

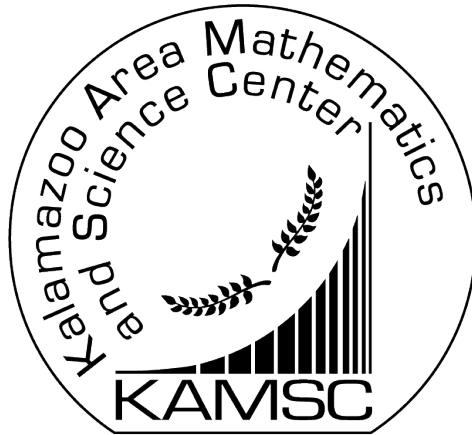
YOU'RE INVITED TO CONSIDER

THE

**KALAMAZOO AREA
MATHEMATICS AND
SCIENCE CENTER
(KAMSC)**

2023-2024

*Information for Applicants for
10th, 11th, & 12th Grades, and
their Parents and Guardians*



COMMITMENT TO EXCELLENCE

Dear Parents and Guardians:

The Kalamazoo Area Mathematics and Science Center (KAMSC) was established in 1986 with a two million dollar grant from the former Upjohn Company in honor of its centennial anniversary. Its mission is to deliver educational experiences to eligible students capable of benefiting from a highly rigorous, sequential and integrated exposure to mathematics, science and technology in an environment where respect for self and others is valued. Over thirty-five years later, KAMSC is still a viable option in the community for those young minds interested in mathematics and science.

Current ninth, tenth, and eleventh graders have the opportunity to apply for seats in the upper-grade levels, based on availability. During the current 2022-2023 school year, KAMSC has nearly three hundred students enrolled in grades nine through twelve.

We invite you to review this information in order to determine whether or not your child is interested in applying for this educational opportunity. You may want to consult with your student's current science and mathematics teachers and guidance counselor, or direct additional questions to the Center's staff. We invite you to review the KAMSC web site (kamsc.org), as well.

Sincerely,

A handwritten signature in black ink that reads "Michael Tanoff". The signature is written in a cursive style with a small dot above the letter 'i' in "Michael".

Dr. Michael A. Tanoff, Director

THE PROGRAM

Students attend the KAMSC program for one-half of each school day and take their mathematics, science and technology courses at the Center. All remaining courses are taken at their district, private, parochial, or home high schools, with these schools often transporting students to and from the Center. Students ultimately receive their diplomas from their district, private, parochial, or home high schools, but receive an additional certificate of completion from KAMSC.

Course offerings for the tenth-grade class center primarily on the instruction of chemistry, integrated mathematics, and computer science. Course offerings for the eleventh grade center on physics and integrated math, with science, mathematics, and computer science electives available.

WHO IS ELIGIBLE

By signed agreement between the nine public school districts of Kalamazoo County and the Kalamazoo Regional Educational Service Agency (KRESA), enrollment shall be limited to 1) students who reside within the boundaries of the nine signatory school districts and 2) students who attend any of the public, non-public, or home schools located within the boundaries of the nine signatory school districts. If unassigned student positions exist after considering applications from the foregoing, the Executive Council may, in its sole discretion, consider, in person or electronically, the recommendation of the KAMSC director to enroll students residing outside of the service area, but only in accordance with established policy.

Students who wish to apply for the program should have high interest and ability in participating in a rigorous, accelerated program of study in both mathematics and science. Ninth-grade students should be enrolled in a biology class and a geometry class; tenth graders should be enrolled in a chemistry class and an algebra II class; and eleventh graders in a physics and pre-calculus class. If a student is not enrolled in these courses, the student must meet with the Director or school representative to determine how these required courses could be completed.

HOW STUDENTS ARE SELECTED

Students are selected in a two-phase process. First, students must register and take the School and College Ability Test (SCAT) and participate in a timed impromptu writing sample activity. The online Entrance Exam Registration Form can be found on the KAMSC website at kamsc.org/apply. The completed form must be submitted online no later than **Friday, March 10, 2023**.

