

# **B.S. Health Informatics**

## **Oregon Tech Assessment Report**

### **2017-18**

#### **Program Description and History**

Prior to Fall 2015 the Management department offered a degree in Information Technology – Option in Health Informatics. As of Fall 2015 new students are being transitioned into the B.S. of Health Informatics. The Health Informatics Bachelor of Science degree was first offered at OT in 2015. The data within this report summarizes assessment activities for both the Information Technology – Health Informatics Option and the B.S. Health Informatics degrees.

The Health Informatics undergraduate program, the first of its kind in the Oregon University System, is an option within the Department of Information Technology at Oregon Tech. Health Informatics prepares students for a career as information and computing specialists in the health care field. The Health Informatics program gives students a strong background in business management, information systems, computing science and health care providing you with the necessary knowledge and skills in the field of health informatics.

Oregon Tech’s Health Informatics program is designed to fit the lifestyle of working adults by offering evening and weekend classes and to provide the maximum opportunity for employment and promotion. Many courses are also available via online distance education. Health informatics professionals work in operational and management positions throughout the health care industry in such locales as hospitals, clinics, managed care organizations, software vendors and government agencies. The Health Informatics program was awarded accreditation by the International Assembly of Collegiate Business Educators (IACBE) in 2008 and reaffirmed in 2015.

#### **Program Highlights**

##### **Program Enrollment, Graduation and Employment Rates**

Total enrollment across all campuses is approximately 39 students; 7 at the Klamath Falls campus, 16 in Wilsonville, and 16 online. An additional 6 students are in old IT with HI option. The program graduated 1 student for 2018. The IT with HI option graduated 8 students. The three-year annual starting salaries averaged \$52,000. The program has a 90% success rate (within six months of graduation students are employed or in graduate school).

##### **Industry Relationships**

Industry relationships for the Health Informatics degree program in the 2017-18 assessment period increased in both depth and breadth. These relationships are manifest primarily in internships, senior project opportunities, and job offers after graduation. The growing list of industry partners that demonstrate interest in Health Informatics students and graduating seniors (Asante Health System, Sky Lakes Medical Center, Kaiser Health System, Klamath Basin Behavioral Health, Cascade Comprehensive Care, Klamath Health Partnership, Huron Consulting to name a few) represents tremendous potential for students to engage with industry presently and going forward.

##### **Student Learning Experiences**

Oregon Tech emphasizes hands-on projects to provide students with “real” experiences they will encounter in the workplace. In keeping with this spirit, health care management and health informatics students were recently given a “real” business challenge to solve. George Olson, the chief operations officer at Klamath Health Partnership (KHP), sought help designing a dashboard that would make accessing patient data more retrievable, usable and reliable. Associate professor Jeff Dickson

turned the challenge into a class project. “This is what our health care and health informatics students will be undertaking in the field, so it is important they get the experience—here—while under guidance and instruction from faculty who have specialized experience in the health care industry,” explained Dickson.

KHP had previously worked with other companies to help solve the problem, but after several attempts, they turned to Oregon Tech for assistance. “The students took a mountain of a problem, broke it down to a single quality initiative, and built a foundation for us to replicate in the future,” explained Olson when reflecting on the dashboard students created for KHP. “Other organizations we have worked with failed repeatedly to produce over the past year what Jeff Dickson’s students created in 8-12 weeks.” More can be found [online](#).

### **Success Stories**

Health Informatics students speak highly of the courses they take as evidenced by course evaluations, but many students also derive and comment on the tremendous learning experiences from the internships and senior projects. Below are two such experiences shared by students via the student exit survey over this assessment period.

*“I really like the diversity of the professors I had. They not only have experience in my career path, but also in other careers and always seem to be adding to their education. This makes me feel comfortable that I am receiving open-minded information from all sides of my field of study. I like all the relevant information I am receiving in my classes.”*

*“Every time I thought I wouldn’t use the knowledge gained in my education, my boss would ask me to complete a project with this knowledge. So thank you for teaching everything I know today.”*

### **Program Purpose**

#### **Bachelor of Science in Health Informatics Mission**

The Health Informatics degree fully prepares students to assume positions in information technology departments to enhance quality and operations for the health industry.

#### **Educational Objectives**

1. The Health Informatics degree program prepares students to interpret health policy and systems, with the ability to integrate policies into the healthcare agency.
2. The Health Informatics program prepares students to analyze, design and develop information systems that enhance operational efficiencies and strategic goals of the organization.
3. The Health Informatics program prepares students to analyze data utilize analytic technologies to improve the organization efficiencies and operational effectiveness.

