SPRING 2015

GEAR UP

With

DAPCEP

Join your friends and make new ones while you explore the exciting worlds of science, technology, engineering & math!

February 21 thru March 28

APPLY NOW

www.dapcep.org/apply/applyforgearup

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Southfield Public Schools

DAPCEP

January, 2015

Dear Students and Parents,

Happy New Year!

In 2015, DAPCEP will celebrate 39 years of service to Metropolitan Detroit youth. To all our students, parents, teachers, alumni, volunteers, program partners, staff, board of directors, sponsors, and philanthropic community, we say, thank you.
Your commitment is unprecedented and sincerely valued.

DAPCEP is thrilled about 2015. Thanks to your input and ideas, we are planning an outstanding season of educational programming for children who are in Pre-K to 3rd grade. It is important to us to continue to listen to you to better understand your engagement with DAPCEP and what type of programming you would like to see now and in the future. So, please, talk to us!

Over the years, we have observed how this program changes lives by exposing, motivating, and preparing our youth for the future no matter what degree, career or entrepreneurial endeavor they pursue. We are honored that you have elected to invest your time and resources with us.

Thank you for allowing us to share these opportunities with you.
Welcome to DAPCEP!

Sincerely,

Jason D. Lee, Executive Director

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DAPCEP SUPPORTERS

DAPCEP is made possible by the generous support and collaboration of universities, corporations, foundations, churches, community organizations, public entities, alumni, friends, and parents.

CORPORATE, FOUNDATION & COMMUNITY PARTNERS

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Triumph Church

MISSION

The mission of **DAPCEP** is to increase the number of historically underrepresented students who aremotivated and prepared academically to pursue degrees leading to careers in Science, Technology,Engineering and Mathematics (STEM) related fields through K-12 supplemental educational programming.

ABOUT SATURDAYS

Every spring and fall, hundreds of students from across metropolitan Detroit participate in DAPCEP Saturday programming.

Through our partnerships with Michigan universities, community organizations, and corporations, we are able to offer students unique, hands-on courses in science, technology, engineering and mathematics.

Each course is comprised of a series of five (5), consecutive Saturday sessions held on a university or community campus. Students receive a certificate of completion and participate in a final showcase at the conclusion of the semester. Bus transportation is available for most courses.

Through the generous support of our sponsors, partners, alumni, parents, and community, we are able to provide these courses tuition-free to students. A $25 application fee is required, however, GEAR UP Students fees are waived.

DAPCEP has exposed, motivated, and prepared students for futures as engineers, doctors, scientists, entrepreneurs and more since 1976. To get a better understanding of the impact of the program, we encourage you to speak to current students, alumni, and parents who are all part of the DAPCEP family!

POLICY & PROCESS

Application Period

Our application periods occur online during January for Spring programming, and during September for Fall programming. The application period for Spring 2015 Saturday programming is December 26, 2014 – January 30, 2015.

Application Process

1. Select a minimum of two courses, a first choice and a second choice, by noting the course code numbers.
2. Go to www.dapcep.org/apply
3. Click on “Apply to GEAR UP”.
4. Complete the application

Certification

1. Student must attend all class sessions. Any student who misses two (2) class sessions (regardless of circumstances) will not receive a certificate. Class sign-in sheets determine attendance.
2. Student shall not be tardy more than one (1) time or he/she will not receive a certificate.
3. If required by a particular course, students shall achieve 80% (B letter grade) or higher from the overall course.
4. Students must complete all homework assignments, take all exams, surveys, and complete a pre and post test.

PLEASE NOTE

Students are expected to be at the bus locations 30 minutes before departure.

Parents can ask bus monitors for the approximate time for student pick up.

Some classes are not supported by the bus system and this is noted in the course description.

Please be prompt in dropping off and picking up your student

DAPCEP BUS DEPOT LOCATIONS

Old DAPCEP Office

100 Farnsworth, Suite 249, Detroit, MI

BUS: The bus will be on Farnsworth

GOING TO
- Lawrence Technological University
- Oakland University
- University of Michigan Dearborn

Chandler Park Academy

High School Building
20254 Kelly Rd., Harper Woods, MI

BUS: The bus will be in the High School parking lot

GOING TO
- All classes held at UAW-GM
- Lawrence Technological University
- Triumph Church/Wayne State University
- University of Detroit Mercy

Lawrence Technological University

20220 Ten Mile Rd., Southfield, MI

BUS: The bus will be in the High School parking lot

GOING TO
- All classes held at UAW-GM
- Oakland University
- Triumph Church/Wayne State University
- University of Michigan Dearborn
- University of Michigan Ann Arbor

