW ≥480 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® R≥28 OR EBRW ≥550 OR ACT® R ≥22 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

Fantasy Writing & World Building
Fans of Tomi Adeyemi, Sabaa Tahir, JK Rowling, and Phillip Pullman will develop an original universe for a fantasy series of their own! Students will draw on etymology, archaeology, cartography, and genealogy to create languages, design relics and runes, map out terrain, establish law and religion, and create family lineages. As a final project, write an extended, original story set in your fully realized world rich with history, culture, character, and theme.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:
- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Horror Fiction
There's more to a good fright than guts and gore. Consider the roles of psychology, metaphor, and other literary devices in crafting a truly horrifying scare as you study texts from Bram Stoker, HP Lovecraft, Mary Shelley, Stephen King, and many more. As a final project, write an original horror story ready for publication.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:
- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

NEW! Introduction to Journalism
Students will build a strong foundation in the practices of ethical reporting and writing newsworthy stories for publication. This class introduces multi-platform tools for engaging, relevant storytelling which adheres to journalism standards of balance, objectivity and accuracy — all while empowering student voices. By the end of the course, student portfolios will include several edited pieces as well as a multimedia

narrative that tells the story through audio, video, and/or photography.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:

- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 R ≥24 OR EBRW ≥480 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® R ≥28 OR EBRW ≥550 OR ACT® R ≥22 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

ARTS & HUMANITIES

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

RETURNING FAVORITE! Cold Open: Crafting Topical Comedy
"It's CTD Night Live!" Future Cecily Strongs and Kenan Thompsons will examine the relationship between comedy and current events in a writers' room format and learn to synthesize individual perspectives and senses of humor into a single, coherent perspective. As a culminating project, the final week of the course will resemble the production process at Saturday Night Live as students pitch, write, rehearse, and produce an original, topical comedy show focusing on the news of the week.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

NEW! Film Studies
Learn the lingo and history of film making as you trace the art form from black and white beginnings to this year's Oscar winners. Students will analyze seminal films, responding with critical reviews–both written and vlogged. As a final project, each student will analyze a film and discuss the impact on its contemporary audience and the industry. This class sets students up for advanced studies in literary analysis, drama, communications, and rhetoric.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

UPDATED SEQUENCE! Human Rights Spotlight: Water Security
From Flint, Michigan and the Colorado River water shortage to water scarcity in North Africa and the Middle East, view issues of civil conflict and human rights through the lens of one of the most pressing global concerns: water security. Learn the history behind foreign policy and analyze the means of international cooperation and diplomacy as they pertain to the human right for clean, accessible water.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:

- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 R ≥24 OR EBRW ≥480 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® R ≥28 OR EBRW ≥550 OR ACT® R ≥22 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

Persuasion & Debate
Learn the principles and practices of effective communication in a variety of speaking situations encountered in school and later as an adult. Examine pressing social issues and develop skills in public speaking, argumentation, and writing through lectures and discussions, reflective writing, persuasive essays, speeches, and structured debates. Upon completion, you are prepared for advanced study in honors English, humanities, and the social sciences, and are ready to participate in various forms of competitive debate.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:

- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 R ≥24 OR EBRW ≥480 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® R ≥28 OR EBRW ≥550 OR ACT® R ≥22 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

SCIENCE

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

UPDATED FAVORITE! Chem Lab
Discover how chemistry explains—and impacts—the world around us and learn about core subjects including atomic theory, stoichiometry, chemical

reactions, intermolecular forces, periodic trends, and acids and bases. In the lab, students will explore concepts, adjust variables independently, apply proper techniques, and use findings to determine next steps. This inquiry-based course provides a foundation for advanced laboratory studies in Chemistry.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading + Math OR Science
ADMISSION CRITERIA:

- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 R ≥24 + M ≥450 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® R ≥28 + SAT® M ≥550 OR ACT® R ≥22 + ACT® M ≥22 OR ACT® S ≥23 OR
- Admission Portfolio

NOTES: A graphing calculator is required. Additional $135 lab fee required.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

NEW! Comparative Anatomy
With an eye toward species-to-species comparisons between humans and other animals, student biologists use dissection and hands-on activities to explore how animal adaptations are suited to an organism's environment. Study the anatomy of animals both large and microscopic and apply these methods to your own research as you aim to better understand human bodies and the diseases that affect us. This course is a precursor to Human Anatomy & Physiology and other Biology lab courses.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Science
ADMISSION CRITERIA:

- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 R≥24 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® R ≥28 OR ACT® R ≥22 OR ACT® S ≥23 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

Forensic Science
Forensic Science examines the relationship between science and the criminal justice system through mini-lectures, in-class discussion, and hands-on activities. Collect, preserve, and analyze crime scene evidence to solve whodunits. Labs include microscopy, trace analyses of hair, fiber, stain, epithelial cells, fingerprints, impressions and DNA. This class is an excellent prelude to future science and laboratory coursework.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading OR Science
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE: Additional $150 materials fee required.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Fundamental Physics
From subatomic particles to galaxies and stars, force is fundamental to physics. Explore a variety of fascinating phenomena in the physical world and the way physics explains the motion of objects, including electrons in an electrical circuit, roller coasters, planets, the light that we use to see, and the sounds we hear. Hands-on lab exercises complement the course material and allow for the derivation of important physics concepts. This course is excellent preparation for Physics Honors.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading + Math OR Science
ADMISSION CRITERIA:

- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 R ≥24 + M ≥450 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® R ≥28 + SAT® M ≥550 OR ACT® R ≥22 + ACT® M ≥22 OR ACT® S ≥23 OR
- Admission Portfolio

