Industry-Supported Senior Projects

Creating Value for Students & Industry
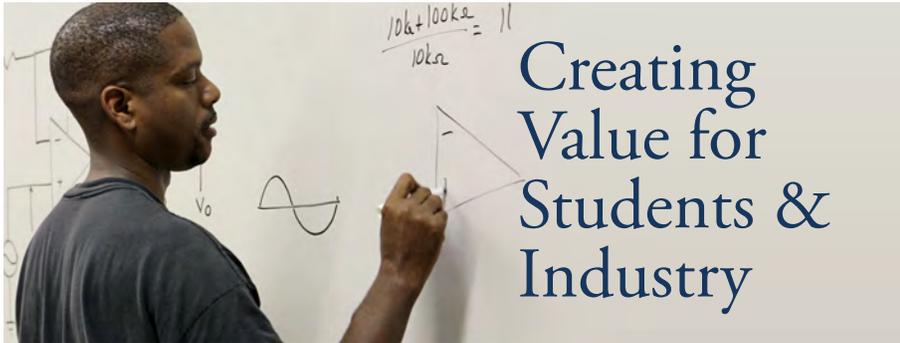
The Senior Project is the final component in Oregon Tech's career-ready curriculum. In their senior year, Oregon Tech undergraduate students must complete a year-long Senior Project sequence. The Senior Project is intended to be a design and project management experience that exposes students to real-world challenges in their major.

Industry Engagement

Industry partners are invited to propose a senior project that exposes Oregon Tech students to relevant and contextualized challenges. Senior projects can be industry-identified, non-critical-path projects that represent a complete system or product. Senior Projects are supported with a donation of $2,500. This contribution will cover basic project costs and administrative fees. A portion of the industry donation also covers student-led senior projects.

Industry Benefits

- Opportunities for your company to work with promising students on non-critical-path solutions
- Well-trained potential employees
- Ability to impact student training and preparation for employment
- Increased company visibility and community engagement
- Strengthens relationship with Oregon Tech for future applied research or employment of graduates
- Provides the opportunity to evaluate students, with no obligation to hire

Student Benefits

- Knowledge of project design cycle, industry expectations, and team work
- Relevant, rigorous, and contextualized education prior to entering the labor force
- Prepared and ready for career after college
- Relationship with industry partner

To support a senior project:

1. Visit oit.edu/seniorprojects
2. Identify project and mentor
3. Submit proposal form to the Office of Strategic Partnerships: **Brittany.miles@oit.edu**

Senior Projects are a year long and are organized like a new product introduction cycle.

Senior Project Course Organization and Timeline*

Term Dates	Student's Work Product
Fall September to December	**Development Phase:** Student completes scope of work with help from the faculty advisor and industry mentor.
Winter January to March	**Design and Prototype Phase:** Design and build deliverables outlined in scope of work.
Spring March to June	**Test, Validate and Document Phase:** Student produces written report, and if applicable, develops design or prototype.

* Some degree programs have Senior Projects that deviate from this timeline and can accept/begin proposals in Spring Term.

Example of Industry-Supported Senior Project:

Electrical Engineering and Mechanical Engineering Technology students identified efficiencies in the manufacturing process of 3D printers.

Learn more at:
www.oit.edu/**seniorprojects**

Oregon TECH

www.oit.edu
Hands-on education for real-world achievement.

Program Offerings

Engineering, Technology & Management

The College of Engineering, Technology & Management is multidisciplinary at Oregon Tech. Degree programs are offered at multiple locations: our main campus in Klamath Falls, our urban campus in Wilsonville, and for Boeing employees in the Seattle, Washington area. Students interested in our virtual campus via Oregon Tech Online also have a number of degree options.

In addition to bachelor's degrees, Oregon Tech offers master's degrees in Manufacturing Engineering Technology, Civil Engineering, and Renewable Energy Engineering. Our main goal is to provide students with the hands-on experience and education they need to be successful in their careers. About 90 percent of our graduates find employment or go to graduate school within six months of graduation and earn among the highest salaries of any graduates in the state.

