

# ESSE

Essential Studies  
Synthesis Experience

Engages students in a meaningful, relevant and cross-disciplinary three-credit project that combines all six of the institution's essential learning outcomes.

**Oregon**

**TECH**

# Why We Should Care...

In the next five to 10 years, Oregon Tech graduates will need to have the following job skills:

Relationship building

Teaming

Co-creativity

Brainstorming

Problem solving

Cultural sensitivity

Managing diverse employees

**Employers seek  
these skills**

# The Problem...

Currently, Oregon Tech does not integrate into the curriculum the opportunity for students to work with others outside their discipline to address cross-disciplinary problems.





# WPI

## 2016 Institute Project-Based Learning

Chemist  
Librarian  
Statistician  
Marketer  
Electrical Engineer  
Accountant



# The Solution

The ESSE provides students with a project-based course that prepares them for a complex society where they will be expected to collaborate and problem-solve with diverse individuals.

# 6 ESLOs



# HOW IT WORKS

## FACULTY



Dr. David  
Thaemert  
Civil Engineering



Dr. Sophie  
Nathenson  
Gen Ed

- At least two faculty
- Two different academic departments
- One from General Education Department

## STUDENTS

- Junior-standing students select the ESSE
- Students from at least two different departments
- Can't be prescribed by major