NOTES: A graphing calculator is required. Additional $135 lab fee required.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

Introduction to Biomedicine
Explore groundbreaking medical research, gain insights into the body's molecular and cellular processes, and learn how that knowledge is applied to medical practice and treatments. Get acquainted with topics in chemistry by examining essential biochemical reactions that occur in the body, learn about physics while investigating biomechanics, and explore biology at the cellular level. This course is an excellent introduction to the study of medicine or advanced laboratory courses.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Science
ADMISSION CRITERIA:

- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 R≥24 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® R ≥28 OR ACT® R ≥22 OR ACT® S ≥23 OR
- Admission Portfolio

NOTE: Additional $150 lab fee required.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

NEW! Introduction to Biotechnologies
Biotechnology aims to change the future. This growing industry is best known for research in

medicine and pharmaceuticals, but groundbreaking research also offers applications in genomics, food production, and biofuels. Survey the entire field to discover how molecular biology plays an outsized role in the economies of today and tomorrow. Capstone projects will highlight a biotech business, process, or product and pitch it to investors and grantors.
OFFERED: July 16 – Aug 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading OR Science
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE: Additional $150 materials fee required.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

TECHNOLOGY, COMPUTER SCIENCE & ENGINEERING

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

Aerospace Engineering (Engineering)
How do the fundamental forces of flight work to get a giant machine off the ground? Apply the principles of aerodynamics to your own designs. Learn about the history of flight, and through hands-on experiments, create hypotheses, observe your flying machines, and compose lab reports to understand the physics principles behind the science. Apply the engineering process as you become an aeronautical engineer.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal/reading OR math on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE: Additional $135 materials fee required.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Code Your Own Adventure (Computer Science)
Text-based gaming invited players into a world of complex puzzle solving and strategy long before modern epic role playing and online adventure games. Using Twine, peer review and the design engineering process, students will craft a narrative and plan out carefully chosen commands to build a narrative-based game of their own.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal/reading OR math on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTES: A laptop computer (not a tablet) is required for this course. This course is eligible for the Sandra Dennhardt Technology Scholarship.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

RETURNING FAVORITE! Designing for Disaster (Engineering)
Design ingenuity is needed to build structures that will withstand seismic events and rising sea levels and protect nearly 60% of people living in coastal regions of the world. Students will study the ways that architects solve the design problems of seismic activity and sea level and will choose a specific location for which to design a home that will stand the many tests of nature and climate.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading or Math
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal/reading OR math on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

FUSE Studio Design Challenges (Engineering)
Complete design challenges developed by Northwestern University and foster problem solving, creativity, and persistence skills. Projects span fields such as electronics, robotics, biotechnology, architecture, sound mixing, and fashion design. With the help of an expert facilitator, use STEAM-based practices to produce and present artifacts for peer review, remixing, and expert feedback.
OFFERED: July 16 – August 4, 2023

SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math
ADMISSION CRITERIA:
- ≥ 95th national percentile rank in verbal/reading OR math on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTES: Additional $150 software fee required. A laptop computer (not a tablet) is required for this course. This course is eligible for the Sandra Dennhardt Technology Scholarship.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Graphic Design Studio (Computer Science)
Through a series of real-world exercises and hands-on studio sessions in a variety of platforms, build a foundation for multi-platform visual communication and explore the fundamental elements of visual marketing with attention to audience and tone. Readings on design history and contemporary design will illuminate the challenges faced by twenty-first century designers. Students retain their access to Adobe Illustrator for one year.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math
ADMISSION CRITERIA:
- ≥ 95th national percentile rank in verbal/reading OR math on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTES: Additional $175 software fee required. A laptop computer (not a tablet) is required for this course. This course is eligible for the Sandra Dennhardt Technology Scholarship.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

NEW! Introduction to Electrical Engineering (Engineering)
Explore the field of electricity through topics such as electromagnetics, circuit analysis, computer programming, and motor control. In this hands-on course, design and build electrical systems while working in teams to optimize project development and test designs. This design-thinking course prepares students for future physics, engineering, and mechatronics courses.
OFFERED: June 25th– July 14th, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math
ADMISSION CRITERIA:
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 M ≥450 OR R ≥24 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® M ≥550 OR SAT® R ≥28 OR SAT® EBRW ≥550 OR ACT® M ≥22 OR ACT® R >22 OR
- Admission Portfolio

NOTE: Additional $135 materials fee required.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

UPDATED FAVORITE! iOS Bootcamp & SwiftUI Development with MobilemakersEdu (Computer Science)
Do you have a killer idea for an iOS mobile app? Master SwiftUI programming to create an original app in Xcode, Apple's official development environment. Learn and apply skills essential to app development productivity, such as human-centered design, Agile Project Management, and pair programming. Workshop your code, learn to justify your syntax, and problem-solve in a collaborative environment that celebrates creativity and innovation.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math
ADMISSION CRITERIA:
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 M ≥450 OR ≥24 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® M ≥550 OR SAT® R ≥28 OR SAT® EBRW ≥550 OR ACT® M ≥22 OR ACT® R >22 OR
- Admission Portfolio

NOTE: This course is offered at the partnership tuition rate.
HIGH SCHOOL CREDIT OFFERED: 1 Credit
ABOUT THIS PARTNERSHIP: MobilemakersEdu offers iOS app development coursework, training, and support to schools across the nation. CTD students become app developers with the support of Mobile Makers' expert instruction and an accelerated version of their bootcamp curriculum.