TRANSPORTATION ROUTES ARE SUBJECT TO CHANGE OR CANCELLATION BASED ON THE NUMBER OF STUDENT RESERVATIONS

PROGRAM DIRECTORS

OAKLAND UNIVERSITY
Chris Kobus
248-370-2489

SUPER ACHIEVERS (EXAM EXPERTS) LEARNING ACADEMY
Michael Mayberry
313-259-4232

TRIUMPH CHURCH
Dr. Brenda Hague
248-822-0897

UNIVERSITY OF MICHIGAN ANN ARBOR
Hans Sowder
734-647-7124

UNIVERSITY OF MICHIGAN DEARBORN
Dean Keshav Varde
Lisa Miller
313-593-5510

UNIVERSITY OF DETROIT MERCY
Arneshia Austin
313-993-1435

WAYNE STATE UNIVERSITY
Patrina Carper
313-577-3040
or
313-731-2184

10th Grade

February 21 thru March 28

PROGRAM PARTNER	COURSE NAME	CODE	TIME
Motivating Factors (Exam Experts)	Exam Experts ACT Level 1	22525	9AM - 12PM
Oakland University	Vex Robotics	22075	9AM - 12PM
University of Michigan Ann Arbor	Build it Bigger, Better, Stronger	28030	9AM - 1PM
University of Michigan Ann Arbor	Glow Blue! (Nuclear Engineering)	28010	9AM - 1PM
University of Michigan Ann Arbor	Pirates of Michigan	28015	9AM - 1PM
University of Michigan Ann Arbor	Hand it to Engineers	28050	9AM - 1PM
University of Michigan Ann Arbor	Water: Treat it Right!	28055	9AM - 1PM
University of Michigan Ann Arbor	Wonders of Flight	28025	9AM - 1PM
University of Michigan Ann Arbor	Engineering the World Around Us	28045	9AM - 1PM
University of Detroit Mercy	Discovery of Life	20515	9AM - 12PM
University of Detroit Mercy	The Chemical World	20535	9AM - 12PM
University of Michigan Dearborn	Laboratory Science	21515	9AM - 12:30PM
Wayne State University	Exploring Renewable Energy	21050	9AM - 12PM
Wayne State University	Study Smarter Not Harder	21020	9AM - 12PM
Wayne State University	Think 3-D Geometry	21030	9AM - 12PM
University of Detroit Mercy	ACT Prep	20565	9AM - 12PM
Oakland University	Algebra II	22050	9AM - 12PM
Oakland University	Calculus	22035	9AM - 12PM
University of Michigan Dearborn	ACT - SAT Math Prep	21520	9AM - 12:30PM
Oakland University	Chemistry II	22070	9AM - 12PM
Triumph Church	Digital Character Design	20600	9AM - 12PM
Walker Miller Energy	Light up Detroit with LEDs	29005	9AM - 12PM

EXAM EXPERTS ACT CONQUERORS PROGRAM (LEVEL 1) - 22525

Motivating Factors (Exam Experts) - UAW GM, 200 Walker St., Detroit, MI 48207

Level 1 is an informative course will provide systemic, comprehensive training for the new ACT exam, utilizing ExamExperts' highly motivational Accelerated Retention Learning (ARL) training method. Students will complete 500 practice questions, and receive preparation in the following areas: substantive (content), procedural (technique), psychological (mental preparation), and physiological (nutrition). Subjects covered include English, mathematics, reading comprehension, writing and science reasoning. Major focus is placed upon building student confidence while eliminating test anxiety. Techniques for internet scholarship research are also taught.

VEX ROBOTICS - 22075

Oakland University

This introductory-level course for the serious student who has an interest in VEX Robotics. Employing a "problem-based classroom" teaching approach, the instructor will give the students the directions for building the basic claw bot and allow them to build in groups of 2 to 5 depending on class size. Once the robots are built, the instructors will teach basic RobotC programming. Students will work as they learn. Instructors will teach concepts and ideas as needed by each group. The course is administered over five Saturdays from 9 AM to 12 PM on the campus of Oakland University. Student success will be heavily dependent upon their commitment to excellence while in class. The admissions process will depend on the number of students who apply.

BUILD IT BIGGER, BETTER, STRONGER! - 28030

University of Michigan Ann Arbor

Sponsored by the Department of Civil Engineering and the American Society of Civil Engineers, "Build it Bigger, Better, Stronger!" provides a hands-on learning experience for students interested in a future career in the field of Civil and Environmental Engineering. Students will challenge their peers in bridge building, engage in a surveying scavenger hunt, explore a sustainable facility, and build upon their math and science skills through a variety of interactive lessons.