The exam will be administered at KAMSC on **Monday, March 20th at 1:00pm**. Please mark your calendar accordingly, as we are unable to send reminders. The entrance exam results will be emailed to you within two weeks after taking the test.

For those who choose to continue with the application process, after receiving your test results via email, the upper class application packet will be available online from the KAMSC website (kamsc.org) the beginning of April. The application packet includes forms to be completed by the student, parents/guardians, the student's science, mathematics and English teachers and counselor. All parts of the application must be received in the KAMSC office by **Monday, May 1, 2023**.

During May 2023, application documents and exam scores are reviewed by an independent review panel, in order to determine potential for success in the KAMSC program. The KAMSC faculty is not involved in the selection process in any way. Each applicant will receive a letter indicating whether or not they have qualified to attend KAMSC. As openings become available, invitations will be extended to attend KAMSC.

THE APPLICANT REVIEW PANEL

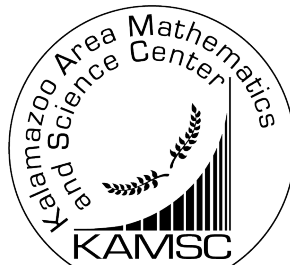
The Applicant Review Panel is composed of local educators and professionals, including area mathematics, science and English teachers, counselors, individuals from higher education, business and industry professionals, scientists, mathematicians and community leaders.

THE KAMSC CURRICULUM

Although the curriculum is dynamic, building with the experience of the staff and the students, certain basic elements have been established by a curriculum sub-committee and approved by the Center's Advisory Committee.

1. The Center provides a program in mathematics, science, and technology which no individual school in the service area can provide. The program is unique in the area.
2. The Center's curriculum follows two paths simultaneously:
 - a. One component provides accelerated instruction in standard science and mathematics principles. Every effort is made to ensure that students have mastered basic concepts and skills in science and mathematics.
 - b. The other component concentrates on providing an enriched approach to learning, encouraging active student participation in challenging and interesting topics and projects in each discipline.
3. Communication skills (reading, speaking, writing, listening and observing, problem solving and thinking skills) are an integral part of the curriculum.
4. Students will be provided with many opportunities to perform experiments and do research at the Center, both with the Center's staff and through partnership with professional scientists, mathematicians and other experts from outside the Center.
5. The Center will offer courses in mathematics, physical sciences, biological sciences, earth sciences, computers and related fields.

6. The curriculum offered will be embedded in a technology enriched environment that includes accessing the Internet and global communication via e-mail. The curriculum will be innovative in both course content and in methods of delivery.
7. Computer usage (beginning programming, laboratory interfacing and educational software applications) will be an essential component in the education of students at the Center.
8. If a student progresses beyond the Center's program, they will be encouraged to take courses at Kalamazoo College, Western Michigan University and other schools of higher education in the area.



PATHS TO LEARNING

Students take three classes each semester at the Center. They become eligible to take their first elective class during their junior year.

TYPICAL FOUR-YEAR SCHEDULE

9th GRADE

KAMSC Biology (Honors)
KAMSC Information Technology (Honors)
KAMSC Integrated Mathematics I/Geometry or Integrated Mathematics II/Alg. II
or Integrated Mathematics III/Pre-Calculus (all Honors) or AP Calculus
KAMSC Research Science

10th GRADE

KAMSC Chemistry (Honors)
KAMSC Computer Studies (Honors)
KAMSC Integrated Mathematics II/Alg. II or
Integrated Mathematics III/Pre-Calculus (both Honors) or AP Calculus
KAMSC Research Science

11th GRADE

KAMSC Physics (Honors)
KAMSC Integrated Mathematics III/Pre-Calculus (Honors) or AP Calculus
or KAMSC Advanced Calculus (Honors)
KAMSC Research Science

12th GRADE

AP Calculus or KAMSC Advanced Calculus (Honors)

