

**Management – Operations Management  
Annual Assessment Report  
2014-2015**

**I. Program History**

The Operations Management degree at Oregon Tech has undergone several iterations in recent decades. Oregon Tech originally offered an Industrial Management degree; this degree evolved in the mid 1990s into an Industrial Engineering degree which was accredited by ABET. Oregon Tech hoped to increase enrollment with these changes. Enrollment, however, dropped dramatically as students were not interested in an engineering emphasis. In 2002 the curriculum was revised, the ABET accreditation was dropped, and the degree name was changed to Operations Management. Today, the Operations Management program is transfer- friendly, preparing students for leadership positions in the production and service industries. Curriculum enhancements for the 2014-2015 academic year include a new course sequence that offers courses in Materials Management, Logistics Management and Quality Management. This sequence is intended to bring additional depth to the Operations Management degree program.

This degree option is offered in Klamath Falls and Wilsonville as well as online. Total enrollment across all campuses is approximately 65 students; 14 at the Klamath Falls campus, 26 in Wilsonville, and the remainder online. Annual salaries reported for 2014 averaged \$55,700.

The Operations Management degree program was awarded accreditation by the International Assembly of Collegiate Business Educators (IACBE) in 2008.

**II. Program Mission, Objectives and Student Learning Outcomes**

The Management faculty reviewed the program purpose, objectives, and learning outcomes during the fall faculty meeting in September 2014. The faculty reaffirmed the statements below:

**Operations Management Mission Statement:**

The Operations Management degree prepares students for leadership positions in the production and service industries.

**Educational Objectives:**

- (1) The Operations Management degree program prepares students for graduate school programs such as the MBA or the MIM.

- (2) The Operations Management degree program prepares students for supervisory positions in organizations, including for-profit organizations, non-profit organizations, and government organizations.
- (3) The Operations Management degree program prepares students for M.A.T. programs and future careers in high school education.
- (4) The Operations Management degree program develops skills in problem solving, project management, communication, and managing effectively in team-based work environments, and prepares students for employment within a wide variety of service and product industries.

### **Student Learning Outcomes:**

The Operations Management program assesses student learning at three levels: at the institutional level, at the department level, and at the program level. Institutional student learning outcomes (ISLOs) and assessments are directed by Oregon Tech's Assessment Executive Committee. The Management Department also assesses eight core student learning outcomes (listed below) in accordance with IACBE guidelines, these core student learning outcomes (PSLOs) are assessed and evaluated at both the department level and at the program level.

A description of Oregon Tech's ISLOs and the Management Department's annual assessment report, as submitted to IACBE, may be found on the Oregon Tech website. PSLO and ISLO data, specific to the Management – Operations Management program, are the subject of this report.

Upon completion of this program, Operations Management graduates will be able to:

1. Explain the major concepts in the functional areas of accounting, marketing, finance, and management.
2. Evaluate the legal, social, and economic environments of business.
3. Describe the global environment of business.
4. Describe and explain the ethical obligations and responsibilities of business.
5. Apply decision-support tools to business decision making.
6. Construct and present effective oral and written forms of professional communication.
7. Apply knowledge of business concepts and functions in an integrated manner.
8. Use specialized knowledge in Operations Management to solve business processes.
  - a. Apply knowledge of fundamental concepts of operations management.
  - b. Apply knowledge of approaches to operational performance improvement.

### III. Assessment Cycle

Oregon Tech's ISLOs are assessed on a six-year cycle. The ISLO assessment schedule may be found on the Oregon Tech website under Institutional Student Learning Outcomes.

IACBE requires all accredited institutions to complete a full assessment cycle for all IACBE core student learning outcomes (PSLOs: 1-8) on an annual basis.

### IV. 2014-2015 Assessment Activities

Departmental assessment results for the IACBE core student learning outcomes are reported separately and can be found on the Oregon Tech website under IACBE Public Disclosure of Student Learning. This report presents program level assessment results for the IACBE core student learning outcomes.

#### Direct Assessment #1:

**ETS Major Field Test in Business:** The ETS Major Field Test in Business was administered to graduating seniors, winter term, in their senior project class. The exam was administered in Klamath Falls, Wilsonville, and online.

#### Outcomes Assessed:

1. Explain the major concepts in the functional areas of accounting, marketing, finance, and management.
2. Evaluate the legal, social, and economic environments of business.
3. Describe the global environment of business.
4. Apply decision-support tools to business decision making.

