

Invitation: Introduction to Engineering Design Teaching Institute

The DYF Teacher Institute presents an engineering problem solving framework that can be used to teach science and mathematics in a rich, problem based learning context. Institute participants experience the design process, reflect on that experience and then plan how to integrate the design process into their teaching. **This institute is for two audiences:** The first audience is secondary math and science teachers who want to provide more real world context for learning. The second audience is high school math and science teachers interested in offering an Introduction to Design course at their school in partnership with Humboldt State University. High school students receive college credit for the Humboldt State University course ENGR 215: Introduction to Design, while taking the course at their high school. Part of the course would be offered online with HSU faculty.

Making a DYference - DYF Institute Goals and Objectives

- Provide opportunities to experience the engineering design process first hand; teacher teams will complete a hands-on engineering design project at the institute.
- Provide opportunities for reflection and curriculum planning during the institute. Participants will leave with tangible products to use during the school year.
- Develop awareness of existing engineering secondary school curriculum, K-12 engineering education research (see www.teachengineering.com).
- Develop a community of teachers interested in pursuing engineering approaches to teaching math and science.
- Identify teaching partners for teaching ENGR 215 Introduction to Design to high school students for 3 units of college credit in Spring 2009 or later. High school students will take ENGR 215 at their high school campus. Instruction would be available online from Humboldt State. Teacher partners will facilitate student projects and assignments.

Benefits for DYF Institute Participants

In addition, to the benefits described above, Institute participants will receive:

- Resource materials to support the work as well as academic year consulting.
- A \$875 Teaching Fellowship: \$625 for the summer institute, \$250 for two follow-up days in AY 08-09.
- Course credit options.
- Opportunity to team-teach a university course for university credit at institute participant's high school.

Commitment from DYF Institute Participants

- Attend the 5 days of DYF Institute: July 14th-18th
- Attend two follow up sessions (during academic year 08-09 two days release, dates TBA)
- Integrate elements of the engineering design approach during regular content instruction.
- Work with the DYF Research and Evaluation Team to facilitate our understanding of what works.

Application Process

- **Who may apply?** Secondary science & mathematics teachers
- **When?** Applications are due by May 30, 2008. Additional seats based on space available.

Questions or Comments?

- **Beth Eschenbach**, Environmental Resources Engineering Chair, Humboldt State University, 707-826-4348, Beth.Eschenbach@humboldt.edu
- **Lonny Grafman** Environmental Resources Engineering Lecturer, Humboldt State University, 707-826-3649, lonny@humboldt.edu
- **Forrest Stamper**, Math and Science Instructor, Hoopa High School, 530-625-5600, fdlns@aol.com
- **Jeffrey White**, Redwood Science Project Director, Humboldt State University 707-826-5551, jww12@humboldt.edu
- **Julie Van Sickle**, Redwood Science Co-Director, Humboldt State University, 707-826-5552, jav16@humboldt.edu

Or visit the DYF website at www.humboldt.edu/~dyf

Environmental Resources Engineering

http://www.humboldt.edu/~ere_dept – (707) 826-4348

Redwood Science Project

<http://www.humboldt.edu/~rsp> – (707) 826-5552

Humboldt State University · Arcata California 95521