VEX® Robotics (Engineering)
Using VEX®, a robotics system consisting of modular hardware, sensors, and programming software, collaborate to create custom machines that execute tasks in a battle of creativity, design, and execution. Students gain exposure to contemporary examples of robotics technology and pressing questions raised by their application. Used in the world-famous FIRST® Tech and Robotics challenges, VEX® robotics teaches students engineering, design, build, and collaborative skills crucial in emerging design and engineering careers.
OFFERED: July 16 – August 4, 2023
PREREQUISITE: Demonstrated experience in one programming language

SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math
ADMISSION CRITERIA:
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 M ≥450 OR R ≥24 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® M ≥550 OR SAT® R ≥28 OR SAT® EBRW ≥550 OR ACT® M ≥22 OR ACT ® R >22 OR
- Admission Portfolio

NOTES: Additional $150 materials fee required. This course is eligible for the Sandra Dennhardt Technology Scholarship.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

MATHEMATICS

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

NOTE: A graphing calculator is required for all mathematics courses.

Algebra I Honors
Algebra I Honors covers properties of real numbers; solving and graphing linear equations, functions, and linear inequalities; exponents and exponential functions; polynomials and factoring; quadratic equations and functions; radicals and geometry connections; and rational equations and functions. Algebra I Honors is a full-year course intended for students who have already studied the introductory ideas of algebra (Pre-Algebra) and plan to accelerate in their district's math sequence.
OFFERED: June 25 - July 14, 2023 AND July 16-August 4,2023
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 M ≥450 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® M ≥550 OR ACT® M ≥22 OR
- Admission Portfolio

NOTE: A graphing calculator is required for all mathematics courses.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

Big League Analytics
Running a successful sports team involves serious math. How do managers decide which players to start each game? How do sports fanatics use stats to draft fantasy leagues? In this data analytics class, students will learn how to use statistics to measure a player's performance over time and debate the merits of "scouts vs. stats" as they create their own dream team.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:
- ≥ 95th national percentile rank in math on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE: A graphing calculator is required for all mathematics courses.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Competition Math
Do you participate in MATHCOUNTS® or have an interest in competition-based problem solving? This course introduces the concepts and techniques of applied math and solving competition puzzles. Students tackle challenging problems in the major areas of competition math—algebra, geometry, number theory, counting, and probability—and leave prepared for national math contests such as AMC, the Art of Problem Solving, and others.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:
- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE: A graphing calculator is required for all mathematics courses.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Geometry Honors
Geometry Honors covers formal proofs, logic and deductive reasoning, constructions, congruence and similarity, parallels and perpendiculars, polygons and circles, transformations and problem solving using advanced technology. Geometry Honors is a full-year high school course intended for students who plan to accelerate in their district's math sequence.
OFFERED: July 16 - August 4, 2023
PREREQUISITE: Algebra I
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 M ≥450 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® M ≥550 OR ACT® M ≥22 OR
- Admission Portfolio

NOTE: A graphing calculator is required for all mathematics courses.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

Introduction to Game Theory

If you want to rule the world, secure a winning position before you begin to play. Students get a mathematical foundation in game theory for simple and then complex games before turning to current events and international relations. The collaborative capstone project challenges students to analyze games of their own design.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in math on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE: A graphing calculator is required for all mathematics courses.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Pre-Algebra Honors
Pre-Algebra Honors covers a yearlong pre-algebra curriculum, including traditional topics such as properties of rational numbers, algebraic equations, geometric figures, ratio, proportion, percent, exponents and radicals, inequalities, the coordinate plane, areas and volumes, probability, and statistics. This course is designed for accelerated math students who are looking to take Algebra I in the fall. Students completing Pre-Algebra are prepared for Algebra I and Java programming courses.
OFFERED: June 25 – July 14,2023 AND July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:

- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 M ≥450 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® M ≥550 OR ACT® M ≥22 OR
- Admission Portfolio

NOTE: A graphing calculator is required for all mathematics courses.
HIGH SCHOOL CREDIT OFFERED: None. While this course is graded, it is not typically given for high school credit. This is a two-semester Pre-Algebra course and will be documented in evaluations as such.

LEADERSHIP & SERVICE

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

RETURNING FAVORITE! Business Enterprising with INCubatoredu
Be an innovator and turn a product concept into a successful business launch. In tandem with an expert instructor, students will identify a problem, create and iterate a product to solve it, prepare to sell the product in an ecommerce marketplace, and evaluate its performance. Learn to create a powerful brand complete with marketing materials and pitch deck, develop pricing and budget models, evaluate sales data, and more in this partnership course.
OFFERED: July 16th – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE: This course is offered at the partnership tuition rate.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)
ABOUT THIS PARTNERSHIP: Uncharted Learning believes that purposeful learning requires authentic experiences that enable students to work together to identify and tackle problems, explore ways to add value to their communities, and connect to the world of work. They believe that youth entrepreneurship curriculum enables these experiences.