**Performance Target/Criteria:** 80% of students score in the 70<sup>th</sup> percentile or higher.

#### Assessment Results:

Total Test (n=13)		
Scaled Score Range	Percent of Students	Percent Below
172-200	8	90
165	16	81
160	31	70
157	39	62
153	70	51
150	78	42
146	93	31
142	93	21
135	100	10

Table 1: Assessment Results for ETS Major Field Test in Business: Total Test Score by Program

<b>Assessment Indicator Number</b>	<b>Assessment Indicator Title</b>	<b>Percent Below</b>
<b>1</b>	<b>Accounting</b>	<b>47</b>
<b>2</b>	<b>Economics</b>	<b>59</b>
<b>3</b>	<b>Management</b>	<b>84</b>
<b>4</b>	<b>Quantitative Business Analysis</b>	<b>95</b>
<b>5</b>	<b>Finance</b>	<b>42</b>
<b>6</b>	<b>Marketing</b>	<b>49</b>
<b>7</b>	<b>Legal and Social Environment</b>	<b>33</b>
<b>8</b>	<b>Information Systems</b>	<b>97</b>
<b>9</b>	<b>International Issues</b>	<b>46</b>

Table 2: Assessment Results for ETS Major Field Test in Business: Assessment Indicator Score by Program

**Strengths:** Results from the ETS Major Field Test in Business have remained relatively consistent over the years. Our students continually score in the highest percentiles in Information Systems and Quantitative Business Analysis. Given Oregon Tech’s hands-on, technical emphasis, and that all Management programs are required to take a minimum of 10 credit hours in Information Systems, higher scores in Information Systems are unsurprising.

**Weaknesses:**

Students in the Operations Management degree program scored lowest in the areas of Legal/Social Environment and Finance.

It is desired that Operations Management students score better in these assessment areas.

**Action Plans:** Currently, the Management Department’s performance target is that 80% of students will score in the 70<sup>th</sup> percentile or higher on the ETS exam. To date, this target has been unattainable. We believe there are three contributing factors; student attitudes about the exam since the course in which the exam is administered does not have a close connection to the exam, the lack of reinforcement in the senior year regarding several core concepts, and the high scoring target. Starting in 2015, we will be incorporating a different exam, the Comprehensive Exam from the Business Strategy Game as part of the overall assessment within Strategic Management. We hope this shift will help to integrate and reinforce the subject matters as well as the motivation needed for this exam. Based on previous scores, a target score of 50<sup>th</sup> percentile was selected.

**Direct Assessment #2:**

**Comprehensive Case Study:** The comprehensive case study was assessed in BUS 478: Strategic Management. The case study was assessed in Klamath Falls, Wilsonville, and online.

**Outcomes Assessed:**

1. Explain the major concepts in the functional areas of accounting, marketing, finance, and management.
2. Evaluate the legal, social, and economic environments of business.
3. Describe the global environment of business.
4. Describe and explain the ethical obligations and responsibilities of business.
5. Construct and present effective oral and written forms of professional communication.
6. Apply knowledge of business concepts and functions in an integrated manner.
7. Use management processes in an applied organization or business situation.

**Performance Target/Criteria:** 80% of students score a 3 or 4 on each learning-outcome-related performance criteria (using a 1-4 proficiency scale). The faculty rated the proficiency of students using the following criteria for assessment.

**Assessment Results:**

<b>Performance Criteria</b>	<b>Assessment Method</b>	<b>Measurement Scale</b>	<b>Minimum Acceptable Performance</b>	<b>Results</b>
Company Background and Statement of the Business Problem or Issues	Case Study	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	79% (n=19)
Cross-functional Business Analysis	Case Study	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	68% (n=19)
Conclusions	Case Study	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	63% (n=19)

Table 3: Assessment Results for Comprehensive Case Study in BUS 478

**Strengths and Weakness:** Faculty recognizes the need to increase focus on students' ability to synthesize and integrate program learning as well as their ability to use supporting evidence and theories to draw conclusions, across the curriculum, as demonstrated by lower than desired proficiency levels on the comprehensive case study. Moreover, faculty assessing this case has changed which may have led to a change in results.

