

## A WRITING COURSE WITH AN ENGINEERING PROJECT

Previously the two-term capstone course sequence assigned to students **11 written papers, 2 slide decks (for two oral presentations), and a poster**

- Background Research paper: project scope and literature review.
- Preliminary Proposal paper: Designs considered
- Final Proposal paper: Design selected
- Team Charter paper: Team roles, responsibilities, and conflict resolution methods
- Capstone Communication Inventory paper: Student writing proficiency goals for the course
- Mid-Course Goals review paper: Perceived progress made in meeting the proficiency goals set previously
- Executive Summary Draft paper: Draft of executive summary which will appear in the Final Report
- Capstone Experience Memo paper: Reflection of the student's capstone project experience.
- Final Report paper: Description of entire project
- Peer Evaluation of Team Performance, Term 1 paper: Student's perception of the contributions of his team in the first term of the course.
- Peer Evaluation of Team Performance, Term 2 paper: Student's perception of the contributions of his team in the second term of the course.
- Slide Deck Term 1 Presentation
- Slide Deck Term 2 Presentation
- Design Exposition poster

### The Authors:

**Sharon LeRoux**  
Capstone Instructor

**John Parmigiani**  
Capstone Coordinator  
Research Associate Professor  
Director of Industry Research

# THE UNINTENDED CONSEQUENCES OF CAPSTONE AS A WRITING INTENSIVE COURSE

Capstone students struggled to achieve technical excellence under the burden of content added to achieve writing excellence



## THE UNINTENDED CONSEQUENCES

The goal was to achieve excellence in all aspects of capstone. The pursuit of writing excellence was achieved with the OSU Baccalaureate Core Committee rating the writing content as exemplary stating *"... we are deeply impressed with the effort you have expended designing and implementing this course; you are a model for the College of Engineering and OSU"* However the superbly thorough writing content led to three primary unintended consequences.

### Skewed Resource Allocation

- The grading of writing was a major duty of two course instructors, two graduate teaching assistants, and the Communication Curriculum Director consuming the equivalent of approximately three fulltime people.
- Technical instruction was compromised

### Excessive Report Length

- Writing excellence was translated to not simply meeting criteria but in significantly exceeding them.
- Reports required to be 2,000 words became 50,000.
- Time spent on technical content decreased.

### Design Changes

- Most significant was the impact on design changes.
- Due to the required multiple revision cycles of the reports, design changes required editing papers
- However students would not pursue an obviously beneficial change to their selected design due to such a change necessitating modification to their written reports.
- **Students would knowingly produce an inferior design solution rather than implement an improvement which necessitated updating the associated reports.**

## WHAT IS AN OSU WRITING INTENSIVE COURSE?

- An existing course in a student's major field
- Writing content (instruction and assignments) added to teach students to write in their field
- Minimum of 5,000 written words of which 2,000 are in polished papers revised from feedback.

## HOW DID WE BRING THE ENGINEERING BACK?

- Accepted as our goal simply meeting or slightly exceeding Writing Intensive Course requirements rather than greatly exceeding them.
- Modified course lectures, instructional staffing, and assignments to focus on engineering excellence as the primary purpose of the course



**Oregon State  
University**

**Capstone Design  
CONFERENCE 2018**

JUNE 4-6, 2018 ▶ ROCHESTER, NY