NEW! Leadership Intensive – One-Week Courses
Leadership for Today
Begin your leadership exploration here! Engage in interactive workshops on leadership topics, learn from business and nonprofit leaders, and develop critical thinking and public speaking skills. Expand your leadership capacity through hands-on and reflective learning opportunities and build community in a supportive and fun living-learning environment.
OFFERED:
July 16 – July 21, 2023
July 30 - August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- ≥ 90th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE: Students must be 12 years of age by the start of the session for service project requirements.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Arts & Activism
The creative arts have served as acts of persistence and resistance throughout history. From soul music to street art, discover first-hand how artists have used

photography, music, performance, and visual art to raise awareness, fight oppression, and celebrate humanity. Explore ways your own creative work can raise awareness around an issue that inspires you!
OFFERED: July 23 – July 28, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- ≥ 90th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP)
- Above-grade-level test (taken in grade 4 to 6): PSAT® 8/9 OR
- Above-grade-level test (taken in grade 6 or 7): SAT® OR ACT® OR
- Admission Portfolio

NOTE**:** Students must be 12 years of age by the start of the session for experiential project requirements.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Northwestern | CTD

Academic Summer Camp for Grades 9-12

CTD's Academic Summer Camp for Grades 9-12 offers two types of courses: Advanced Enrichment & Accelerated Courses. **Advanced Enrichment Courses** are fast-paced, rigorous courses designed to allow students to explore specialized subjects in depth. https://www.ctd.northwestern.edu/eligibility

Advanced Enrichment Courses

Session 1: June 25 – July 14, 2023	Session 2: July 16 – August 4, 2023
Introduction to Linguistics	
	Introduction to Thermodynamics
Neuroplasticity: Building Better Brains	Public Health: Preventing Global Catastrophes
Civic Leadership Institute	
	Econometrics & Quantitative Analysis
Sports Business Management	Sports Business Managment

Accelerated Courses are compacted high school or undergraduate-level courses designed to help students accelerate in a particular subject area. These courses are eligible for one or two high school credits.

Accelerated Courses

Session 1: June 25 – July 14, 2023	Session 2: July 16 – August 4, 2023
Creative Writing Seminar	Creative Writing Master Class
Literary Analysis: AI & the Ethics of Machines	College Writing
Introduction to Criminology	
Global Economics	Equal Justice Under the Law
Epidemiology & Human Evolution	Principles of Genetic Engineering
	Biology Honors
Neuroscience Seminar	Human Anatomy & Physiology
Chemistry Honors	
	Introduction to Mechatronics
IoT Engineering with Windy City Lab	CPU Architecture with Windy City Lab
Machine Learning Seminar	Introduction to Cybersecurity
Architecture Studio with AIAC	
Geometry Honors	Data Science: Introduction to Statistics
Algebra II & Trigonometry Honors	Algebra II & Trigonometry Honors
	Pre-Calculus Honors
AP® Calculus AB	AP® Statistics

ENGLISH & LANGUAGE ARTS

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

College Writing
Get ahead and practice a wide-range of skills required for college-level writing including grammar, paragraph structure, organization, rhetoric, and argumentation. This course prepares students to compose narrative, descriptive, and expository prose while focusing on the conventions of the writing process. Peer workshops and conferencing assist students as they hone new skills and compose a portfolio.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR EBRW ≥550 or ACT® R ≥22
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 or ACT® R ≥32 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

Creative Writing Master Class
Designed for students with considerable experience in creative writing, this course pairs adventurous reading with prodigious writing across genres, including poetry, fiction, and creative nonfiction. Advance skills in imagery, voice, setting, character, and narrative. Practice daily reading and writing, peer review and revision, and focus output in a preferred genre. Develop a portfolio of serious original work ready for publication.
OFFERED: July 16 – August 4, 2023
PREREQUISITES: Graded creative writing sample AND one year of high school English
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR EBRW ≥550 or ACT® R ≥22
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 or ACT® R ≥32 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

Creative Writing Seminar
Develop your voice this summer! Students refine creative writing skills through discussion of contemporary literature and extensive writing practice. Play with point of view, characterization, and imagery across poetry, fiction, playwriting, and creative nonfiction. Students receive feedback in a workshop format and produce a final portfolio of original work.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR EBRW ≥550 or ACT® R ≥22
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 or ACT R ≥32 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

Introduction to Linguistics
Pop, soda, and coke are just three of the names' Americans might assign to the same beverage, according to the New York Times regional dialect quiz. Learn how linguistic differences like these can be described and deciphered in order to explore the relationship between language and culture. Using scientific methods to analyze patterns of sound, structure, and meaning, students will dive deep into the English language. Having traced the different lenses of linguistics and examined their own language in action, students will complete a capstone project which poses a prediction about how language use will change in the future.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP, SAT® OR ACT®)
- SAT® OR ACT® (taken above-grade-level in or before grade 9) OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Literary Analysis: AI & The Ethics of Machines
From the ancient Greeks on, authors have explored the ethical dilemmas of artificial intelligence. Through close readings, lively debates, and writing activities, examine what it means to be intelligent, to have a mind, and the implications of creating “intelligent” machines. Readings may include Greek myth; authors such as Mary Shelley, Isaac Asimov, Arthur C. Clarke, and Terry Pratchett; and scientific articles. This course is great preparation for high school, the critical reading and writing sections of the SAT, and the English and Reading sections of the ACT.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- Above-grade-level test (taken in or before grade 9:) SAT® R ≥28 OR EBRW ≥550 OR ACT® R ≥22
- On-grade-level (taken in grade 10 or 11): SAT® EBRW ≥700 or ACT® R ≥32 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

ARTS, SOCIAL SCIENCES & HUMANITIES

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

Equal Justice Under Law
Drop into the pinball machine of the American legal system to discover the many paths possible from popular will to rule of law. Follow landmark cases, pocket vetoes, and constitutional amendments backwards to their points of origin in state legislatures, appellate courts, and grassroots activism. Reverse engineer a legal outcome to guarantee its success in a final simulation and bench argument.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR EBRW ≥550 OR ACT® R ≥22
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 or ACT® R ≥32 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