**Action Plans:** A specific case will be identified and used for assessment purposes, which will relate more to specific learning outcomes. Instructions for the assignment will be refined. The assessment rubric criteria will be revised to offer greater objectivity, and provide greater consistency across Klamath Falls and Wilsonville campuses, and for online learners. We hope to have more than one faculty viewpoint on the assessment, thus will try to have two faculty independently assess this particular case.

**Direct Assessment #3:**

**Senior Project:** The faculty assessed this outcome in BUS 497: Senior Project. The senior project was assessed in Klamath Falls, Wilsonville, and online.

**Outcomes Assessed:**

1. Evaluate the legal, social, and economic environments of business.
2. Describe and explain the ethical obligations and responsibilities of business.
3. Apply decision-support tools to business decision making.
4. Construct and present effective oral and written forms of professional communication.
5. Apply knowledge of business concepts and functions in an integrated manner.
6. Use management processes in an applied organization or business situation.

And, as applicable:

7. Apply knowledge of fundamental concepts of operations management.
8. Apply knowledge of approaches to operational performance improvement.

**Performance Target/Criteria:** 80% of students score a 3 or 4 on each learning-outcome-related performance criteria (using a 1-4 proficiency scale). The faculty rated the proficiency of students using the following criteria for assessment.

**Assessment Results:**

<b>Performance Criteria</b>	<b>Assessment Method</b>	<b>Measurement Scale</b>	<b>Minimum Acceptable Performance</b>	<b>Results (n=3)</b>
Project Objective - Identification	Final project	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	67%
Organization Environment - Context	Final project	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	67%
Project Management - Process	Final project	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	33%
Project Completion – Product	Final project	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	0%
Culminating Experience	Final project	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	0%
Written Communication of Results	Final project	1 – 4 Proficiency Scale	80% achieve 3 or 4 rating	67%
Oral Communication of Results	Final project	1 – 3 Proficiency Scale	80% achieve rating of 3 on all 6 performance criteria	33%

Table 4: Assessment Results for Senior Project in BUS 497

**Strengths and Weaknesses:** The rubric performance criteria are now uniform across all Management programs, however, performance criteria definitions vary by program enabling the department to report broadly at the department level while also assessing program-specific learning by major.

Department faculty have added several new processes and procedures as part of the senior experience curriculum. Similarly, to further support and reinforce these standards and expectations, all senior experience final reports are now evaluated by at least two program faculty. All program faculty are expected to participate in a comprehensive discussion reviewing and discussing demonstrated student learning within their programs. Increasing faculty involvement in the senior

experience, across the department, has not only helped reallocate faculty resources dedicated to the senior experience courses, it has increased faculty awareness of student capabilities as they leave our programs, while also communicating to students the importance of the learning that occurs during the experience. A last, department-wide improvement, again reinforcing senior experience standards and expectations, is to require all seniors to present their projects in multiple venues. Students will be expected to present their projects to students in their majors, to faculty, and to their project sponsors.

Aside from the assessment-related changes made within the senior experience curriculum, faculty recognized the need to increase focus on students' ability to synthesize and integrate program learning as well as their ability to use supporting evidence and theories to draw conclusions as demonstrated by lower than desired proficiency levels on the senior experience intended student learning outcomes. To address this particular weakness faculty are participating in a comprehensive review of the Department's intended student learning outcomes and where they are taught within program curricula as described previously in this report.

The project management process and achievement of project objectives represent opportunities for improvement. Weaknesses in this area were derived from application of the DMAIC (define, measure, analyze, improve, control) methodology for project management. The dmaic criteria and expectations differ somewhat from the senior project criteria and expectations.

**Action Plans:** In addition to the above changes, the following changes will take place for next year's senior project sequence: An additional BUS495 course added to aid students in identifying their project. This class will focus on improving student's networking skills along with identifying a project that focuses on their major and individual career goals. Additionally, project management and research methods will be Management faculty will be prerequisites for all senior projects. Students are required to identify and work with a program faculty "mentor" throughout their senior experience. A review and update of senior project criteria to ensure projects are closely matched to a student's major. Faculty will partner with the library to aid students in research as well as citation skills. Lastly, more structure will be placed on the project assignments to more closely align with senior project assessment rubric.

Develop and/or modify senior project criteria for students in Operations Management that choose to apply the DMAIC methodology.

