



Design EPICS 151 Number: EPIC151

Section U

Fall 2016

Instructor or Coordinator: John Kuosman

Contact information: jkuosman@mwr.dst.co.us

Office hours: Thursdays

Class meeting days/times: 5 – 6 pm in Annex

Class meeting location: as above

I am an adjunct professor which means that I am not full time faculty. In my case I have a full-time job beyond teaching this class. As a result, students need to plan for up to a 48 hour response to queries and prescheduled meetings and office hours are the best ways to guarantee connecting with me. I will make every attempt to provide you a prompt response, but planning ahead and repeatedly looking ahead to key milestones in the class will help in avoiding last minute emergencies. A failure to plan by one person does not constitute an emergency for others. Please use my work email as the primary way to contact me: jkuosman@mwr.dst.co.us

Instructional activity: 5 hours lecture/lab hours lab 3 semester hours

Course designation: X Common Core Distributed Science or Engineering
 Major requirement Elective Other (please describe _____)

Course description: Design EPICS prepares students for their upper-division courses and ultimately their careers by developing some of the key skills of the professional technical problem-solver: the ability to solve complex, open-ended problems, the ability to work in teams, the ability to generate then select a good solution from competing alternatives, and the ability to communicate effectively. Effective communication includes both outgoing skills such as writing, speaking, and presenting; and incoming skills such as listening, observing, and user empathy.

Problem-solving skills are developed through a semester-long open-ended design problem, which the students solve in teams. Instruction in these subjects is hands-on and experimental, with the instructor serving as both mentor and lecturer.

Textbook and/or other requirement materials:

Required material: Bound log book: blank or lined, 100+ pages, 8 ½ X 11". In lieu of text books, students are expected to pay for materials needed for their prototypes.

Optional but useful text: Beer, David and David McMurrey, *A Guide to Writing as an Engineer* (referred to as GWE), 2nd, 3rd or 4th Ed., John Wiley and Sons, Inc., Hoboken, NJ, 2013.

Student learning outcomes: At the conclusion of the class, students will have the ability to...

- 1) Identify, breakdown, and define open-ended problem(s).
- 2) Research the context and background of problems and solutions, including user needs and technical requirements, through scholarly and authoritative sources, and stakeholder input.
- 3) Design solutions through cycle of testing, refining, iterating, and feedback.
- 4) Equitably contribute to team efforts from start to end on a collaborative project, and participate in learning activities and coaching activities in the team.

- 5) Apply common workplace practices, tools and software in a semester long team project, including: project planning tools, team management tools, tools to generate solution alternatives, decision analysis methods, risk analysis methods, and value proposition analysis / baseline comparison.
- 6) Present technical ideas and solutions graphically, orally, written, and through prototype demonstrations.
- 7) Visually depict ideas to teammates, supervisors, and stakeholders through the use of field sketching for the purposes of communication as well as idea development and development through iteration.
- 8) Model and communicate formalized design ideas through the use of standardized engineering graphics conventions as applied to engineering sketching and computer-aided design/solid modeling software

For lesson-level learning outcomes and the “EPICS map,” see attachment to introductory email.

EPICS.Mines.edu: Posted on our program website will be updated shop hours, information on the project and subject matter experts, and other relevant course material.

Course Schedule: Draft attached to this email. This document is still be refined and will be presented each day in class and will be finalized on BlackBoard after Labor Day.

Grading Procedures: See distributed assignments schedule.

Grading scale: A = 93.0-100; A- = 90.0-92.99; B+ = 87.0-89.99; B = 83.0-86.99; B- = 80.0-82.99; C+ = 77.0-79.99; C = 73.0-76.99; C- = 70.0-72.99; D+ = 67.0-69.99; D = 63.0-66.99; D- = 60.0-62.99; F 0.0-59.99. **This scale will be strictly observed. Please do not expect any rounding up.**

Participation, commitment and respect for the learning process: We highly value the following:

- **Engagement:** Are you legitimately interested in class activities or are you falling asleep or TEXTING, or chatting with your neighbor? Are you seriously engaging with the material, projects, and questions as demonstrated by your comments and the material in your Design Log? Are you sharing or demonstrating ways to directly apply what your past experiences to what you are learning? Are you sharing or demonstrating ways that you have directly applied what you are learning?
- **Relevance:** How relevant and constructive are your contributions to the learning environment?
- **Respect:** Are you respectful of others’ perspectives and are you succinct in your comments?

Absence Policy (e.g., Sports/Activities Policy): Please refer to the Undergraduate Bulletin: <http://bulletin.mines.edu/undergraduate/undergraduateinformation/academicregulations/>

Policy on academic integrity/misconduct:

Academic misconduct is the intentional act of fraud, in which an individual seeks to claim credit for the work and efforts of another without authorization, or uses unauthorized materials or fabricated information in any academic exercise. Student Academic Misconduct arises when a student violates the principle of academic integrity. Such behavior erodes mutual trust, distorts the fair evaluation of academic achievements, violates the ethical code of behavior upon which education and scholarship rest, and undermines the credibility of the university. Because of the serious institutional and individual ramifications, student misconduct arising from violations of academic integrity is not tolerated at Mines. If a student is found to have engaged in such misconduct sanctions such as change of a grade, loss of institutional privileges, or academic suspension or dismissal may be imposed.

The complete policy is [online: www.inside.mines.edu](http://www.inside.mines.edu)

Center for Academic Support and Advising (CASA) Support:

Tutoring- free service for all undergraduate Colorado School of Mines students.	http://casa.mines.edu/CASAtutoring
Core Supplemental Instruction Workshops- one-hour long sessions led by student facilitator.	http://casa.mines.edu/CASAworkshops
Academic Coaching- staff assists students with, <i>test-preparation techniques, test-taking skills, study guide development, key concept identification, test-anxiety, memorization techniques, note-taking rules, etc.</i>	http://casa.mines.edu/CASAcaching

Academic Support Workshops- “Lunch and Learn”
Workshops, Pre-Finals Workshop, Faculty Fireside Chat
and more.

<http://casa.mines.edu/CASAtips>