Global Economics
Macroeconomics examines whole economies on the regional, national, and global level. In this discussion-rich seminar, we'll address topics such as globalization, the role of government, human rights, nongovernmental organizations, artificial intelligence and mechanization, and climate change through readings, case studies, discussions, research, and critiques. Design and present and original research project for the course capstone.
OFFERED: June 25th – July 14th, 2023
PREREQUISITE: Graded writing assignment
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 or EBRW ≥550 OR ACT® R ≥22
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 or ACT® R ≥32 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

Introduction to Criminology
The FBI estimates that a violent crime is committed *24.3 seconds* in the United States. Criminology equips us with the framework to understand how crimes are defined, measured, and prevented. Draw from the disciplines of psychology, sociology, forensics, and legal studies to evaluate theories of criminal behavior. Analyze the effects of crime upon individuals and societies to create a capstone project.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR EBRW ≥550 or ACT® R ≥22
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 or ACT® R ≥32 OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: 1 Credit

SCIENCE

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

RETURNING FAVORITE! Biology Honors
Biology comes alive in this fast-paced high school honors course, emphasizing the principles that apply to plants and animals through class discussion, text readings, demonstrations, and applying methods of scientific investigation in the lab. Biology Honors is a full-year course in an accelerated format designed for students who intend to accelerate in science and prepares students for AP® Biology.
OFFERED: July 16 – August 4, 2023
PREREQUISITE: Completion of a laboratory science course
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Science
ADMISSION CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 or ACT® R ≥22 ACT® S ≥23 OR
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 or ACT® R ≥32 OR ACT® S ≥30 OR
- Admission Portfolio

NOTE: Additional $175 lab fee required.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

RETURNING FAVORITE! Chemistry Honors
How does an atom account for the nature of matter? Prepare for AP® Chemistry by mastering the core concepts of chemistry, including atomic models, valence and ionization, bonding, nomenclature of formulas, moles, stoichiometry, gas laws, molecular forces, polarity, solutions, equilibrium, acids and bases, thermochemistry, and oxidation-reduction. Through experiments, learn to use proper lab techniques, record and analyze data to produce scientific lab reports. Chemistry Honors is a full-year course in an accelerated format.
OFFERED: June 25 – July 14, 2023
PREREQUISITE: Algebra I
SUBJECT AREA ELIGIBILITY: Verbal/Reading + Math OR Science
ADMISSION CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 + SAT® M ≥550 or ACT® R ≥22 + ACT® M ≥22 or ACT® S ≥23 OR
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 + SAT® M≥740 or

ACT® R ≥32 + ACT® M ≥30 or ACT® S ≥30 OR
- Admission Portfolio

NOTES: A graphing calculator is required. Additional $175.00 lab fee required.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

Epidemiology & Human Evolution
70% of modern human diseases are caused by the gap between human evolution and our industrialized environment. In this course, students address the question of why disease develops and how we can use principles of evolution to improve human health and well-being.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Science
ADMISSION CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 or ACT® R ≥22 OR ACT® S ≥23 OR
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 OR ACT® R ≥32 OR ACT® S ≥30 OR
- Admission Portfolio

NOTE: Additional $175.00 lab fee required.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

Human Anatomy & Physiology
Examine the chemistry of cellular life, cell structure and function, human organization, major systems of the human body, human and medical genetics, DNA and biotechnology, human evolution, ecology, and population concerns. To develop lab skills required for advanced study in biology, perform dissections, as well as experiments in molecular genetics, histology, and the chemical composition of cells. This course helps prepare students for AP® Biology.
OFFERED: July 16 – August 4, 2023
PREREQUISITE**:** High School Biology
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Science
ADMISSION CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 or ACT® R ≥22 OR ACT® S ≥23 OR
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 OR ACT® R ≥32 OR ACT® S ≥30 OR
- Admission Portfolio

NOTE: Additional $175.00 lab fee required.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

NEW! Introduction to Thermodynamics
How thermal energy is generated and delivered is fundamental to engineering feats such as: powering cities with electricity to the superconducting magnets in the Large Hadron Collider. In this course, students develop a conceptual understanding of thermal energy, the four fundamental laws of thermodynamics, and behavior of thermal energy in pure substances.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:
- ≥ 95th national percentile in rank math on grade-level standardized achievement test (e.g. NWEA/MAP, SAT® OR ACT®)
- SAT® OR ACT® (taken above-grade-level in or before grade 9) OR
- Admission Portfolio

NOTES: Additional $175.00 lab fee required. A graphing calculator is required.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

RETURNING FAVORITE! Neuroplasticity: Building Better Brains
How can students, athletes, and musicians leverage the science of play to improve performance? How can we improve outcomes for individuals living with cancer, neurodegenerative disease, or physical disability? Investigate how the brain executes complex functions and how it adapts in response to practice, play, and rest. Survey the neuroplasticity research to design a training regimen for a performer or therapy program for a patient.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:
- ≥ 95th national percentile rank in verbal/reading on-grade-level standardized achievement test (e.g. NWEA/MAP, SAT® OR ACT®)
- Above-grade-level test (taken in or before grade 9): SAT® OR ACT® OR
- Admission Portfolio

NOTE: Additional $175.00 lab fee required.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Neuroscience Seminar
Explore the complex systems of the human brain, integrating biology, chemistry, anatomy, physiology, and psychology. Topics include neural systems and behavior; the embryonic developments of the central and peripheral nervous systems; study of sensory and motor systems; changes in brain chemistry; learning and memory; and disorders of the nervous system. Labs support lectures and discussion.
OFFERED: June 25 – July 14, 2023
PREREQUISITE: High School Biology
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Science
ADMISSION CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 OR ACT® R ≥22 OR ACT® S ≥23 OR

- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 OR ACT® R ≥32 OR ACT® S ≥30 OR
- Admission Portfolio

NOTE: Additional $175.00 lab fee required.
HIGH SCHOOL CREDIT OFFERED: 1 Credits

NEW! Principles of Genetic Engineering
The twenty-first century has been described as the "Age of Genetics." Explore the principles of genetics and molecular methods that scientists use in recombinant DNA technology. Understand how recombinant molecules are generated, applied in medicine, and used to create genetically modified organisms. Engage in bioethical discussions, design original lab research.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Science
ADMISSION CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 OR ACT® R ≥22 OR ACT® S ≥23 OR
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 OR ACT® R ≥32 OR ACT® S ≥30 OR
- Admission Portfolio

NOTES: Additional lab fee of $175.00 required.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

NEW! Public Health: Preventing Global Catastrophes
Can we predict the next pandemic? Approach public health through a multifaceted lens to study the emergence, spread, and responses to diseases. Model disease transmission to make informed public policy recommendations. This course prepares students for future studies in health sciences, public health, public policy, and business.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal/reading on grade-level standardized achievement test (e.g. NWEA/MAP, SAT® OR ACT®) OR
- SAT® OR ACT® (taken above-grade-level in or before grade 9) OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

TECHNOLOGY, COMPUTER SCIENCE & ENGINEERING

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

RETURNING FAVORITE! Architecture Studio with AIAC
In this thrilling partnership with American Institute of Architects Chicago, learn the fundamentals of architecture and design through walking tours in the loop, visits to architecture firms and job sites, and an immersive studio design challenge. Using the design process as a guide, practice fundamental skills such as sketching, digital modeling, brainstorming, rapid prototyping, and leading constructive critiques. Work in 2D, 3D, and digital to produce and pitch an original solution, demonstrating your ability to respond and adapt to a complex design brief.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal/Reading + Math OR Science
ADMISSION CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 or SAT ® EBRW ≥550 + SAT® M ≥550 OR ACT® R ≥22 + ACT® M ≥22 or ACT ® S ≥23 OR
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 + SAT® M ≥740 or ACT® R ≥32 + ACT® M ≥30 or ACT® S ≥30 OR
- Admission Portfolio

NOTES: This course is offered at the partnership tuition rate. This course is eligible for the Sandra Dennhardt Technology Scholarship. The first week of this course takes place downtown at the AIA Chicago headquarters on Wacker Drive.
HIGH SCHOOL CREDIT OFFERED: 1 Credit
ABOUT THIS PARTNERSHIP: Just north of the "city of big shoulders," CTD is thrilled to partner with the principal professional organization for licensed architects. The American Institute of Architects Chicago chapter (AIA Chicago) provides vision, values, political advocacy, recognition, and educational resources for Chicagoland. AIAC nurtures & inspires K-12 pathfinders, architecture students, and licensed professionals in the field of architecture and design.

CPU Architecture with Windy City Lab
From microchip to motherboard, smart phone to server, every computer has a "brain," or Central Processing Unit (CPU), and successful computer engineers master CPU architecture. Expand basic digital electronics skills to design, build, and program your own CPU from the ground up. Practice binary logic, registers, flip-flops, arithmetic logic units, memory, and microcode. Create original assembly language and compete in teams to learn whose architecture is most efficient.
OFFERED: July 16 – August 4, 2023
PREREQUISITES: Algebra I AND previous programming experience
SUBJECT AREA ELIGIBILITY: Verbal/Reading + Math OR Science
ADMISSIONS CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 OR SAT M ≥550OR ACT® R ≥22 OR ACT® M ≥22

- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 OR SAT® M ≥740 or ACT® R ≥32 OR ACT® M ≥30
- Admission Portfolio

NOTES: A Windows PC running Windows 10 + or a Mac running Big Sur 10.15 + is required. A mobile phone or tablet with BLE capability running either Android or iOS is required. This course is offered at the partnership tuition rate. This course is eligible for the Sandra Dennhardt Technology Scholarship. This course takes place in the Bosch Connectory® at Merchandise Mart in Downtown Chicago.
HIGH SCHOOL CREDIT OFFERED: 1 Credit
ABOUT THIS PARTNERSHIP: CPU Architecture is the brainchild of former IBM Deck5 Software developer Kevin McQuown, whose passion for digital electronics inspired his laboratory in the Bosch Connectory® at Merchandise Mart in Downtown Chicago. Windy City Lab believes there is no substitute for learning-by-doing, asking questions, and getting your hands on a soldering iron.

RETURNING FAVORITE! Introduction to Cybersecurity
Social media platforms, digital service delivery, and IoT devices are an increasing threat to the security of personal data, power grids, and national defense. Future network engineers and hacktivists learn the foundational scripting languages and networking skills needed to pen test data, device and system vulnerabilities in addition to the software, hardware, and configuration models that fortify them. Hone out-of-the-box decryption and infiltration techniques that cybersecurity specialists use daily while preparing for the CompTIA Security + Exam.
OFFERED: July 16 – August 4, 2023
PREREQUISITES: Algebra II and demonstrated experience in one programming language
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math

- ADMISSIONS CRITERIA:
- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 OR SAT M ≥550 OR ACT® R ≥22 OR ACT® M ≥22
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 OR SAT® M ≥740 or ACT® R ≥32 OR ACT® M ≥30
- Admission Portfolio

NOTES: Additional $135.00 software fee required. This course is eligible for the Sandra Dennhardt Technology Scholarship.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

