

Summer 2017

Marquette Engineering Outreach is excited to offer another season of programs for students interested in learning about ENGINEERING! The Office of Engineering Enrollment Management and Outreach seeks to enhance the mission of Marquette University and the Opus College of Engineering by developing and preparing future Marquette engineers to be critical thinkers, problem solvers and leaders that will contribute to a global society.

To register for a Marquette Engineering Outreach Program, please visit:
http://www.marquette.edu/engineering/academies_register.shtml

Engineering Academy registrations are accepted on a first-come, first-served basis.

Waiting lists are started once a class reaches capacity. Instructions for submitting payment are provided on the registration site. Some financial assistance is available for families with demonstrated need. For more details about our programs, including current course availability visit www.marquette.edu/engineering/academies.shtml

WE-GIRLS: Women in Electrical Engineering
Monday, June 19 – Thursday, June 22

Entering Grades 6-8
9 a.m. – 1 p.m.

\$125
Class Capacity: 12

Are you curious about electrical and computer engineering? Electrical engineers work with electricity, design, operate, and maintain a wide variety of electronics and electrical systems. Computer engineers build computers and program them to do many things. In this program, girls will learn about microcontrollers and how to program them to do cool things like light up lights and create sounds. Other activities include class discussions, meet students in the Electrical and Computer Engineering Department, listen to various speakers and tour Marquette's state-of-the-art electrical engineering labs. Visit this site for more information:

http://dejazz.com/nsf1/summer_camps.html

Instructor: Dr. Cristinel Ababei, Assistant Professor of Electrical and Computer Engineering, Marquette University

Advanced LEGO MINDSTORMS EV3 Robotics
Monday, June 19 – Thursday, June 22

Entering Grades 8-10
8:30 – 11:30 a.m.

\$200
Class Capacity: 18

This class is for students with prior experience with LEGO MINDSTORMS EV3. Take your robotics skills to the next level, in this interactive, challenging program. Topics will include advanced EV3 programming, including use of variables with sensors, creation and use of "My Blocks", communicating to the EV3 via Bluetooth, and planning and executing efficient code.

Instructor: Ms. Karen Matthews, M.S. Ed., Engineering Outreach Instructor



Adventures in Coding

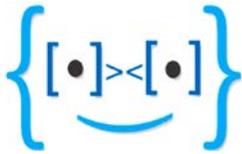
Monday, July 10 – Thursday, July 13

Entering Grades 6-8

8:30 – 11:30 a.m.

\$200

Class Capacity: 18



Software engineers design the instructions which run machines everywhere! In this class, students will use a variety of online and free resources to plan, test, and execute software programs using desktop PCs. Students will explore effective software design, learn about Object Oriented Programming (OOP), and become junior software engineers – all while having lots of fun. This class is for students without previous coding experience, and may not be repeated.

Instructor: Ms. Karen Matthews, M.S. Ed., Engineering Outreach Instructor

Intro to Biomedical Engineering

Monday, July 17– Friday July 21

Entering Grades 8-10

9 a.m. – 12:30 p.m.

\$350

Class Capacity: 20



This course is intended for students interested in learning about general engineering principles and how they apply to human physiology in a fun, hands-on environment. Students will learn by creating a medical device from scratch. Specifically, students will make an electrocardiogram (ECG). Working in the state-of-the-art biomedical laboratories, students will learn about human physiology, program a touchscreen raspberry pi computer, will learn to read and interpret the electrical activity of the heart. This course is moderately rigorous, emphasizing learning in a fun atmosphere. At the end of the course students will get to keep all their materials. Students will be instructed on other Raspberry Pi projects to continue their research at home.

Instructor: Dr. Sam Bechara, Assistant Chair, and Lecturer, Biomedical Engineering, Marquette University

Water, water, everywhere

Monday, July 31 – Thursday, August 3

Entering Grades 9-12

9 a.m. – Noon

\$40

Class Capacity: 20

All biological organisms require water for survival, but we tend to take it for granted. Should we be worried? In truth, there is a lot of water on earth: enough to cover about 75% of the earth's surface! So what's the big deal? One big issue is the availability of that water and its suitability for drinking. Only about 2.5% of earth's water is freshwater, and the majority of that fraction is locked up in the form of ice and snow, which leaves a very small amount of water that is available and suitable for human consumption. Environmental engineers work to ensure that we have enough water to meet our needs and that it is safe for drinking and recreation. Water, water, everywhere introduces students to environmental engineering, issues of water quantity and quality, on-site tours of water industry, and hands-on laboratory experiments. This program is offered in partnership with PentAir.

Instructor: Dr. Brooke Mayer, Assistant Professor, Civil, Construction and Environmental Engineering, Marquette University

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Marquette Engineering Outreach

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