

# **B.S. Health Informatics**

## **Oregon Tech Assessment Report**

### **2020-21**

#### **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 B.S. Health Informatics was first offered at Oregon Tech 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 students with the necessary knowledge and skills in the field of health informatics.

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 Accreditation Council for Business Education (IACBE) in 2008 and was awarded reaffirmation of accreditation in 2015.

#### **Program Highlights**

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

Total enrollment across all campuses is approximately 26 students; 2 at the Klamath Falls campus, 7 in Portland-Metro, and 17 online. The program graduated 5 students for 2021. The three-year annual starting salaries averaged \$60,000. The program has a 100% 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 2020-21 assessment period increased in both depth and breadth. These relationships translate to 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 include:

- Sky Lakes Medical Center
- Cascade Health Alliance
- Klamath Health Partnership
- Western Oregon Advanced Health
- Klamath Basin Behavioral Health
- Mosaic Medical Center  
Providence
- Kaiser Permanente
- VA
- Huron Consulting
- State of Oregon
- OHSU

This group represents tremendous potential for students to engage with industry as both students and alumni.

### **Student Learning Experiences**

The following are examples of student learning experiences in Health Informatics:

- An Internship at OHSU doing data mining and analysis. This student was offered an additional internship position before graduating.
- The development of a customized Electronic health care system for small dental group
- A data analysis project on Mental Health Factors in Portland Oregon
- The development of HIPAA Compliance Guide for Independent Practitioners -  
*“The HIPAA Compliance Guide for Independent Practitioners (Simply HIPAA) will be a guide targeted towards independent health practitioners who are required to achieve HIPAA compliance. HIPAA (Health Insurance Portability and Accountability Act) is a secure configuration policy that defines technical and physical controls that health care providers must use when handling private patient information (Office for Civil Rights, 2013).”*
- Analysis of Provider Efficiency Profile Salem Health Medical Group  
*“Salem Health Medical Group (SHMG) operates eight Family Medicine clinics with a total of 22 Primary Care providers. The clinic's operations days and hours are Monday- Friday, 08:00 am – 5:00 pm, with some clinics having an exemption of extending operations one day a week up to 08:00 pm. All clinical documentation is expected to happen within the working hours, but this is not the cases for SHMG providers. There is documentation occurring outside clinical hours raising concerns among providers, SHMG operations, and the clinical informatics department. Documentation time is significant when it comes to the evaluation of EHRs impacts, and therefore the primary focus of this project will be concentrated on SHMG providers documentation within Salem Health's Epic EHR system.”*
- NAMI (National Alliance on Mental Illness) of Clackamas County, a nonprofit mental health organization process improvement project.  
*“Efforts for process improvement, a workflow analysis is desired to identify technological solutions to assist with potential integration of their various software applications that have made completing work efficiently a challenge.”*
- Samaritan Health Services  
Implementation of EPIC's Remaining Length of Stay Predictive Model  
*“SHS has assembled a team consisting of two Project Managers (PMs), as well as a team of analysts and subject matter experts (SMEs) for each application affected: ClinDoc, Willow, and Beaker. The SMEs will be responsible for ensuring that the assigned IDs for the scoring model obtained from Epic's cognitive computing model for RLOS will be updated with the corresponding IDs used by SHS. These will then be reviewed by the application's team lead and PMs. The team of analysts will simultaneously configure the cognitive computing model for RLOS, as well as the risk-adjusted benchmarking cognitive computing models as per the setup guidelines (Epic, 2021, p. 16).  
The successful achievement of this project will allow hospitalists to have a more accurate estimation of how long a patient will stay hospitalized before being discharged, based on the patient's diagnoses and test results. This will help streamline the discharge process.”*

### **Success Stories**

Health Informatics students speak highly of the courses they take as evidenced by course evaluations, but many students also comment on the tremendous learning experiences provided through their internships and senior projects. In addition, Health Informatics has a 100% success rate. Below are two such experiences shared by industry project sponsors over this assessment period.

- “Moving her degree from IT to HI gave her the ability to successfully gain internship opportunities with Kaiser Permanente when she was struggling to get an interview under the IT degree.”
- “Developed a customized electronic health care system for a local dental company in Wilsonville OR. Organization wanted to evaluate functions and feature before adoption. She was successful in showing the organization the benefits of a customized EHR.”
- “Developing a reporting system for OIT dental program to evaluate student objectives and outcomes that supports faculty and student engagement”

## **Program Purpose**

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

The Health Informatics degree fully prepares students to assume positions in healthcare settings that improve the effectiveness, quality of delivery, and operations using health information technologies.