Introduction to Mechatronics
An autonomous robot needs to have the ability to perceive its environment, make its own decisions, and act on these decisions adaptively. This course will introduce young engineers and programmers to the intersection of programming and electronics. Students will learn how to program and integrate servo motors, sensors, manipulators in Arduino IDE. As a capstone project, students will build an autonomous robot to compete in a design competition.
OFFERED: July 16 – August 4, 2023
PREREQUISITE: Algebra I
SUBJECT AREA ELIGIBILITY: Verbal/Reading + Math OR Science
ADMISSIONS CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 or SAT® EBRW ≥550 + SAT® M ≥550 OR ACT® R ≥22 + ACT® M ≥22 OR ACT® S ≥23 OR
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 + SAT® M ≥740 OR ACT® R ≥32 + ACT® M ≥30 or ACT® S ≥30 OR
- Admission Portfolio

NOTES: Additional $175.00 lab fee required. This course is eligible for the Sandra Dennhardt Technology Scholarship.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

RETURNING FAVORITE! IoT Engineering with Windy City Lab
Internet of Things (IoT) devices are transforming our expectations for domestic convenience and manufacturing alike. Design and assemble an IoT device. Build on basic skills in software and hardware engineering, using professional tools for creating schematics and printed circuit boards. Write firmware in C/C++ for the ARM Cortex M Microcontroller family. Implement communication protocols such as Low Energy Bluetooth (BLE), cellular, WiFi, and MQTT connecting IoT devices to smartphones, and to the cloud.
OFFERED: June 25 – July 14, 2023
PREREQUISITES: Algebra I AND previous programming experience
SUBJECT AREA ELIGIBILITY: Verbal/Reading + Math OR Science
ADMISSIONS CRITERIA:

- Above-grade-level test (taken in or before grade 9: SAT® R ≥28 or SAT® EBRW ≥550 + SAT® M ≥550 OR ACT® R ≥22 + ACT® M ≥22 or ACT® S ≥23 OR
- On-grade-level test (taken in grade 10 or 11): SAT® EBRW ≥700 + SAT® M ≥740 or ACT® R ≥32 + ACT® M ≥30 or ACT® S ≥30 OR
- Admission Portfolio

NOTES: A Windows PC running Windows 10 + or a Mac running Big Sur 10.15 + is required. A mobile phone or tablet with BLE capability running either Android or iOS is required. This course is offered at the partnership tuition rate. This course is eligible for the Sandra Dennhardt Technology Scholarship. This course takes place in the Bosch Connectory® at Merchandise Mart in Downtown Chicago.
HIGH SCHOOL CREDIT OFFERED: 1 Credit
ABOUT THIS PARTNERSHIP: Windy City Lab is the brainchild of former IBM Deck5 Software developer Kevin McQuown, whose passion for digital electronics inspired his laboratory in the Bosch Connectory® at Merchandise Mart in Downtown Chicago. Windy City Lab believes there is no substitute for learning-by-doing, asking questions, and getting your hands on a soldering iron.

RETURNING FAVORITE! Machine Learning Seminar
At the heart of artificial intelligence is machine learning: algorithms that learn from data. Aspiring data scientists will use Python, linear regression, and large data sets to build predictive models. Construct machine learning tasks such as classification, regression, clustering, supervised and unsupervised tasks. Examine how data samples can build bias into machine learning tasks. Gain exposure to the fields of software engineering, data analytics, and risk management.
OFFERED: June 25 – July 14, 2023
PREREQUISITES: Algebra II AND demonstrated experience in one programming language
SUBJECT AREA ELIGIBILITY: Verbal/Reading OR Math
ADMISSIONS CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® R ≥28 OR SAT® EBRW ≥550 OR SAT® M ≥550 OR ACT® R ≥22 OR ACT ® M ≥22
- On-grade-level test (taken in grade 10 or 11): SAT ® EBRW ≥700 OR SAT® M ≥740 or ACT® R ≥32 OR ACT® M ≥30
- Admission Portfolio

NOTES: This course is eligible for the Sandra Dennhardt Technology Scholarship.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

MATHEMATICS

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

NOTE: For all math courses, a graphing calculator is required in addition to a laptop computer.

Algebra II & Trigonometry Honors
Algebra II & Trigonometry Honors covers systems, equations, polynomial arithmetic, complex numbers, solutions of quadratic equations, exponential and logarithmic functions, sequences, series, graphs of polynomial functions, conic sections, and concepts in trigonometry, including trigonometric identities. Algebra II & Trigonometry Honors is a full-year course in an accelerated format.
OFFERED: June 25 – July 14, 2023 & July 16 – August 4, 2023
PREREQUISITE: Algebra I
SUBJECT AREA ELIGIBILITY: Math
ADMISSIONS CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® M ≥550 OR ACT® M ≥22 OR
- On-grade-level test (taken in grade 10 or 11): SAT® M ≥740 or ACT® M ≥30 OR
- Admission Portfolio

NOTES: A graphing calculator is required.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

RETURNING FAVORITE! AP® Calculus AB
Rocket scientist or brain surgeon, architect or engineer, the study of calculus is foundational. This college-level course covers analytic geometry, functions, limits, continuity, derivatives, integrals, and their applications. It explores symbolic differentiation and integration utilities as students apply these skills to solve problems. AP® Calculus AB is a full-year high school course in an accelerated format and prepares students to take the AP® Calculus AB exam.
OFFERED: June 25 – July 14, 2023
PREREQUISITE: Pre-Calculus
SUBJECT AREA ELIGIBILITY: Math
ADMISSIONS CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® M ≥550 or ACT® M ≥22 OR
- On-grade-level test (taken in grade 10 or 11): SAT M ≥740 or ACT M ≥30 OR
- Admission Portfolio