GLOW BLUE - 28010

University of Michigan Ann Arbor

Sponsored by the top-ranked Department of Nuclear Engineering and Radiological Sciences, "Glow Blue" provides an introduction to basic physics, energy sources, and contemporary topics in nuclear engineering. Through hands-on activities and group discussions, students will learn the inner workings of a nuclear reactor, why there is a debate over nuclear energy, and how scientists use virtual reality to better understand radiation physics.

PIRATES OF MICHIGAN - 28015

University of Michigan Ann Arbor

Sponsored by the Department of Naval Architecture and Marine Engineering, "Pirates of Michigan" introduces students to the unique challenges facing engineers in an aqueous environment. Students will explore topics including hydrodynamics, marine engineering, ship design, underwater remote operated vehicles, and virtual reality.

HAND IT TO ENGINEERS - 28050

University of Michigan Ann Arbor

Sponsored by the Department of Biomedical Engineering and the Biomedical Engineering Society, "Hand it to Engineers" introduces students to the application of science and engineering principles to solve real medical problems. Students will draw inspiration from human anatomy and physiology to design and animate a prosthetic hand. In the process, students will gain hands-on experience interacting with electrical and mechanical systems. Lessons will also incorporate other key topics in biomedical engineering.

WATER: TREAT IT RIGHT! - 28055

University of Michigan Ann Arbor

Sponsored by the Civil and Environmental Engineering Department, "Water: Treat it Right!" will explore water treatment as a crucial aspect of sustaining our population and the environment, especially as our fresh water supplies diminish. Innovations to drinking and wastewater treatment allow for exciting potentials such as: resource recovery (harvesting valuable product from the waste in our water), power generation (gaining renewable energy from waste), and water reuse applications (creative use of wastewater in our homes and businesses). This course will be an introduction to the process of water treatment, including what happens to your water when it runs down the drain, and how it again comes out of your faucets. We will also focus on modern innovations to traditional wastewater treatment, which allow us to get the most out of our wastewater. Every drop counts… let's learn how to treat it right!

WONDERS OF FLIGHT - 28025

University of Michigan Ann Arbor

Sponsored by the Department of Aerospace Engineering and the Michigan Space Grant Consortium, "The Wonders of Flight" provides an overview of the physics of flight, including aerodynamics, jet propulsion, rocket fabrication, wind tunnel testing, and space exploration. The lessons and hands-on activities will challenge students to explore math, physics, astronomy, and aerospace engineering and include launching rockets and building balsa wood gliders.

ENGINEERING THE WORLD AROUND US - 28045

University of Michigan Ann Arbor

Engineering the world around us aims to give students an idea of what it means to be a mechanical engineer. The course specifically focuses on aspects of everyday life that mechanical engineers impact. Students will be introduced to the type of problems that modern mechanical engineers face and tools they use to tackle them. They will also learn the fundamental principles of mechanical engineering and then apply their problem solving skills to challenges that are mechanical in nature, such as designing a paper boat to hold as much weight as possible. With engineering anything is possible.

DISCOVERY OF LIFE - 20515

University of Detroit Mercy

This biology course will cover the following topics in a lab setting: anatomy, physiology, predation, and ecology. There will be extensive dissections.

THE CHEMICAL WORLD - 20535

University of Detroit Mercy

This course is taught by Chemistry professors with significant support from the students of the Chemistry Club. Topics covered are: Electro-chemistry (using fruit to make batteries), density (mini submarine experiment), acids/bases (using cabbage as an indicator to test household products), polymers (classifying plastics, super absorbent polymers used in diapers), dye chemistry (Tie Dye T-shirts) and chromatography.

LABORATORY SCIENCE - 21515

University of Michigan Dearborn

This class is designed to expose students to elementary science through experiments in physics, chemistry, biology and environmental science. Students will conduct experiments in groups, present their findings and discuss their results. The experiments are designed to help students learn the underlying science concepts and how to apply them. The class will be conducted in a laboratory setting.

EXPLORING RENEWABLE ENERGY - 21050

Wayne State University

This course will introduce students to a basic study of renewable energy. The course will specifically focus on sunshine and wind as major non-polluting sources of renewable energy. Students will familiarize themselves with topics in energy efficiency and conservation with a focus on converting the energy from wind, solar and hydrogen to usable energy. **To be eligible for a certificate, students must complete all classroom and homework assignments, and take the pre and post-test.**

SATURDAY COURSES

STUDY SMARTER NOT HARDER - 21020

Wayne State University

This course will teach students how to become more proficient at studying. Students will build a strong foundation of learning skills which they can use to develop study skills, expand their knowledge base, build confidence in their learning ability and improve their grades. T**o be eligible for a certificate, students must complete all classroom and homework assignments, and take the pre and post-test.**

