

**Syllabus
Bioengineering 5020 3 Credits
Interactive Science Projects**

Offered every semester

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Schedule and Office Hours: by arrangement

Description:

An independent project course involving the design, development, implementation, and testing of bioengineering-based interactive science/technology exhibits/activities for science centers or museums. Students may work individually or in groups.

Readings from Instructor, including:

*Anonymous, Exhibit Design Handouts (3 pp.)

*Exploratorium Cookbook chapters

Oppenheimer Working Prototypes: Exhibit Design, F. Oppenheimer, et al.,
The Exploratorium, 1986, 29 pp (not on E Reserve, but copy is in Lab)

*Vogel S Life's Devices, Princeton, 367 pp.

Chapter 9, pp. 177-200; Materials

Chapter 15, pp. 298-315; Energy

Zinsser W On Writing Well, Quill Publ., 2001
pp. 1-17; 148-165; 286-294.

Grading and Evaluation:

Project Discussion and Selection

Background and Completeness

Resourcefulness and Schedule

Design

Prototype

Testing and Assessment

Final Design and Report

Project:

Each student is to design, prototype, and test an interactive, hands-on, experiential science/technology 'exhibit'/experience related to topics and subjects normally considered to fall within Bioengineering.

There are 4 major check-offs during the course:

Check-off 1 focusing on what you WANT to do and how you will get the information needed.

Check-off 2 focusing on what you WILL do, including a time/task list, budget, experts, resources, etc.

Check-off 3 focuses on what you CAN do and commit to do;

Check-off 4 (final one) will deal with what you DID do and on what more needs to be done.

Project Components and issues include:

Educational Goals

Space/Location/Requirements

Clustering/Connections

Hierarchy

Safety

FDA/Handicapped Issues
Design
Signage/Instructions/Artwork
Construction/Fabrication
Testing/Evaluation
Maintenance/Documentation
Web Site
Funding/Sources

Project Report: Format/Guidelines (20 pp max)

Title Page: name, project title; project subtitle;
Contents.
Abstract/Summary
Background
Objectives and Description
Exhibit plan, flow, and design, including equipment, materials, sources, costs
Exhibit fabrication/construction
Implementation
Exhibit operation and maintenance
Testing and assessment
Conclusions and recommendations: to the finished product—from prototype to real exhibit
Sources and references

Part of the grade will reflect the ability of the exhibit to be easily set up and easily torn down and stored.

Project Reports are to be turned in as hard copy AND via electronic media

After the course, return all borrowed items to their owners. The instructor will inform you as to what components of your exhibits are to be saved for future development for the Utah Science Center—and which can be removed and recycled.

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