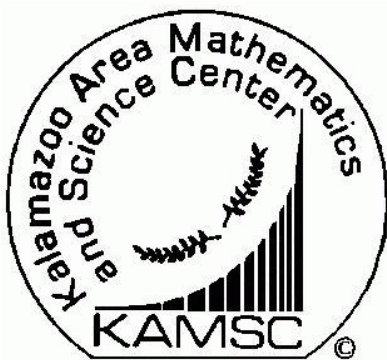


**YOU'RE INVITED TO CONSIDER  
THE  
KALAMAZOO AREA  
MATHEMATICS AND  
SCIENCE CENTER  
(KAMSC)**

**for  
2017-2018**

*Information for Applicants  
for 10<sup>th</sup>, 11<sup>th</sup>, & 12<sup>th</sup> Grades  
and their Parents*



**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. Thirty 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 2016-2017 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 ([kamsconline.com](http://kamsconline.com)), as well.

Sincerely,

A handwritten signature in black ink that reads "Michael Tanoff". The signature is written in a cursive style.

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 Entrance Exam Registration Form can be found on the KAMSC website. The completed form may be mailed, faxed, or turned in to the KAMSC office and must be received no later than **March 10, 2017**. All exam registrants will receive an entrance exam ticket that will designate the time and date. Please mark your calendar accordingly, as we are unable to send reminders. The entrance exam results will be mailed to you approximately two weeks after taking the test.

For those who choose to continue with the application process, after receiving your test results in the mail, the application packet will be available online and may be downloaded from the KAMSC website ([kamsconline.com](http://kamsconline.com)) 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 **4:00p.m. on May 1, 2017**.

During May 2017, 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, she/he 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 during their junior year.

### ***TYPICAL FOUR-YEAR SCHEDULE***

#### **9<sup>th</sup> 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)  
KAMSC Research Science

#### **10<sup>th</sup> 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

#### **11<sup>th</sup> GRADE**

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

#### **12<sup>th</sup> GRADE**

AP Calculus or KAMSC Advanced Calculus (Honors)

#### **ELECTIVES LIST FOR 11<sup>th</sup> & 12<sup>th</sup> GRADE**

KAMSC Biochemistry (Honors)  
KAMSC Biomedical Science (Honors)  
AP Environmental Sciences  
KAMSC Organic Chemistry (Honors)  
AP Chemistry  
AP Biology  
KAMSC Cell Biology (Honors)  
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 Geology (Honors) (Seniors)  
KAMSC Microbiology (Honors)  
KAMSC Discrete Math (Honors)  
KAMSC Advanced Calculus (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; various media technology. The sophomore technology class, 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 year, each student may select one elective. A one-semester mentorship experience with a professional is encouraged for twelfth grade students.

### **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 Statistics  
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  
Microbiology  
Natural Selection  
Human Systems  
Genetics

### **CENTER OFFERS EXPANDED TECHNOLOGY**

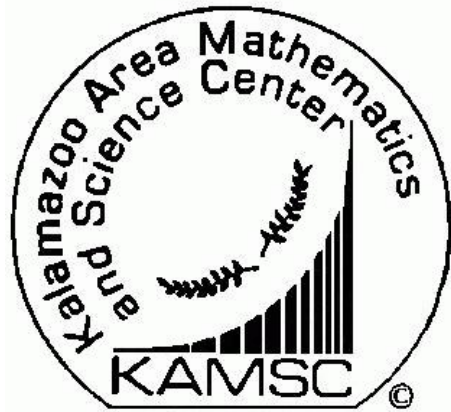
From standard beakers and test tubes to sophisticated scientific instruments, state-of-the-art multi-media equipment, computers and graphing calculators, the fourth floor of the Community Education Center (CEC) is fully equipped to educate tomorrow's scientists and mathematicians.

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:**

**KALAMAZOO AREA MATHEMATICS AND SCIENCE CENTER  
600 WEST VINE STREET, SUITE 400  
KALAMAZOO, MI 49008-1153  
269-337-0004 (PHONE)  
269-337-0049 (FAX)**

January 2017