#### **Management Department Student Learning Outcomes (SLO)**

The Health Informatics degree consists of the five core Management Department student learning outcomes. Upon completion of this program, Health Informatics graduates will be able to:

1. Communicate the major concepts in the functional areas of accounting, marketing, finance, information technology, and management.
2. Describe the legal, social, ethical, and economic environments of business in a global context.
3. Solve organization problems, individually and/or in teams, using quantitative, qualitative, and technology-enhanced approaches.
4. Demonstrate professional communication and behavior.
5. Apply knowledge of business concepts and functions in an integrated manner.

### Program Student Learning Outcomes (PSLO)

Upon completion of this program, Health Informatics graduates will be able to:

1. Interpret health policy and systems
2. Design and implement information systems
3. Apply knowledge of statistical concepts to analyze data (not currently assessing)

### Assessment Cycle

#### Assessment Schedule

1. **Oregon Tech’s Essential Student Learning Outcomes:** ESLOs are assessed on a six-year cycle. The ESLO assessment schedule may be found on the Oregon Tech website under Essential Student Learning Outcomes.
2. **Department Level Student Learning Outcomes:** IACBE requires all accredited institutions to complete a Public Disclosure of Student Achievement on an annual basis. In addition, all outcomes are assessed annually, with the full self-study for IACBE core student learning outcomes (Core SLOs 1-5) completed every seven years.

Outcomes:	Direct	Indirect
Communicate the major concepts in the functional areas of accounting, marketing, finance, information technology, and management.	<ul style="list-style-type: none"> <li>• Case Study</li> <li>• Senior Project</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Exit Survey</li> </ul>
Describe the legal, social, ethical, and economic environments of business in a global context.	<ul style="list-style-type: none"> <li>• Case Study</li> <li>• Senior Project</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Exit Survey</li> </ul>
Solve organization problems, individually and/or in teams, using quantitative, qualitative, and technology-enhanced approaches.	<ul style="list-style-type: none"> <li>• Case Study</li> <li>• Senior Project</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Exit Survey</li> </ul>
Demonstrate professional communication and behavior.	<ul style="list-style-type: none"> <li>• Case Study</li> <li>• Senior Project</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Exit Survey</li> </ul>
Apply knowledge of business concepts and functions in an integrated manner.	<ul style="list-style-type: none"> <li>• Case Study</li> <li>• Senior Project</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Exit survey</li> </ul>

### Program Student Learning Outcomes: Program Based Annual Assessment Schedule and Activity

Outcomes:	Direct	Indirect
Interpret health policy and systems	<ul style="list-style-type: none"> <li>• Senior Project</li> <li>• Community project</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Exit Survey</li> </ul>
Design and implement information systems	<ul style="list-style-type: none"> <li>• Senior Project</li> <li>• Systems Design Project</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Exit Survey</li> </ul>

### Evidence of Improvement in Student Learning

## Department Level Student Learning Outcomes, Activities and Results

Management Department			
Program Outcomes	Minimal Acceptable Performance	Assessment	Results
Communicate the major concepts in the functional areas of accounting, marketing, finance, information technology, and management.	80% achieve a rate of 3 or 4	Senior Project N=64	86%
	80% achieve a rate of 3 or 4	Case Study N=82	86.5%
	80% score 4, 5, or 6	Senior Exit Survey N=93	75%
Describe the legal, social, ethical, and economic environments of business in a global context.	80% achieve a rate of 3 or 4.	Senior Project	86%
	80% achieve a rate of 3 or 4	Case Study	90%
	80% score 4, 5, or 6	Senior Exit Survey	90%
Solve organization problems, individually and/or in teams, using quantitative, qualitative, and technology-enhanced approaches.	80% achieve a rate of 3 or 4.	Senior Project	86%
	80% achieve a rate of 3 or 4	Case Study	81%
	80% score 4, 5, or 6	Senior Exit Survey	98%
Demonstrate professional communication and behavior.	80% achieve a rate of 3 or 4.	Senior Project	86%
	80% achieve a rate of 3 or 4	Case Study	97%
	80% score 4, 5, or 6	Senior Exit Survey	100%
Apply knowledge of business concepts and functions in an integrated manner.	80% achieve a rate of 3 or 4	Senior Project	86%
	80% achieve a rate of 3 or 4	Case Study	84%
	80% score 4, 5, or 6	Senior Exit Survey	100%

- **How did past results compare with this year's results?**

**Senior Project:** The department has seen ongoing improvement over the last several years with this assessment. During the 2014-15 assessment cycle, the department did not meet any of our learning objectives. Each year this has been slowly improved. This was the first year we have met all the minimal acceptable performance levels for all outcomes.

