PORPOISE Robotics

STEM Education Program
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Fact Sheet

PORPOISE ROBOTICS

Precision Oceanographic Robotics On and In the Sea Environment

"TRAIN-THE-TRAINER" TWO DAY COURSE (16 HOURS)
MONDAY/TUESDAY JULY 28-29, 2014. NORTH SAN DIEGO, CA
WEDNESDAY/THURSDAY JULY 30-31, 2014. SOUTH SAN DIEGO, CA

Most STEM Teachers are well versed in Math, Science, Technology and teaching methodology, but often lack engineering experience, according to PORPOISE ROBOTICS Vice President of Education and Technology, Kevin Bowen. Many teachers say: "I'm not an engineer, and I don't understand computer programming, electronic circuits or mechatronics". PORPOISE ROBOTICS is designed to bridge that gap, providing a curriculum for daily and after-school robotics programs for middle, high school and community college teachers.

PORPOISE ROBOTICS "Train-the-Trainer" is a 2-day intensive course that immerses the teacher/trainer in robotics and includes hands-on design, building and programming. This introduction to Mechatronics covers basic robotics principals including the Arduino microprocessor, C++ coding, sensors and effectors.

The Train-the-Trainer course to cover essential information over a two day period for a course fee of $150 and a material fee of $100 which includes the Land Shark Kit including Arduino computer which the participant will keep. Motion Picture Marine, who has been one of our PORPOISE sponsors from the beginning, has generously donated scholarships so that registrants will be able to waive the course fee, **only requiring the $100 material fee.**

Day 1: Participants learn Ohm's Law, series and parallel circuits, voltage, resistance and current measurement using multi-meters. Hands-on training includes building circuits using breadboards and components such as ultrasonic sensors, effectors and motors. They learn the Arduino "Integrated Development Environment" and download, modify and utilize C++ programs.

Day 2: Participants build, program and test the *Land Shark* autonomous ground vehicle kit. The course goal is to develop an understanding and comfort level for teachers to teach PORPOISE ROBOTICS, mechatronics, or better oversee robotic competition teams common in grades 7-12. Participants overview Systems Engineering principles that are the building blocks of mechatronic design and critical for classroom engineering or competing in robotic competitions.

Kevin Bowen, a former Senior Engineering Fellow with over 30 years leading manned and unmanned submersible and surface vehicle teams at Sperry and Raytheon, is the course instructor. PORPOISE Creative Director David Grober, a winner of both an Emmy and the esteemed Academy Award for Technical Achievement in film production, and a co-creator of PORPOISE ROBOTICS with Kevin Bowen, will also teach.

Who Should Take this Class:

- Any teacher or administrator interested in initiating or teaching PORPOISE Robotics as a daily class or after-school program starting September 2014.
- Career Technical Education and Regional Occupational Programs (CTE/ROP) engineering and robotics instructors.
- Any DOD, engineering or Reservist interested in teaching or assisting a PORPOISE class through public service. We can help place you with an existing PORPOISE class.
- Any STEM robotics competition team leader (FIRST, VEX, LEGO) or volunteer wishing to significantly increase their ability to lead a STEM robotics competition team with increased skills in Mechatronics and Systems Engineering.

ABOUT US: PORPOISE ROBOTICS, started in 2012, has gone from a Congressionally-funded after school robotics program, to a daily one hour science elective class in the Los Angeles Unified School District, and is currently being vetted for University of California G level class accreditation. PORPOISE also completed its first after-school club program at San Diego's Rancho Minerva Middle School for 6th-8th grade students, where they built and coded the Land Shark autonomous ground vehicle.

PLEASE RESPOND BY FRIDAY JULY 18.

Include your name, e-mail, phone number, organization or school where you teach and the grade level. Please indicate your preferred location and we will try to accommodate you.

For further details and to register for the Train-the-Trainer, please contact:

Kevin Bowen, at kbowen6@icloud.com or call (858) 997-4792 or
David Grober at davidgrober1@gmail.com or call (310) 951-1110.