Communication Without Borders: Collaborative Expression Within and Across Disciplines

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Course Description

Senior design capstone courses
- Chemical Engineering
- Computer Science
- Food Science
- Materials Science
- Economics

Multidisciplinary design projects, some with industrial sponsors

Teaming, Writing, and Speaking (TWS) instruction
- Module format (2001)
- Consultation format (2002)
• Objectively self-examine and enhance their individual and team work processes in a multidisciplinary context

• Practice and improve project management and documentation by providing written and oral progress reports to faculty, sponsors, and peers

• Develop critical thinking and reasoning skills by responding to questions in an oral presentation

• Communicate effectively in preparation for obtaining and maintaining productive employment
Module Format

Description

• Prearranged, regular meeting times and places (generally weekly for 1-2 hrs)

• Structured TWS instruction and activities

• Weekly, written reflection assignments

• Module counts toward student’s course grade
Designated TWS Topics

- Teaming across disciplines
- Clarifying teams roles and ground rules
- Maximizing team productivity and cohesiveness
- Collaborative writing and editing
- Exploring disciplinary conventions
- Interpreting varied feedback from others
- Presenting in multidisciplinary teams
- Managing audience questions
- Critiquing last spring’s final presentations
- Dress rehearsing the final oral presentation
Module Advantages

• Greater attention to process, redressing a departmental imbalance

• More required contact time between teams and facilitator

• Greater depth and variety of TWS topics

• Higher student accountability for performing activities and assignments
Module Disadvantages

- Possible resentment from students concerned about **added workload**
- May be difficult for students to transfer concepts/skills/activities from **module to coursework**
- Can be **time intensive** if coupled with out-of-class consultations
- May **lack instructional flexibility**
Consultation Format

Description

- Flexible meeting times and places
- “Just in time” discussions of TWS topics based on needs of each team
- May be voluntary for some/all teams
- May count as extra credit toward course grade
Student-Selected Consultation Topics

- Collaborative writing techniques
- Editing levels and strategies
- Interpreting varied feedback
- Dress rehearsing the final oral presentation
- Presenting in multidisciplinary teams
- Managing audience questions
- Self and peer critiquing of oral reports
Consultation Advantages

- Able to take advantage of "teachable moments" with impromptu discussions, mini-lectures, and prepared handouts

- Highly flexible and responsive to students' perceived needs and coursework/deliverables

- Often student-initiated
Consultation Disadvantages

- Potentially **insufficient contact time** between teams and consultant
- May be **too responsive** to students' *perceived* needs
- Can be **time intensive** with regard to scheduling
- May provide **little to no formal instruction** on TWS concepts, skills, and/or processes
- Usually necessitates an **elaborate "tracking" system** for the consultant
Recommendations

• Create **one-two hour, one-two credit modules**

• Attach modules to **existing ChE courses** as TWS labs or problem sessions

• Require periodic **team consultations** in conjunction with modules

• Utilize campus resources when **selecting consultants**
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