Health, Arts and Sciences

Oregon Tech's College of Health, Arts & Sciences prepares students for exciting careers and contributes to a strong, diverse workforce. The "H" provides programs in health sciences, housed in the state-of-the-art Dow Center for Health Professions. The "A" represents the humanities, social sciences, management, communication, and mathematics. The "S" represents biology and the pre-professional programs leading to graduate work in medicine, dentistry, veterinary medicine, and other graduate level health professions. These high-quality programs are guided and nurtured by 80 full-time faculty who prepare students to face the challenges of a fast-paced work environment. Most programs are located on the Klamath Falls campus, but we offer the Clinical Laboratory Science, Paramedic Education and Pre-Medical Imaging programs in Wilsonville. Dental Hygiene has additional partner locations in La Grande and the Chemeketa Community College campus in Salem.

Renewable Energy

At Oregon Tech, we don't have to dig deep to find projects and practices that reflect our commitment to sustainability. We offer four majors with an emphasis in energy efficiency: Renewable Energy Engineering, Civil Engineering/Green Buildings, Environmental Science/Sustainable Technologies Emphasis, and a dual major in Civil Engineering and Environmental Science.

In addition to its academic programs, the College of Engineering, Technology and Management (ETM) includes the Oregon Renewable Energy Center (OREC) with its Geo-Heat Center. OREC was established in 2001 to integrate renewable energy technologies into energy systems for practical use by businesses and citizens. The Geo-Heat Center, a national clearinghouse of geothermal information, responds to more than 1,000 inquiries every year from businesses, individuals and governments. Under the guidance of the Geo-Heat Center, Oregon Tech drilled a 5,300 foot deep well to power a 1750 kW plant to meet campus electricity needs. Combined with a large-scale solar installation, Oregon Tech has achieved Net-Zero Energy, and will use its new power plants as teaching labs for students and community partners. Excess energy will be donated to low-income Klamath County residents.

Oregon TECH

About Oregon Tech

Founded in Klamath Falls in 1947, Oregon Institute of Technology is the Pacific Northwest's only public institute of technology. Oregon Tech's applied technology education model fosters an environment of experiential, high-touch learning so students are employment-ready when they graduate. Oregon Tech was ranked among the top ten colleges in Baccalaureate Colleges in the West in "Best Colleges 2014" by *U.S. News & World Report*. *Forbes* also ranked Oregon Tech in the top 20 percent of all four-year and graduate universities in the nation.

Oregon Tech delivers best-in-class applied science, management, technology, and health care education, built upon strong public and private partnerships. We are committed to contributing to a thriving economy by ensuring an abundant and highly skilled workforce and applying the knowledge of our faculty and students to address business challenges.

Klamath Falls www.oit.edu/admissions | oit@oit.edu | 541.885.1150
Wilsonville www.oit.edu/wilsonville | wilsonville@oit.edu | 503.821.1250
Online Education www.oit.edu/online | online@oit.edu | 541.885.1676

Undergraduate Programs

Klamath Falls Campus

- Biology-Health Sciences *(BS), with emphasis in*
  - Pre-Dental
  - Pre-Medical
  - Pre-Osteopathic Medicine
  - Pre-Pharmacy
  - Pre-Physical Therapy
  - Pre-Veterinary Medicine
- Civil Engineering *(BS)*
- Pre-Clinical Laboratory Science** *(BS) joint degree with OHSU*
- Communication Studies *(BS)*
- Computer Engineering Technology *(AE, BS)*
- Dental Hygiene *(BS)*
- Diagnostic Medical Sonography* *(BS)*
- Echocardiography* *(BS)*
- Electrical Engineering *(BS)*
- Embedded Systems Engineering Technology *(BS)*
- Environmental Sciences *(BS)*

Wilsonville Campus

- Clinical Laboratory Science** *(BS) joint degree with OHSU*
- Electrical Engineering *(BS), with emphasis in:*
  - Electrical Power
  - Microelectronics
  - Optical Engineering
  - Renewable Energy Engineering
  - Robotics, Automation and Control
- Electronics Engineering Technology *(BS)*
- Embedded Systems Engineering Technology *(BS)*
- Emergency Medical Services Management *(BS) joint degree with OHSU*