Dental  
Hygiene



Mechanical  
Engineering



Geomatics

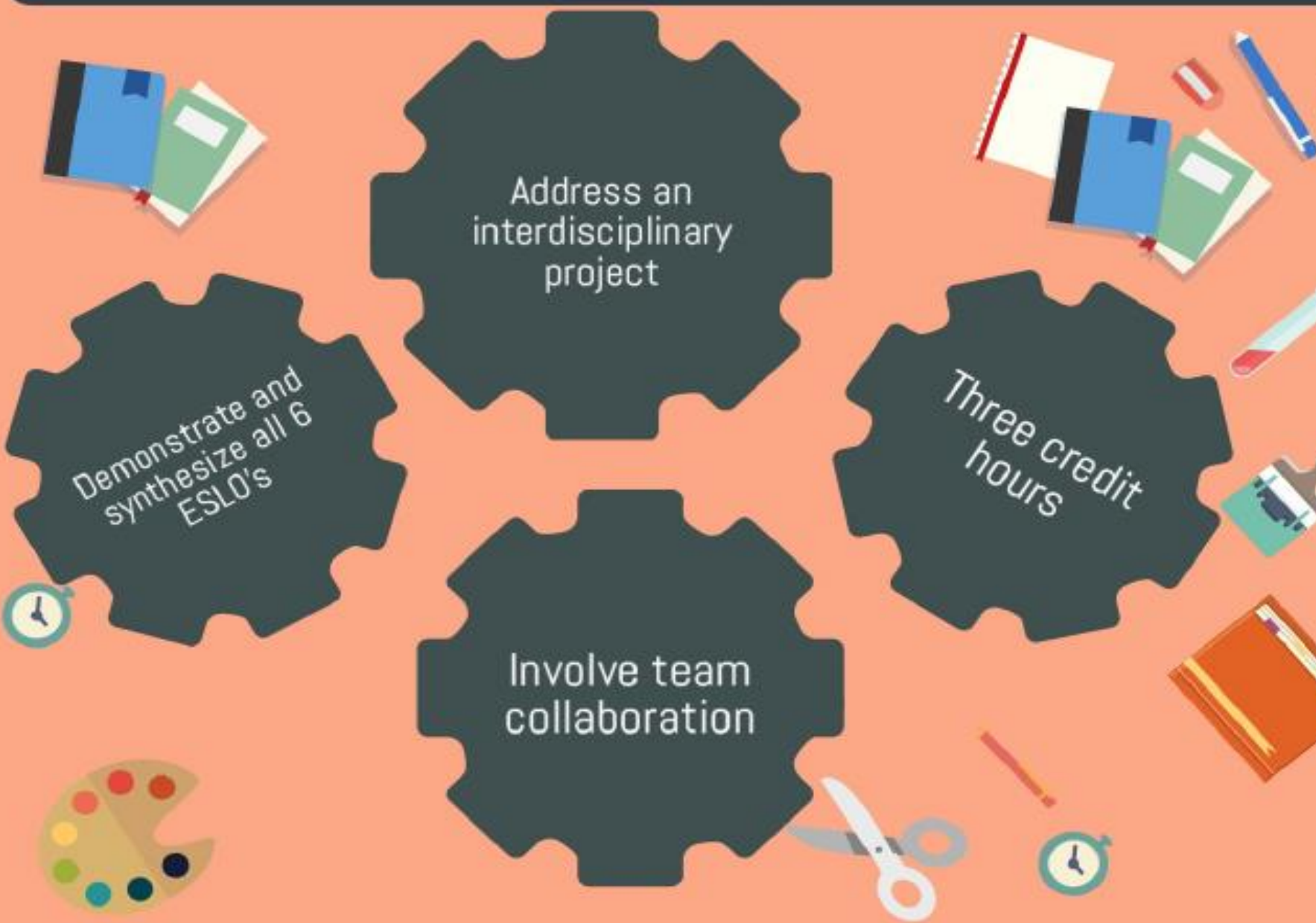


Health  
Informatics



Marketing

# ESSE PROJECTS



Address an interdisciplinary project

Demonstrate and synthesize all 6 ESLO's

Three credit hours

Involve team collaboration





# What happens within an ESSE course?

1

Students start with researching, reading and discussing background. The process is guided by faculty.

2

Students break into teams, narrowing in on a particular approach to tackle their ESSE problem.

3

Most of the class time is spent working in teams, with regular check-ins and meetings with faculty.

4

At the end of the term, students prepare a written report and an oral presentation, outlining proposed solutions and/or recommendations. The final project will demonstrate the expression of the six ESLOs.

# ESSE EXAMPLES

## ESSE 307: Poverty and Effective Aid in Today's World



Designed to develop a responsible framework for understanding poverty and aid. Students will examine the data from past attempts to eliminate poverty and evaluate the effectiveness of such attempts. A set of possible solutions to alleviating poverty will be explored.

## ESSE 307: Women in STEM



Students research, develop and implement an outreach plan to attract more women in STEM as part of the National Girls Collaborative Project.

# ESSE EXAMPLES



## ESSE 307: Oregon Tech Makerspaces

Students research what makes for successful makerspaces and develop a makerspace plan for Oregon Tech. Students examine and address issues related to makerspaces including governance, funding, tools, safety, marketing, organization, operation, access, layout, and curricula integration.

## ESSE 307: Oregon Tech STARS

Students collect and document data for Oregon Tech Sustainability, Tracking, Assessment, and Rating System (STARS) report, as a way to understand how the university is doing with sustainability and pinpoint areas for improvement.



## ESSE 307: Catalyze Klamath

Students will address the following question: "How to create jobs in Klamath Falls and rural Oregon"? The course will focus on addressing rural employment and job growth from an entrepreneurial perspective by supporting multi-disciplinary student teams to develop new or improve existing ideas, products or services that could become thriving businesses in Klamath Falls.

## ESSE 307: Sensor Networks for Community Health Monitoring

How can distributed sensor networks be applied in Klamath Falls to support improving community health outcomes?





## ESSE 307: International Experience

Students from various majors investigate the following question:

How can community-development projects in other countries maintain those projects for long-term success?

# Why an ESSE?

"With a project like this you are interacting in a very interdisciplinary way by bringing together a team of different majors to solve a problem that is very real."



Katie Picchione



2016 WPI graduate,  
Mechanical Engineering

# Why an ESSE?

"One of the reasons WPI graduates are sought after is due to the project-based learning which applies theory and practice simultaneously. WPI graduates hit the ground running in industry."



# WPI

Anne Marie Reichman



WPI graduate,  
Mechanical Engineering



Employer

Student

# Increases Oregon Tech's Value Proposition

Students have applicable, cross-disciplinary real-world experiences that employers value.

Oregon

TECH

# Competitive Advantage



Oregon Tech graduates have one more advantage in a highly-competitive job market to differentiate themselves from other applicants.

**Oregon** **TECH**

Oregon Tech Moves Up in U.S. News & World Report Rankings as Best West Regional College and Top Engineering Programs

*My Oregon **TECH** is rated*

**No. 1**

**Top Public  
West Regional  
Colleges**

**No. 2**

**Best West  
Colleges for  
Veterans**

**No. 3**

**Best West  
Regional  
Colleges**

**No. 35**

**Best  
Engineering  
Programs**

*U.S. News and World Report*