### **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 and utilize analytic technologies to improve the organization’s efficiencies and operational effectiveness.

### **Management Department Intended Student Learning Outcomes (ISLOs)**

The Business - Management option consists of the six core Management Department student learning outcomes. Upon completion of this program, Business Management graduates will be able to:

1. Apply core concepts in a business environment.
2. Apply the legal, ethical, social, and economic environments of business in a global context.
3. Contribute to the development of a team-oriented and collaborative environment.
4. Solve business problems using decision-support tools and /or research skills.
5. Demonstrate professional communication and behavior using a variety of delivery methods.
6. Analyze business concepts and apply strategic planning skills to effect change 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 (will assess starting in 2019-20)

## **Assessment Cycle**

The Management Department assesses student learning at three levels: at the institutional level, at the department level, and at the program level. Essential student learning outcomes (ESLOs) and assessments are directed by Oregon Tech’s Assessment Executive Committee with two to three ESLOs assessed per year. At the department level, the Management Department assesses six intended student learning outcomes (ISLOs) in accordance with IACBE guidelines and KLOs. At the program level each of the Management Department’s programs assesses its established program-specific student learning outcomes (PSLOs). Program faculty review data from all these assessments, in addition to data from the department’s indirect assessments, including a senior exit survey and industry advisory board feedback, when considering changes and improvements to programs.

The Management Department’s 3-year assessment cycle (see Table 1) is designed to produce assessment results that will inform and direct change within the Management Department in a timely manner, as well as support the strategic goals and core values of the institution. The intent of a 3-year cycle is to provide faculty with the time and space needed to thoughtfully analyze student learning outcomes and operational data, identify areas of concern, engage appropriate stakeholders to inform planning and drive action, evaluate improvement activities and their impacts on student learning and operational outcomes, and reflect on both the process and the results within the context of mission fulfillment at both the departmental- and institutional-level.

**Table 1: Assessment Cycle**

Year	IACBE Schedule	Management Department Schedule
2020-2021	<b>Self-Study</b> Annual Notice	Intended Student Learning Outcomes & Intended Operational Outcomes
2021-2022	Annual Notice	Program-Specific Student Learning Outcomes
2022-2023	Annual Notice	Reflection Year: Qualitative Deep-Dive
2023-2024	Annual Notice	Intended Student Learning Outcomes & Intended Operational Outcomes
2024-2025	<b>IQAR</b> <b>Interim Quality Assurance Report</b> Annual Notice	Program-Specific Student Learning Outcomes
2025-2026	Annual Notice	Reflection Year: Qualitative Deep-Dive
2026-2027	Annual Notice	Intended Student Learning Outcomes & Intended Operational Outcomes
2027-2028	Annual Notice	Program-Specific Student Learning Outcomes
2028-2029	<b>Self-Study</b> Annual Notice	Reflection Year: Qualitative Deep-Dive

### Summary of Achievement of Department’s Intended Student Learning Outcomes

**Table 2: Department’s Intended Student Learning Outcomes**

Intended Student Learning Outcomes (ISLOs)		Learning Assessment Measures		
Department ISLOs		Direct Measures of Student Learning		Indirect Measures of Student Learning
		Senior Project Experience	Strategic Capstone Essay	Senior Exit Survey
Measure		Goal: 80% Scale 1-4, 80% achieve rating of 3 or 4	Goal: 80% Scale 1-4, 80% achieve rating of 3 or 4	Goal: 80% Scale 1-6: 80% rating of 4, 5, 6
<b>1</b>	Apply core concepts in a business environment.	<b>Met</b> <b>82%</b>		<b>Met</b> <b>95%</b>

2	Apply the legal, ethical, social and economic environments of business in a global context.		<b>Met 91%</b>	<b>Met 92%</b>
3	Contribute to the development of a team-oriented and collaborative environment.	<b>Met 86%</b>		<b>Met 92%</b>
4	Solve business problems using decision-support tools and/or research skills.	<b>Met 80%</b>		<b>Met 100%</b>
5	Demonstrate professional communication and behavior using a variety of delivery methods.	<b>Met 80%</b>		<b>Met 97%</b>
6	Analyze business concepts and apply strategic planning skills to effect change in an integrated manner.		<b>Met 85%</b>	<b>Met 97%</b>

