

SEMESTER BY SEMESTER COURSE IMPROVEMENTS

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TEACHING PHILOSOPHY

- My professional standard will not permit teaching the same class twice. This means each time I teach a class after the first time, I make some improvement in the class.
- Failure to meet this standard means I fail everyone as an educational professional.
 - If I don't improve my courses, I'm failing my students. I'm not working to give them the best opportunity to learn that I can give them.
 - If I don't improve my courses, I'm failing my employer. I'm not providing added value in exchange for the compensation my employer provides.
 - If I don't improve my courses, I'm failing myself. I'm not pursuing the opportunity to learn and grow into a better educational professional.



OVERVIEW OF SEMESTERS AT CWI

- I began teaching at the College of Western Idaho (Nampa, ID) during Fall 2015 for the Math Department specifically to assist with the Math Solutions Center, a new way to teach college-level math to under-prepared students.
- Late I was hired by the Physical Sciences Department and the Engineering Department.
- Because I accepted a new position at the University of Maryland (College Park, MD) to start Fall 2019, I taught my last class at CWI during Summer 2019.
- The following slide shows the courses I taught each semester at CWI.



CWID 101 CONNECTING WITH IDEAS

COURSE DESCRIPTION

- This course is a first-semester-experience course intended to provide students with the skills they need to succeed in college.
- Each instructor teaches the core content in the context of an instructor selected theme.
- My theme examined connections between engineering and literature, history, business, politics, and popular culture to extract lessons on success in college and life.

COURSE IMPROVEMENTS

Fall 2016	First semester taught
Spring 2017	<ul style="list-style-type: none">• Refined former class activities and developed new activities to foster active learning in group environments
Fall 2017	<ul style="list-style-type: none">• Performed statistical analysis to identify poor questions on assignments, especially tests• Improved tests by writing new questions to replace statistically identified poor questions
Fall 2018	<ul style="list-style-type: none">• Developed course material into online format to teach hybrid section

ENGR 120 INTRODUCTION TO ENGINEERING

COURSE DESCRIPTION

- This course provides an introduction to the engineering profession.
- This course contains no lab component, only lecture.
- The course as delivered to me contained no activities and very few assessments. I worked very hard to improve what I was given.

COURSE IMPROVEMENTS

Spring 2019	First semester taught <ul style="list-style-type: none">• Created entirely new course to integrate activities into lectures• Created homework and quiz assignments to improve assessment of student learning• Developed team projects to engage active learning in the classroom
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MATH 095 COLLEGE PREP MATHEMATICS

COURSE DESCRIPTION

- This course is intended to help students develop the pre-requisite math skills they need to complete the math requirement for their major.
- The course is taught online in a modular format so that classes with different prerequisites can all be accommodated.
- The course also utilizes a computer lab (Math Solutions Center) where students who choose can receive one-on-one assistance from a teaching assistant.

COURSE IMPROVEMENTS

	First semester taught
Fall 2016	<ul style="list-style-type: none">• Proposed new orientation sequence for course
Spring 2016	<ul style="list-style-type: none">• Developed system for tracking progress of individual students
Fall 2016	<ul style="list-style-type: none">• Refined student progress tracking system
Spring 2017	<ul style="list-style-type: none">• Refined student progress tracking system
Summer 2017	<ul style="list-style-type: none">• Developed schedule for emailing students about progress
Fall 2017	<ul style="list-style-type: none">• Refined content and schedule for emails about student progress

MATH 123 MATH IN THE MODERN WORLD

COURSE DESCRIPTION

- This course fulfills the General Education requirement for liberal arts majors and others whose major courses are not math-intensive.
- The course focuses on practical applications of math in everyday life, such as personal finances, taxes, loans, mortgages, and statistical thinking and reasoning.

COURSE IMPROVEMENTS

Spring 2018	First semester taught
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MATH 152 ELEMENTARY STATISTICS PLUS

COURSE DESCRIPTION

- This course is intended for students who need to take statistics for their major but do not have the necessary pre-requisites completed.
- The course provides a way for students to fill the pre-requisite gap in less time. Students take this class while taking their statistics class, saving them money as well as time.
- This course was first offered during the Fall 2017 semester.

COURSE IMPROVEMENTS

Fall 2017	First semester taught
Fall 2018	<ul style="list-style-type: none">• Created entirely new homework and quiz assignments to reinforce foundational math skills• Developed series of online lecture slides as reference material for students
Spring 2019	<ul style="list-style-type: none">• Developed diagnostic test to inform students of potential for success in course

MATH 153 ELEMENTARY STATISTICS

COURSE DESCRIPTION

- This course is an introductory course in statistics.
- Topics include statistical thinking and reasoning, graphical representation of data, data sampling, probability, probability distributions (uniform, binomial, Normal, chi-square, etc.), confidence intervals, hypothesis testing, and linear as well as nonlinear regression.

COURSE IMPROVEMENTS

Spring 2016	First semester taught
Spring 2017	<ul style="list-style-type: none">• Created videos for all lectures• Developed slides based on lectures for in-class activities• Provided printed versions to students as a study resource• Created worksheet to help students with nonlinear regression
Fall 2017	<ul style="list-style-type: none">• Refined lecture content• Created new videos to support new lecture content• Updated slides for in-class activities
Spring 2018	<ul style="list-style-type: none">• Simplified final project requirements and documentation• Began making homework help videos
Fall 2018	<ul style="list-style-type: none">• Developed new series of lecture videos (max 10 min/video) with class activities integrated to place entire course online
Spring 2019	<ul style="list-style-type: none">• Refined videos in new series

PHYS 100 SURVEY OF PHYSICS

COURSE DESCRIPTION

- This course is an introduction to physics for non-science majors.
- Topics include mechanics, states of matter, thermal science, electricity, magnetism, waveforms, color, light, quantum mechanics, and relativity.
- The course as delivered to me contained no activities and no summative assessments. I worked very hard to improve what I was given.

COURSE IMPROVEMENTS

	First semester taught
Summer 2016	<ul style="list-style-type: none">• Created entirely new course with in-class activities• Developed worksheets to support in-class activities
Summer 2017	<ul style="list-style-type: none">• Reorganized course structure• Developed pre-lecture materials for students to review before class and use for taking notes during class• Created Blackboard homework assignments to save students money• Developed statistical analysis procedure to improve tests
Summer 2018	<ul style="list-style-type: none">• Developed in-class demonstrations to augment lectures• Refined homework assignments in Blackboard• Refined tests based on statistical analysis
Summer 2019	<ul style="list-style-type: none">• Placed all lectures on video• Reformatted lecture slides for videos• Developed workbooks for students to use with videos

PHYS 100L SURVEY OF PHYSICS LAB

COURSE DESCRIPTION

- This course is the lab component to PHYS 100.
- Students must take this course with PHYS 100 to receive credit for both courses.
- The course as delivered to me needed improvements to match the lecture course I developed; hence the first semester shows some improvement in the course.

COURSE IMPROVEMENTS

	First semester taught
Summer 2016	<ul style="list-style-type: none">• Created separate lab worksheets to ease administration to students for individual lab sessions as well as grading• Provided topic options for the final project lab
Summer 2017	<ul style="list-style-type: none">• Reorganized lab sequence to match new structure in the companion lecture class
Summer 2018	<ul style="list-style-type: none">• Expanded student choice for final project lab by adding an additional topic option (includes new lab development)
Spring 2019	<ul style="list-style-type: none">• Developed online materials to introduce final project lab• Created online portal for final project lab topic selection
Summer 2019	<ul style="list-style-type: none">• Developed entirely new lab