ELECTIVES LIST FOR 11th & 12th GRADE

KAMSC Biochemistry (Honors)
KAMSC Biomedical Science (Honors)
AP Environmental Sciences
KAMSC Organic Chemistry (Honors)
AP Chemistry
AP Biology
KAMSC Human Genetics (Honors)
AP Physics C Mechanics
AP Physics C Electricity and Magnetism
KAMSC Independent Research
AP Computer Science A
KAMSC Advanced Computer Science (Honors)
AP Statistics
KAMSC Bioethics (Honors)
KAMSC Astronomy (Honors) (Seniors)
KAMSC Advanced Calculus (Honors)
KAMSC Complex Variables (Honors)
KAMSC Differential Equations (Honors)
KAMSC Geology (Honors) (Seniors)
KAMSC Material Science (Honors)
KAMSC Microbiology (Honors)
KAMSC Discrete Math (Honors)
KAMSC Zoology (Honors)

KAMSC Information Technology is a survey course designed to integrate select components of math and science. Students utilize diverse technologies to explore, develop, analyze and produce appropriate products. Applications include software utilization; computers as a scientific tool; data analysis; research preparation and presentation; and various media technologies. The sophomore technology class, KAMSC Computer Studies, provides students with a survey of computer science concepts and includes an introduction to computer programming in C++ and Java. Emphasis is placed on development of problem solving and critical thinking skills.

During their junior and senior years, each student may select one and two electives, respectively.

SAMPLE NINTH GRADE COURSE OUTLINES

To provide you with an idea of the intensity and content of core courses, we have provided two sample topic course outlines:

KAMSC Integrated Mathematics I (Honors)

Problem Solving
Introduction to Programming with Graphing Calculator
Exploratory Data Analysis
Relations, Functions and their Graphs
Basic Concepts in Geometry
Geometry with Coordinates
Introduction to Transformational Geometry
Introduction to Probability
Mathematical Language and Proof
Congruence of Plane Figures
Area and Volume
Similarity of Plane Figures
Circles and Spheres
Introduction to Trigonometry

KAMSC Biology (Honors): Suggested Units

Basic Biology Lab Techniques
Ecology and Botany
Chemistry / Biochemistry
Energy Transformations
Cell Biology
Microbiology
Natural Selection
Human Systems
Genetics

CENTER OFFERS EXPANDED TECHNOLOGY

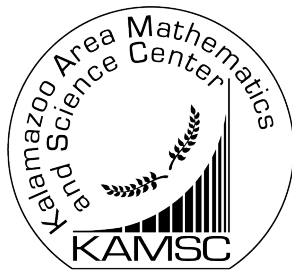
From standard beakers and test tubes to sophisticated scientific instruments, state-of-the-art multi-media equipment, computers and graphing calculators, the fourth floor of the Community Education Center (CEC) is fully equipped to educate tomorrow's scientists and mathematicians.

The Center currently includes four lecture/discussion areas, two computer laboratories, four laboratory/discussion areas, a reading resource area, two special project labs and an administrative office. There is a 160-seat multi-media presentation center, bringing the Center to a total of 24,820 square feet.

RESEARCH EXPERIENCE

The Kalamazoo Area Mathematics and Science Center is committed to the integration of subject matter with research and design skills. Each student participates in a coordinated sequential four year research experience which includes developing skills in accurate and reliable observations, use of professional mathematics and science literature, and practicing experimental design and analysis methods. A record of research outcome based expectations is maintained in the student's portfolio as proof of completion and evaluation of this research experience. The research outcome based expectations include:

- *Experiences with scientific research methods*
- *Literature review*
- *Use of scientific technology*
- *Techniques used in writing professional reports and papers*
- *Participating in conferences and seminars*
- *Using research design and statistical analysis techniques*
- *Completion of research projects*
- *Presentation of research findings*



FOR MORE INFORMATION CONTACT:

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600 West Vine Street, Suite 400
Kalamazoo, Michigan 49008-1153
269-337-0004

kamscc.org

February 2023