**Case Study:** The results from the case study assignment have improved over prior years as well. Similar to senior project, during prior years many areas did not meet the targeted performance levels. This year, all student learning objectives were met at 80% and above.

**Senior Exit Survey:** The results of this year are similar to past years. Areas of concern for student learning are accounting, marketing, finance and information technology. All other areas connected to the student learning outcomes continue to perform well meeting minimal acceptable performance levels.

- Can you say the data supports improvements based on the action plan? (i.e. closing the loop).**

**Senior Project:** The data supports the strategies that we have been employing. Strategies that have been used over the last years have been for faculty teaching senior project to communicate best practices and standards on a regular basis. Faculty have also shared and developed materials that have been shared across the department. Moreover, all faculty, apart from those teaching senior project, are actively working with students to mentor them through the process. For example, Professor Schaeffer mentors students through the greenbelt process while Professor Yates offers feedback on writing.

**Case Study:** This past year a more unified approach was planned and implemented by faculty teaching the course related to this assignment. Specifically, two years ago we developed a case study assignment that was related to the business simulation used in the Strategic Management course. This assignment not only requires students to apply the knowledge within the business simulation, but also incorporates prior knowledge from their other program course work. This past year the professors utilized this same approach rather than creating assignments individually. Like senior project, the interactions of faculty helped to develop a more cohesive approach that focused on the student learning outcomes.

**Senior Exit Survey:** In the prior year the department adjusted the survey questions to focus on student learning rather than a series of questions focused on the student's perception of faculty. After making this change, there was no significant changes. Discussion among the faculty showed a concern that the correct wording in the question was still not quite right. Specifically, the question asked students to rate their proficiency in the various student outcomes (i.e. accounting, marketing). Advice from an IACBE representative is that our results are unusual so we want to get the root of this issue.
- Data-driven Action Plans: Changes Resulting from Assessment**

**Senior Project:** The faculty would like to find a way to have more than one senior project professor assess the student work. This will allow all faculty to review senior projects and provide feedback for improvement. This will likely be done using a small sample of the projects to discover areas of improvement as well as feedback for faculty teaching senior project courses. These discussions will be conducted in the winter or spring terms within small groups or during a department retreat.

**Case Study:** The plan for this next year is for the course faculty to continue to discuss their approaches and share ideas for the Strategic Management course and the assignment. As with the senior project refining the approach to this class and assessment may be able to pinpoint areas of improvement.

**Senior Exit Survey:** Following discussion, the group determined we will make another adjustment to the senior exit survey. Specifically, the word proficiency should be replaced with the word understanding since this will more accurately focus on the question's intent. The goal of this plan is for at least 80% of students being able to rate their understanding of each of the functional areas of business at a high level (4-6). If this does not work this year, the department will need to drill into these courses to determine specific student concerns.

## Program Student Learning Outcomes, Activities and Results

Program Outcomes	Minimal Acceptable Performance	Assessment	Results
Interpret health policy and systems	80% achieve a rate of 3 or 4	Senior Project N=7	100%
	80% achieve a rate of 3 or 4	Community Project N=7	86%
	80% score 4, 5, or 6	Senior Exit Survey N=5	100%
Design and implement information systems	80% achieve a rate of 3 or 4.	Senior Project N=7	100%
	80% achieve a rate of 3 or 4	System Design Project N=4	25%
	80% score 4, 5, or 6	Senior Exit Survey N=5	100%

- How did past results compare with this year's results?**  
 Community Project in 2016-2017 was 100% in 2017 -2018 the results were 86%. The System Design Project in 2016-2017 was 83% and in 2017-2018 results were 25%. The Senior Projects in 2016-2017 was 83% and in 2017-2018 results were 100%.
- Can you say the data supports improvements based on the action plan? (i.e. closing the loop).**  
 There was no action plan.
- Data-driven Action Plans: Changes Resulting from Assessment**  
**Senior Project:** Students are currently meeting the objective for senior project. The online students do not do as well as those working with faculty on campus. Increased interaction with online students is being planned. In addition, the IT/HI faculty have worked with all faculty advising IT/HI students to ensure that focused electives are being taken before senior project is started. This will ensure that students have taken 300 and 400 level electives in their chosen area before attempting project management in the senior project sequence.  
  
**Systems Design Project:** Professor Lindy Stewart will review the curriculum for MIS 442 that includes the Systems Design Project and evaluate effectiveness and consider re-structuring of curriculum. This will aid in students ability to critically think and problem solve.