- Health Care Management *(BS), with options in:*
  - Administration
  - Clinical Management
  - Radiologic Science Management
- Information Technology *(BS), with options in:*
  - Accounting
  - Applications Development
  - Business/Systems Analysis
  - Health Informatics
- Management *(BS), with options in:*
  - Accounting
  - Entrepreneurship/Small Business Management
  - Marketing
- Manufacturing Engineering Technology *(BS)*
- Mathematics, Applied *(BS)*
- Mechanical Engineering *(BS)*

- Geomatics *(BS), with options in:*
  - Surveying
- Information Technology, *(BS) with options in:*
  - Applications Development
  - Business/Systems Analysis
  - Health Informatics
- Manufacturing Engineering Technology *(BS)*
- Mechanical Engineering Technology *(BS)*
- Paramedic *(A.A.S) joint degree with OHSU*
- Population Health Management *(BS)*

- Mechanical Engineering Technology *(BS)*
- Nuclear Medicine Technology* *(BS)*
- Nursing *(BS) through OHSU School of Nursing*
- Operations Management *(BS)*
- Population Health Management *(BS)*
- Psychology, Applied *(BS)*
- Radiologic Science* *(BS)*
- Renewable Energy Engineering *(BS)*
- Respiratory Care *(BS)*
- Software Engineering Technology *(AE, BS)*
- Surveying and Geomatics *(BS), with options in:*
  - Geographic Information Systems
  - Surveying
- Technology & Management *(BAS)*
- Vascular Technology* *(BS)*

- Pre-Medical Imaging Technology* *(BS) with options in:*
  - Diagnostic Medical Sonography
  - Echocardiography
  - Nuclear Medicine Technology
  - Radiologic Science
  - Vascular Technology
- Psychology, Applied *(BS)*
- Operations Management *(BS)*
- Renewable Energy Engineering *(BS)*
- Software Engineering Technology *(BS)*
- Technology & Management *(BAS)*

Online Programs

- Dental Hygiene *(BS degree completion)*
- Diagnostic Medical Sonography *(BS degree completion)*
- Echocardiography *(BS degree completion)*
- Health Care Management *(BS) with options in:* Clinical Management and Radiologic Science Management
- Health Informatics *(BS)*
- Information Technology *(BS) with option in:* Applications Development and Systems Analysis
- Operations Management *(BS)*
- Psychology, Applied *(BS)*
- Radiologic Science *(BS degree completion)*
- Respiratory Care *(BS degree completion)*
- Vascular Technology *(BS degree completion)*
- Sleep Health *(AAS) with options in:* Clinical Sleep Health and Polomnographic Technology
- Technology and Management *(BAS)*

What makes Oregon Tech different?

- The most industry relevance for the least cost
- Entrepreneurial and innovative faculty focused on real-world applications
- Hands-on, intensive lab experiences
- Inter-disciplinary programs to prepare students for existing and emerging markets
- More technology transfer credits, making it flexible, affordable, and responsive to business and student needs
- High student ROI (dollars earned in relation to cost of degree), and employer returns through quality of employees.

Graduate Programs

- Civil Engineering *(MS)* KF
- Manufacturing Engineering Technology *(MS)* KF, WV
- Marriage and Family Therapy *(MS)* KF
- Renewable Energy Engineering *(MS)* WV

KF- Klamath Falls campus

WV- Wilsonville campus

Dual-Campus Programs

* **Medical Imaging Technology (MIT):** *Pre-MIT courses available at the Wilsonville Campus. All courses for program offered at Klamath Falls Campus.*
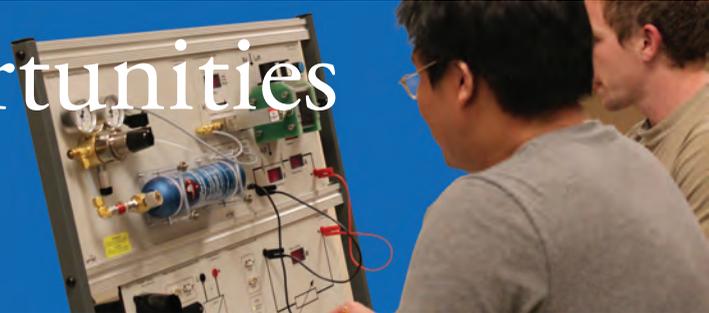
** **Clinical Laboratory Science (CLS):** *Pre-CLS courses available at Klamath Falls Campus. All courses for program offered at Wilsonville Campus.*

