What Makes Good Teaching?
Creating Instructional Standards for First-Year Calculus at WPI
Troy Bergeron (AE ‘19), Walter Kwiecinski (AE ‘19), Olivia Leavitt (BME ‘19), Sola Shirai (CS ‘19)
Advisors: Professor Paul Kirby, Dr. Robert Traver, Nicolas Gomez Enriquez Riart (PLA)
GPS: Ignorance is NOT Bliss

Background
• A strong foundation in calculus is important for engineering students
• How to define “good teaching”?
• Good teaching leads to better retention of material
• Currently, effectiveness varies across the curriculum

Problem
There is no set of instructional standards for first-year calculus at WPI available for students’ reference

Solution
Create a set of instruction methodology standards for first-year calculus at WPI with input from both faculty and students

Approach
Research
• Review Literature
• Interview WPI Faculty
Create
• Develop Standards
Assess
• Survey Faculty and Students
• Interpret Results

Developing Standards
Clarity
Content
Assessment

Student-Informed Standards

Faculty Testimonials
• “Currently the labs are disjoint from the lectures - this is not ideal.”
• “Students should effectively and clearly ask questions in class or during office hours.”
• “The implementation challenge is that what professors think is clearly explained may not meet students’ expectations.”

Student Testimonials
• “If the professor posts his/her notes online then students can listen to the content in class and ask questions, instead of just trying to write down all the notes.”
• “It’s really the students’ decision to pay attention, but engaging the students keeps the lectures interesting.”

Results
• All 14 standards received an average rating between four and five from students
• Teacher response to the standards was also positive, but less so than students’
• Teachers tended to agree more with standards in general than with feasibility
• Seven standards received an average agreement rating between four and five from teachers
• Four standards received a rating between four and five for student agreement, teacher agreement, and feasibility

Score Distribution of Standards

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References