THINK 3-D GEOMETRY - 21030

Wayne State University

The purpose of this class is to familiarize students with geometry concepts and principles, and to assist them in developing three-dimensional thinking skills via solid geometry. Class will consist of lecture, group & individual work, question and answer time, homework, and quizzes. **To be eligible for a certificate, students must complete all classroom and homework assignments, and take the pre and post-test.**

ACT PREP - 20565

University of Detroit Mercy

In this preparation course, students will learn to master concepts of the ACT Exam required to enter colleges and universities. Students will explore concepts in Math, Science, Reading and Computers to ensure a better understanding of each subject when preparing to take the exam.

ALGEBRA II FOR ENGINEERS & SCIENTISTS - 22050

Oakland University

This rigorous course is for the high achieving student who has mastered concepts in Algebra. Topics of coverage include Parabolas, Ellipses, and Sequences. Employing a "flipped classroom" teaching approach, the instructor will review the lecture material and discuss its practical relevance for the first 30 minutes, then proceed to engage the students while they solve many sets of practice problems for the remaining time in the class. **Students must have a B or better in Mathematics to apply.**

CALCULUS I FOR ENGINEERS & SCIENTISTS - 22035

Oakland University

This rigorous course is for the high achieving student who has demonstrated success in Trigonometry and Algebra II. Topics of coverage include Limits and Continuity, Derivatives and Optimization, and Fundamental Theorems of Calculus. Employing a "flipped classroom" teaching approach, the instructor will review the lecture material and discuss its practical relevance then proceed to engage the students while they solve many sets of practice problems for the remaining time in the class. **Students must have a B or better in Mathematics to apply.**

ACT & SAT MATH PREP - 21520

University of Michigan Dearborn

Students will learn fundamental mathematics needed to successfully execute math portion of ACT and SAT tests. Students will learn, analyze and practice basic mathematics and problems related to tests. This class is suited for students who are preparing to take ACT or SAT tests over the next six to 18 months.

CHEMISTRY (PART II) FOR ENGINEERS AND SCIENTISTS - 22070

Oakland University

This introductory-level course is for the serious student who has demonstrated success in Physical Science, Biology, Chemistry (Part 1) here at OU. Employing a "problem-based classroom" teaching approach, the instructor will review the lecture material and discuss its practical relevance for the first 30 minutes, then proceed to engage the students while they solve many sets of practice problems for the remaining time in the class. The course is administered over five Saturdays from 9 AM to 12 PM on the campus of Oakland University. Student success will be heavily dependent upon their commitment to excellence while in class and their ability to view a 30 minute video (from home, school or library) during the week prior to the Saturday class. The admissions process, which is highly selective, involves consideration of math GPA and teacher recommendations. Chemistry at an introductory level is covered.

DIGITAL CHARACTER DESIGN - 20600

Triumph Church

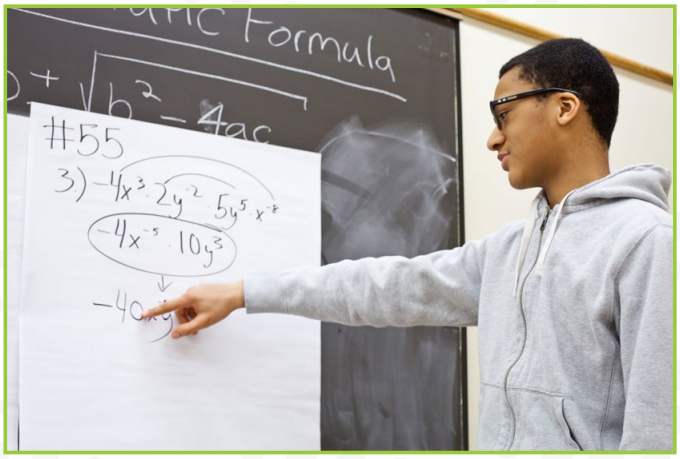
Digital Character Designer: From Novice to Pro! is an exploratory experience for high school students which exposes them to various aspects of designing digital characters. Even though 6 weeks is not enough contact hours to allow the student to become a pro, this course is designed to show students the path necessary in becoming a novice of character digital designs to a PRO!

LIGHT UP DETROIT WITH LEDs! - 29005

Walker Miller Energy

Learn all about Light Emitting Diodes and how its transforming cities like Detroit and many others as we embarked on a journey in learning about advanced lighting technologies and associated career paths.

GEAR UP With DAPCEP



APPLY NOW - 12/26 thru 1/30

www.dapcep.org/apply/applyforgearup