Dual-Major Programs

- Optical Engineering*** *(BS)* WV
- Systems Engineering & Technical Management*** *(BS)* WV
- Electrical & Renewable Energy Engineering *(4-yr BS + 1-yr MS program)* WV
- Renewable Energy Engineering and Engineering & Technology Management *(MS) Oregon Tech & Portland State Univ. collaboration.* WV
- Electrical Engineering and Electrical & Computer Engin. *(BS-Oregon Tech, MS Portland State Univ. collaboration)* WV

*** *These dual majors are only awarded in conjunction with completion of an ABET-accredited Bachelor's degree in an engineering discipline.*

Recruitment Opportunities

Online Employer Resource

www.myinterfase.com/oit/employer

Contact Career Services

Career Services, Klamath Falls

Jan Goodyear, *Recruitment Manager*
541.885.1023
jan.goodyear@oit.edu
www.oit.edu/career

Oregon TECH

www.oit.edu/**career**
Hands-on education for real-world achievement.

Recruitment Opportunities

Business leaders know that a company is only as good as its people.

How will the technology, energy, management and healthcare sectors answer the rising demand for high quality employees? Oregon Tech's Career Services staff is committed to helping you answer this challenge.

Oregon Tech's applied technology education model fosters an environment of experiential, hands-on learning so students are work-ready when they graduate.

We are constantly improving and enhancing our programs to respond to changing business needs. Comprised of industry-savvy experts, Oregon Tech faculty and staff have a deep understanding of workforce demands and emerging technological advances and applications.

Employers are encouraged to begin recruiting from Oregon Tech by creating a profile on Oregon Tech Career Services Online (www.myinterfase.com/oit/employer). This portal is for posting jobs and internships, searching students and alumni resumes, registering for career fairs, and requesting on-campus visits.

On-campus Recruiting

Oregon Tech Career Services offers a variety of on-campus recruiting options for employers.

We will market your recruiting events to the entire campus as well as to targeted student groups and academic departments. With the exception of career fairs, there is no cost to employers for these services.

Please contact the Recruitment Manager early to secure preferred dates, and provide at least three weeks advanced notice to allow for adequate marketing.

On-Campus Recruiting Strategies at Oregon Tech include:

Job and Internship Postings and Resume Collection

Set up an account on Career Services Online, **www.myinterfase.com/oit/employer** to post your opportunities for student interns, new graduates and alumni. Student and Alumni resumes are available for viewing by employers with accounts.

Career Fairs

Participate in a Career Fair: One of the best methods for us to bring employers and students together is through our all-campus career fairs.

Information Sessions

Present information about your organization in an intimate, interactive setting. Information sessions are typically held in the late afternoon or early evening. This is an excellent way for you to get to know candidates before a formal interview, while also allowing candidate to gather detailed information about your organization.

Classroom Presentations

Presentations to targeted audiences can be requested through the Recruitment Manager who will check with faculty on availability.

On-Campus Interviews

On-campus interviews can be requested through Career Services Online. The Recruitment Manger will contact you to arrange the details of your recruiting visit.

Information Tables

Reserve an information table in a high-traffic area on our campus and access a large volume of students.

Strategic Partnerships

Oregon TECH

Oregon Tech's Office of Strategic Partnerships connects Oregon Tech faculty and students with business partners. Partnerships include **industry-supported senior projects, applied research and company-sponsored laboratory development.** Oregon Tech staff act as brokers to match business needs with the expertise and interests of students and faculty, and assist clients with agreements and services.

How Partnerships Work

If you have a business need, such as product testing, R&D study, database development or market research, contact the Office of Strategic Partnerships. You will receive assistance to develop a business solution, utilizing student and faculty expertise.

