EPICS at ASU: Be An Engineer Now, Change The World!

Fall Semester 2010

Leading engineering discovery and innovative education for global impact on quality of life.
What is EPICS?

Founded at Purdue in 1995, "EPICS" stands for Engineering Projects In Community Service. In the program, teams of multi-disciplinary students with varying interests and strengths work on projects in a series of service learning classes (EPICS I, II, and III) that solve engineering and technology-based problems with not-for-profit community agencies, schools, and government units. This partnership provides many benefits to the students and the community alike. EPICS at ASU is entering its second year in the fall 2010 semester.
**EPICS at ASU is GOLD!**

**GOLD** gives EPICS some Sun Devil Spirit as we send our student teams out into the world. The work of each EPICS team will be:

- **G**reen and Sustainable
- **O**riginal and Creative
- Promote **L**eadership Development and Teamwork, and
- Be based on **D**esign and Engineering Fundamentals.
Why EPICS?

“I believe the knowledge I gain from EPICS cannot be met in any other class here on campus. I am working on problems within the community while gaining experience that I can carry with me after college.”
Gabrielle Palermo, Bioengineering

“EPICS bring engineering out of academia and into the light of day! It’s fun, and this class has reinforced my decision to go into mechanical engineering.”
Alan Gillespie, Mechanical Engineering

“EPICS has been great for me and I highly recommend the class to students who wants an eye-opening experience!”
Michael Chou, Mechanical Engineering

“EPICS has taught me about professionalism and communication. Now I am confident in my ability to give presentations and communicate with other engineering students and faculty.”
Taylor Barker, Chemical Engineering

“EPICS has been a very positive experience for me, and I have learned a lot from the class. I plan on continuing with our group’s project until I graduate, including working on it for my capstone.”
Jasmine Nejad, Bioengineering
The EPICS University Network

- Arizona State University
- Purdue University
- Columbia University
- Dartmouth College
- Princeton University
- Georgia Institute of Technology
- University of Virginia
- University of California, San Diego
- University of Wisconsin, Madison
- Worcester Polytechnic Institute
- Drexel University
- University of Auckland
- The Pennsylvania State University
- University of Notre Dame
- University of Puerto Rico, Mayaguez
- And more...

Ira A. Fulton
Schools of Engineering
Arizona State University
Future Rollout Planned

EPICS Sun Devil Spirit Program
ASU Faculty and Staff Volunteers

EPICS Maroon Club
ASU Student Volunteers

EPICS GOLD Service Learning Classes
ASU Students

EPICS High School Program
Arizona High School Students

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Attributes of EPICS GOLD Projects

Using the service-learning model, project assignments for the EPICS GOLD sequence of classes can be characterized as follows:

• **EPICS GOLD I – Feasibility and planning.** One credit.
• **EPICS GOLD II – Design and build.** One credit.
• **EPICS GOLD III – Senior Design capstone.** One credit.

*This class is taken in addition to the regular senior capstone design course, not in place of it.*

Projects are intended to be at least one year in length, meaning that ongoing student participation in EPICS GOLD classes – even for four years – is encouraged. EPICS GOLD projects are performed without charge for not-for-profit host organizations such as a community organization, school, or government entity. Student teams are multi-disciplinary, comprised of a mix of freshmen through seniors.
Current EPICS Teams: International

**Bangla–EPICS Water Team**

**Bangla–EPICS Solar Team**
Rahima Hoque Chetonabikash Girls College, Bangladesh,
Located in the remote village of Baherchar Barakanda,
this new girl’s school needs reliable power, clean drinking water, and bathrooms with a septic system.

**Bridges to Prosperity Team**
Working with the B2P student club, help design, build, and construct a suspended bridge in Guatemala.
The club created a legacy of success with the successful completion of a bridge in Honduras this past spring.

**Doc-In-A-Box Team**

**Malawi Empowerment Village Team**
Using 40’ shipping containers, conceptualize, design, build and a group of medical clinics and facilities and supply them with the power and water needed to operate them.

**Faculty mentors:**

- Edward Kavazanjian
- Subby Dharmarajan
- Vin Pizziconi, Jan Snyder
Current EPICS Teams: National

**eBird (Partnering with Cornell University and the National Audubon Society)**
A real-time, online checklist program, eBird has revolutionized the way that the birding community reports and accesses information about birds. The EPICS team is developing the eBird Hotspot wiki. In its most simple form, it would bring in real-time data from sightings entered into eBird and display them in a variety of ways.

**Recycled Rides (Partnering With NABC)**
**Chassis Team, Engine Team**
The EPICS team will create an online database that can be used to manage a national program that rebuilds totaled cars with donated labor and parts which are then donated to working poor families, working with 150 not-for-profits across the country.
Current EPICS Teams: Local

**Green Girl Gamers Team**
This all-female team will conceptualize and design a game to get girls and young women outside and active. Using a Nintendo Dsi or Google Android phone platform, the game will allow players to interact with nature as they play the game. This team will work in partnership with Xavier High School.

**Rio Salado Habitat (Partnering With the City of Phoenix)**
Tackle a variety of assignments related to environmental issues in the restored Salt River Basin south of downtown Phoenix. These include drainage catchment designs, old landfill monitoring, and water quality testing.

**Faculty mentor:** Deidre Meldrum

**Faculty mentor:** Brooke Mayer
Major Outcomes for EPICS Students

- Learn to work on a team that tackles a real-world problem and effectively deal with team-related issues that arise.
- Prepare and/or update a ‘Personal Portfolio’ that documents their accomplishments. It includes personal goals, self-reflection and a personal plan of action.
- With their team, prepare and submit a proposal for funding from the ASU ‘Innovation Challenges’ competition.
- Present their ideas using public speaking skills during mid-term and final presentations.
- Teams manage a budget to build models or solutions that demonstrate proof of concept.
Why EPICS Makes Sense For You

• You can be an engineer NOW!
• It’s a great way to gain practical leadership experience while you learn.
• Develop your communication skills – writing, speaking, graphic design – that help you sell your ideas to others.
• Learn to budget and spend REAL MONEY!
• Get valuable teaming skills and experience, and…

If you are really good, win awards that light up your resume!

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Do You Have A Passion For Making a Difference?

“EPICS is a great way to get plugged in at ASU. As engineering students, it’s easy to get caught up in our studies. But really, the college experience is so much more than that. EPICS allows you to join with other students who have the same passion for making a difference. It’s also a great way to learn how to apply what you are learning in the classroom and apply it to real world problems. The lessons learned and connections made in EPICS can greatly benefit students as they move forward.”

Billy Walters, Mechanical Engineering
It’s Easy to Get Involved in EPICS...

• Sign up for an EPICS GOLD I class now! Taking EPICS GOLD II is possible with permission.
• Join the EPICS Maroon Club when classes begin.

Questions? Contact Richard Filley (filley@asu.edu) Phone: 480-277-0834. Office: ECG 124.