



## 2021 SUMMER STEM EXPLORATIONS

**Camp Plans and Registration:** Summer camps are currently planned following campus COVID-19 Safety guidelines for small group meetings. Camp participation will be reduced to accommodate social distancing and no sharing of equipment. Register for camps by going to this Continuing Education link:

**Camp Registration and Scholarships:** For access to a scholarship application for those needing financial assistance, a link to the scholarship application is located on the Purdue Fort Wayne College of Engineering, Technology, and Computer Science (ETCS) Outreach STEM Exploration page: <https://www.pfw.edu/departments/etcs/outreach/home/explorations.html>

*\*Grade listed below is for a student in fall 2021*

### **Engineering and Computer Science Robotics Exploration: Swarm Bots!**

Offered by: College of Engineering, Technology, and Computer Science

Dates: June 14-18, 2021    Time: 8:30 AM - 12:30 PM    Age: 8<sup>th</sup> -12<sup>th</sup> grade    Max: 10 students    Fee: \$90

Participants collaborate on robot teams to explore the strategy of "swarm bots" where multiple robots work in coordination to achieve a goal. Participant teams will use both an autonomous robot with a remote control robot to achieve this year's Swarmbots challenge. Robot platforms include LEGO Mindstorms EV3 robot and the Pitsco TETRIX robot similar to VEX but not the same). Teams strategize on construction, programming, attachments, and robot manipulation in preparation for Friday's mini-challenge. Participants also learn about engineering majors. The camp welcomes participants with a range of robot experience. Guided by a mechanical engineer and a software engineer, the instructors encourage hands on exploration of new skills as they share from their own work experience.

### **Engineering Robotics Exploration: Vision Bots**

Offered by: College of Engineering, Technology, and Computer Science

Dates: June 21-25, 2021    Time: 8:30 AM - 12:30 PM    Age: 8<sup>th</sup> -12<sup>th</sup> grade    Max: 5 students    Fee: \$90

This Exploration requires some prior experience in any of the following: attended the Swarmbots or other robot camp, has built some type of robot, and has experienced some level of programming in C++ or Python. In this Exploration, you will explore machine vision; a vital part of today's newest smart vehicles. Using the Prizm robot controller, students will experiment with using a Pixy2cam to accomplish tasks. As in all robotic camps, a challenge is posed to the Exploring students who compete at the end of the week.

### **Industrial Technology Exploration: MTE Experts (Machining Tools in Engineering)**

Offered by: the School of Polytechnic and Mechanical Engineering Technicians, sponsored by HAAS

Dates: June 21-25, 2021    Time: 8:30 AM - 12:30 PM    Age: 9<sup>th</sup> -12<sup>th</sup> grade    Max: 6 students    Fee: \$90

Explore the world of machining tools through hands-on applications in the creation of a basic project. Learn layout and measuring strategies. Operate a metal lathe and a milling machine and in a short time, watch your materials transform from unassembled pieces into a useful item. Become familiar with CNC machining and programming through demonstrations of HAAS machines. During the camp, participants will chat each day with professionals from local industry who visit the machine shop to share their work experience in industrial field and answer questions about careers. This hands-on workshop guided by experts provides access and training on tools that you may not normally use. It is a small class; register soon and let the chips fly!

### **Computer Science Exploration: ACT: Adventures in Computing for Teens**

Offered by: Department of Computer Science

Dates: July 12-16, 2021    Time: 8:30 AM - 12:30 PM    Age: 8<sup>th</sup> -12<sup>th</sup> grade    Max: 10 students    Fee: \$90

Explore the world of computer science through a week-long project that challenges your computer science know-how. This camp will focus on providing an overview of different areas of computer science with several faculty members. You will experience the computer science design process; learn computer strategies, and exercise creative skills as you work on your project and meet other students with similar interests. You will watch demonstrations in the virtual animation lab and learn about computer science careers.

**For questions please contact: [dostal@pfw.edu](mailto:dostal@pfw.edu)**