Types of services available:

- Applied research in multiple engineering disciplines, with a focus on renewable energy, sustainable technologies, embedded systems, manufacturing technology
- Proof of concept testing
- Database development
- Software testing or development
- Process improvement
- Non-patient imaging services
- Marketing
- Energy efficiency audits or services

Cost Structure for Sponsored Projects

Oregon Tech works with company sponsors prior to the project start to develop a cost estimate and contract. Costs usually include project and institutional expenses, based on the complexity of the project. In some cases, clients' sponsorships can be matched through grants or other revenue.

Confidentiality and Intellectual Property

Oregon Tech discusses confidentiality and intellectual property issues with the business sponsor before starting any projects, and takes necessary steps to clarify the responsibilities of the client, faculty members, students and Oregon Tech. Oregon Tech's IP guidelines can be found at www.oit.edu/oitt.

Benefits to Sponsors

Office of Strategic Partnership clients receive high-quality, low-cost products and services, state-of the art applied research, and an educational partnership that enhances their company's brand. It's a great deal for everyone.

Benefits to Students

Students gain practical, real-world experience through collaborations with businesses. With professional experiences on their resumes, they will find great jobs and rewarding careers as soon as they graduate and be ready to contribute to their employers on Day 1.

For information visit our website at www.oit.edu/**partnerships**

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Innovative partnerships yield powerful results

Jeremiah Deboever, performing state-of-the-art research on beyond-lithium-ion batteries. Jeremiah seek to optimize the life of the lithium air batteries in electric vehicles so they can go further. After completing his masters' degree in Renewable Energy, Jeremiah is now pursuing his PHD at Georgia Tech.

Renewable Energy Engineering Graduate Student Ryan Smith works to improve the efficiency of electric vehicle battery packs. Ryan Smith has gone on to work for Luxel Corporation.

Partnerships

Arcimoto

Arcimoto, a Eugene-based maker of three-wheeled electric vehicles, approached Oregon Tech because of our expertise in energy storage and the capability of our Energy Storage Lab.

Oregon Tech and Arcimoto are partnering to develop and test various battery designs to improve efficiency and create a more consistent product, ultimately enabling better prediction of battery life. Oregon Tech and Arcimoto will design a battery pack where heat generation and the contact to each cell are better controlled, which will lead to lower cost as well as longer battery life.

> *"Oregon Tech is allowing us to take our idea from the lab bench and prove it will work in the real world, bridging the gap between concept and revenue."*
>
> - Mark Frohnmayer, President of Arcimoto

KersTech

Oregon Tech's work with KersTech focuses on combining an electric motor with a hydraulic motor to find the speeds at which each functions most efficiently. The complex mathematics that Oregon Tech is applying to the problem will result in a controller that efficiently switches between the two motors to maintain a minimum of energy waste.

> *"KersTech is working on the brains of this technology right now. This kind of technology requires very clever controller programming, and that's where Oregon Tech comes in."*
>
> - KersTech CEO, Lester Erlston.

Industry Association Partnerships

- American Society of Mechanical Engineers (ASME)
- Built Environment & Sustainable Technologies Center (BEST)
- Drive Oregon
- Engineering & Technology Industry Council (ETIC)
- Gorge Technology Alliance
- Greater Portland, Inc. (GPI)
- Institute for Electrical & Electronics Engineers (IEEE)
- Manufacturing 21 Coalition
- Northwest High Performance Enterprise Consortium (NWHPEC)
- Oregon Association of Professional Energy Managers (APEM)
- Oregon Healthcare Workforce Institute (OHWI)
- Oregon Innovation Council (Oregon Inc)
- Oregon Manufacturing Extension Partnership (OMEP)
- Oregon Solar Energy Industry Association (OSEIA)
- Oregon Workforce Investment Board (OWIB)
- Pacific Northwest Defense Coalition (PNDC)
- Renewable Northwest Project (RNP)
- Smart Grid Oregon
- Technology Association of Oregon (TAO)
- Klamath Falls, Tualatin, and Wilsonville Chambers of Commerce