According to the results presented in Table 2, the Management department successfully met its intended student learning outcomes. The assessments represent a culmination of the student's educational experience within Oregon Tech's business programs and have been selected by the business faculty to assess the Management Department's intended student learning outcomes:

- **Strategic Capstone Essay:** While student outcomes have not changed much over the years, the assessment method used by faculty has continued to evolve. The two faculty that regularly teach this course have worked together to develop more consistent delivery of course content, assignments, and evaluation rubrics. Moreover, rather than trying to evaluate all ISLOs in the strategic management class, it was determined to focus on two of the ISLOs that more naturally connect to the content of the course. The results have improved from prior years.
- **Senior Project Experience:** The senior project experience is the hallmark of our programs. These are primarily individual, applied projects that require students to utilize project management tools to manage a project for an industry partner with well-defined deliverables. These projects help to launch students into careers of their choosing. The department has continued to review, reflect and improve the processes used to support the successful completion of these projects. While the overall results were positive, a few areas within the assessment fell short of established performance criteria. Specifically, the Summary & Conclusion area scored lower, which includes evidence of a summary with specific recommendations. Also, the rubric criteria of Culminating Experience, which is identified as the student's ability to adapt and apply skills, theories and methodologies independently in a new situation. These criteria areas provide the department with an opportunity to develop plans for improvement.
- **Senior Exit Survey:** The exit survey was designed to map to our updated ISLOs. The Management department tracks the results of the exit survey every year and has not always met established performance targets. Results from the 2020-2021 administration of the senior exit survey improved from prior years.

## Summary of Achievement of Operational Outcomes

**Table 3: Department's Intended Operational Outcomes**

Intended Operational Outcomes		Operational Assessment Measures					
Department IOOs		Faculty Qualifications	Annual Performance Evaluations	Management Department Retention Dashboard	Career Exit Survey	Management Industry Advisory Council Goal- Semi-Annual Meeting	Senior Exit Survey
Measure:		Goal 100% Academically or professionally qualified as defined by IACBE	Goal 80% Professional development and service goals tied to strategic plan	Goal 75% % of student retained after 4 <sup>th</sup> term	Goal 90% % of students to attain employment or admission to grad program	Goal- Semi-Annual Meeting Meeting minutes	Goal 80% Scale 1-6: 80% rating of 4, 5, 6
<b>1</b>	Faculty members will be highly qualified in their disciplines	<b>Met 100%</b> Academically or Professionally Qualified Faculty					<b>Met 90%</b>
<b>2</b>	Faculty engage in professional development and services activities that support the department's mission		<b>Not Met 50%</b> Professional Development <b>71%</b> Service				
<b>3</b>	Departmental processes support students throughout their program			<b>Semi Met 67.4%</b>			<b>Met 84%</b>
<b>4</b>	Curriculum is current and relevant.				<b>Met 90%</b>	<b>Met 100%</b>	<b>Met 84%</b>

According to the results in the above table we have both met and not met areas of our intended operational goals. While the Management Department has developed a dynamic strategic plan with corresponding action plans, we have not always continuously assessed all of these areas on a regular basis. Our 2020-2021 results provide us with good opportunities for reflection and improvement during the next assessment cycle. The following summarizes these assessments:

- Faculty Qualifications:** Maintaining faculty qualification standards is an area that the department has continued to work on over the last accreditation cycle. The academic business unit has had to grow its part-time adjunct pool to supplement our teaching staff over the last few years due to growing enrollment in our programs. We pay close attention to qualifications of all faculty at the time of hire.
- Annual Faculty Performance Evaluations:** This is a new area of assessment for the Management department, and represents an area where we want to increase standards across the department. Several years ago, we developed a strategic action plan and this intended operational outcome has now been incorporated into the department's annual assessment process. Moreover, the chair is working with the faculty to increase the level of active (rather than

passive) engagement in professional development and service activities.