NOTES: A graphing calculator is required.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

RETURNING FAVORITE! AP® Statistics
Collecting, analyzing, and drawing conclusions from data are skills required in virtually every discipline. Explore theories of probability, descriptions of statistical measurements, probability distributions, and experimental and statistical inference. Develop research proposals, collect and analyze data, and complete a comprehensive statistical project. AP® Statistics is a full-year course taught in an accelerated format designed to prepare students for the AP® Statistics exam. It lays the foundation for advanced studies in data analytics, engineering, and the actuarial sciences.
OFFERED: July 16 – August 4, 2023
PREREQUISITE: Algebra II
SUBJECT AREA ELIGIBILITY: Math
ADMISSIONS CRITERIA:

- Above-grade-level test (taken in or before grade 8): SAT® M ≥550 OR ACT M ≥22 OR

- On-grade-level test (taken in grade 10 or 11): SAT® M ≥740 or ACT® M ≥30 OR
- Admission Portfolio

NOTES: A graphing calculator is required.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

Data Science: Introduction to Statistics
Learn how Nate Silver uses big data to analyze politics and sports; create predictions and model complex situations, leveraging huge quantities of data. Discover how probability theory informs statistical methods; use R or Python to visualize data, perform simulations, and validate models. Engage in original, independent research in which you identify, collect, and interpret big data.
OFFERED: July 16 – August 4, 2023
PREREQUISITE: Algebra I
SUBJECT AREA ELIGIBILITY: Math
ADMISSIONS CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® M ≥550 OR ACT® M ≥22 OR
- On-grade-level test (taken in grade 10 or 11): SAT® M ≥740 or ACT® M ≥30 OR
- Admission Portfolio

NOTES: A graphing calculator is required.
HIGH SCHOOL CREDIT OFFERED: 1 Credit

NEW! Econometrics & Quantitative Analysis
Gain insight from economic data such as inflation, unemployment, and interest rates. Explore the intersection of economics, statistics, and computer science to describe how local, national, and global economies change. Design economic models to understand real world phenomena. Apply economic theories to appraise and recommend informed fiscal and monetary policies.
OFFERED: July 16 – August 4, 2023
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:

- ≥ 95th national percentile rank in math on grade-level standardized achievement test (e.g. NWEA/MAP, SAT® OR ACT®)
- SAT® OR ACT® (taken above-grade-level in or before grade 9) OR
- Admission Portfolio

NOTES: A graphing calculator is required.
HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

Geometry Honors
Geometry Honors covers formal proofs, logic and deductive reasoning, constructions, congruence and similarity, parallels and perpendiculars, polygons and circles, transformations and problem solving using advanced technology. Geometry Honors is a full-year high school course intended for students who plan to accelerate in their district's math sequence.
OFFERED: June 25 – July 14, 2023
PREREQUISITES: Algebra I
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® M ≥550 OR ACT® M ≥22 OR
- On-grade-level test (taken in grade 10 or 11): SAT® M ≥740 or ACT® M ≥30 OR
- Admission Portfolio

NOTES: A graphing calculator is required.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

Pre-Calculus Honors
Build upon advanced algebra. Topics include linear, quadratic, polynomial, exponential, logarithmic, and trigonometric functions. Students apply vectors, sequences, series, and matrices to solve problems. Advanced topics include functions and graphs, trigonometry, and discrete mathematics. Pre-Calculus Honors is a full-year high school course in an accelerated format and prepares students for taking AP® Calculus AB.
OFFERED: July 16 – August 4, 2023
PREREQUISITES: Geometry AND Algebra II with Trigonometry
SUBJECT AREA ELIGIBILITY: Math
ADMISSION CRITERIA:

- Above-grade-level test (taken in or before grade 9): SAT® M ≥550 OR ACT® M ≥22 OR
- On-grade-level test (taken in grade 10 or 11): SAT® M ≥740 or ACT® M ≥30 OR
- Admission Portfolio

NOTES: A graphing calculator is required.
HIGH SCHOOL CREDIT OFFERED: 2 Credits

LEADERSHIP & SERVICE

For course-specific admission criteria, please visit Explore Courses here and scroll down the page. Select the + button to view each course.

RETURNING FAVORITE! Civic Leadership Institute
CLI students explore the complex challenges that affect our communities and develop the knowledge, experience, and leadership skills they need to make a positive impact on the world through academic study and service-learning experiences.
OFFERED: June 25 – July 14, 2023
SUBJECT AREA ELIGIBILITY: Verbal or Reading
ADMISSION CRITERIA:

- ≥ 90th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP, SAT® OR ACT®)
- SAT® OR ACT® (taken above-grade-level in or before grade 9) OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)

RETURNING FAVORITE! Sports Business Management

What does it take to run a multibillion-dollar sports team? In this fast-pitch course, we discuss league financial structures, marketing and communication strategies, legal affairs, and event management. Consider the impact sports have on individuals, groups, and nations. Present a research-based action plan to improve a chosen sports organization.

OFFERED: June 25 – July 14, 2023, AND July 16 – August 4, 2023

SUBJECT AREA ELIGIBILITY: Verbal or Reading

ADMISSION CRITERIA:

- ≥ 95th national percentile rank in verbal or reading on grade-level standardized achievement test (e.g. NWEA/MAP, SAT® OR ACT®)
- Above-grade-level test (taken in or before grade 9): SAT® OR ACT® OR
- Admission Portfolio

HIGH SCHOOL CREDIT OFFERED: None (Enrichment)