- Management Department Retention Dashboard:** Over the last two years, the Management department has focused on developing strategies to improve student retention in the department. We have developed a three-pronged approach which relies on common best practices, current resources, and increased communication practices. As such, we have seen a consistent increase in 4th term student retention. However, since both our online and Portland-Metro campuses support more non-traditional students, we are challenged with improving these retention rates. Given this reality, the department is not as focused on its overall retention rate, but is instead focusing on formalizing retention practices to support student success. To this end, Management faculty have developed an early alert system, implemented a strategic communication strategy, engaged with the university- and college-level retention committees, and plan to draft a retention strategy by the end of the 2021-2022 academic year.
- Career Services Exit Survey:** We have regularly reviewed the Career Services Exit Survey for all programs. This survey focuses on graduate job placement and graduate school rates. Overall, the department has had positive results that support both the department’s mission and that of the university.
- Management Industry Advisory Council:** Over the last seven year cycle, we disbanded and then reimaged and launched a new advisory council. Previously, our council included mostly Klamath Falls representatives with few direct connections to industries that represent career pathways of our graduates. The new advisory council was developed through a more thoughtful process that includes industry and alumni representatives that have more direct insight regarding the needs of industry.
- Senior Exit Survey:** Similar to the Career Services Exit Survey, the Management Department annually reviews the Senior Exit Survey for all programs. Survey results have improved over time.

## Summary of Changes, Actions & Outcomes

Table 4 summarizes the Management Department’s action plans based on the intended student learning and operational outcomes summarized above. This action plan will be incorporated into our work over the next three year cycle.

**Table 4: Summary of Changes, Actions, and Outcomes**

	Change or Improvement Needed	Action Required and Timeline	Desired/Realized Outcomes	Additional Action Required
1.	<b>Senior Project Expectations:</b> Continue to align Senior Project expectations and deliverables across all programs.	Annual meeting of senior project faculty to discuss areas of alignment and best practices. Review rubric to create agreement on expectations. Continue to review senior exit survey questions to ensure alignment with outcomes.	Continue to align expectations for senior project experience across department and programs.	Share with the rest of the department to create an overall understanding of measures and outcomes

	Focus on student performance as related to Culminating Experience and Written and Oral Communication	Continue to work with students to manage scope of their projects and pathways to completion. Consider incorporating student reflection to better understand student perception of their learning experience.	Improvements in minimum acceptable performance for these performance criteria. Better alignment between direct and indirect measures of assessment.	
2.	<b>Assessment Cycle:</b> Implement 3-year assessment cycle to promote meaningful reflection and action plans for continuous improvement.	Starting in the fall of 2020, the academic business unit began to implement its new assessment cycle. Ongoing action will require adhering to the new 3-year cycle and reviewing its usefulness moving forward. The academic business unit will focus on assessment of program-specific student learning outcomes in 2021-2022.	New assessment cycle allows for deeper and richer reflection to support continuous improvement on ISLOs, IOOs & broad-based goals to attain mission fulfillment.	Inform/Collaborate with the new AVP of Academic Excellence during implementation of the new assessment cycle.
3.	<b>Retention:</b> Continue to develop and implement retention initiatives within the academic business unit to improve retention rates.	2021-2022- Pilot new communication tool which allows faculty/advisors to better monitor student activity. Pilot early alert system, enabling advisors to track student Canvas access as well as current grades. 2022-2023-Fully implement communication tool and early alert system across the department in conjunction with university- and college-level retention committee initiatives .	Improve retention of management students across all locations.	Work with newly hired staff within the retention office to determine best practices and available resources.
4.	<b>Faculty Resources:</b> Build faculty resources to maintain course offerings.	Hire full-time faculty needed to fully support current programs. Continue to build pool of part-time faculty to teach in all areas, at all campuses. Determine how to best support part time faculty as well as maintain quality of programs.	Successfully hire requested full-time faculty that meet academic or professional standards. Create a robust pool of part-time faculty. Maintain quality standards and consistent student outcomes across courses and locations.	
5.	<b>Full-time Faculty Engagement and Expectations:</b> Continue to develop consistent	Over the next two years, the department chair will work with individual faculty to communicate expectations, in accordance with	Consistent level of performance expectations for faculty in the area of	



	professional development and service expectations for full-time business faculty that also support disciplinary differences and individual faculty goals.	the CBA, to ensure faculty expectations are well understood. Continue the process of annually updating the department's strategic action plans and have each faculty member "sign up" to support one or more strategic initiative(s).	professional development and service across the department.	
6.	<b>Industry Advisory Council:</b> Continue to develop a robust advisory council that can actively support the academic business unit and make connections to industry.	Build advisory council membership including defining roles and responsibilities of advisory council officers and members. Solicit quarterly input in the development of industry relevant program outcomes and curriculum alignment.	Develop robust advisory council that actively supports academic business unit.	

**Program Student Learning Outcomes**

Program student learning outcomes were not measured during the 2020-21 academic year.