**Indirect Assessment #1: Senior Exit Survey:** Seniors were invited to complete an exit survey, spring 2015. The survey asked students to rate how well the Management Department prepared them with regards to intended student learning outcomes and corresponding competencies. The senior exit survey was administered in Klamath Falls, Wilsonville, and online.

**Outcomes Assessed:**

1. Explain the major concepts in the functional areas of accounting, marketing, finance, and management.
2. Evaluate the legal, social, and economic environments of business.
3. Describe the global environment of business.
4. Describe and explain the ethical obligations and responsibilities of business.
5. Apply decision-support tools to business decision-making.
6. Construct and present effective oral and written forms of professional communication.
7. Apply knowledge of business concepts and functions in an integrated manner.
8. Use management processes in an applied organization or business situation.
  - a. Manage people, processes, and resources within a diverse organization.
  - b. Apply knowledge of key leadership concepts in an integrated manner.
  - c. Identify and evaluate business opportunities and trends.
  - d. Identify potential start-up models and resources given trends and opportunities.

**Performance Target:** 80% of students score a 4, 5, or 6 on each learning-outcome-related performance criteria (using a 1-6 proficiency scale).

**Assessment Results:**

**Senior Exit Survey Results for the Operations Management program  
by Student**

Program-specific learning outcomes	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Fundamental area of accounting	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	86% (n=14)
Fundamental area of marketing	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	79% (n=14)
Fundamental area of finance	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	86% (n=14)
Fundamental area of management	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	93% (n=14)

<b>Legal, social, and economic environments of business</b>	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	79% (n=14)
<b>Global environment of business</b>	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	93% (n=14)
<b>Ethical obligations and responsibilities of business</b>	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	93% (n=14)
<b>Apply decision-support tools to business decision making</b>	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	100% (n=14)
<b>Construct and present effective oral and written forms of professional communication</b>	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	93% (n=14)
<b>Apply knowledge of business concepts and functions in an integrated manner</b>	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	93% (n=14)
<b>Fundamental concepts</b>	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	100% (n=14)
<b>Operational performance improvement</b>	Student rating	1-6 Scale	80% of graduates indicate a 4, 5, or 6 rating	100% (n=14)

Assessment Results for the Management – Entrepreneurship/Small Business Management Option PSLOs from Senior Survey

**Strengths and Weaknesses:** Students tend to self-report higher levels of proficiency in all areas on the senior exit survey as compared to direct assessment results reported out on the ETS exam, comprehensive case study and senior project. Better response rates were attained this year.

**Action Plans:** During the spring 2014 administration of the ETS exam, the Department was able to attain exam results by major which makes it possible for faculty to measure student performance on specific ETS Assessment Indicators which closely align with the Management Department’s intended student learning outcomes and senior exit survey performance criteria. This additional information will facilitate faculty discussions regarding expected performance targets on specific assessment indicators and student’s self-perceptions of understanding on the same criteria. As gaps in performance are identified, faculty will evaluate curricular changes to address deficiencies in student learning.

Program growth is also desired. To support ongoing efforts to grow enrollment in all Management programs, the department formed a Marketing Committee fall 2014. These committees identify specific strategies in the areas of recruiting, including faculty strategies, admissions strategies, as well as marketing initiatives.

### **Indirect Assessment #2:**

**Focus Group:** A senior focus group, facilitated spring 2015, collected student feedback regarding program curricula.

### **Outcomes Assessed:**

1. Explain the major concepts in the functional areas of accounting, marketing, finance, and management.
2. Evaluate the legal, social, and economic environments of business.
3. Describe the global environment of business.
4. Describe and explain the ethical obligations and responsibilities of business.
5. Apply decision-support tools to business decision-making.
6. Construct and present effective oral and written forms of professional communication.
7. Apply knowledge of business concepts and functions in an integrated manner.
8. Use management processes in an applied organization or business situation.

**Performance Target:** 80% of students respond positively regarding their learning experience.

**Assessment Results:** The Management Department hosted focus group sessions, spring 2015; A majority of students participated. Students were asked to respond to 12 questions.

As most valuable courses, students identified MGT 321/322: Operations Management, MGT 461/462/463: Lean Management, BUS 457: Research Methods, ANTH 452, Globalization, and PHIL 331: Ethics in the Professions. Students stated that these courses were relevant, interesting, and closely aligned with their career path. Faculty experience was also noted as adding to course value. These identified courses completely differ from the 2014 focus group responses. To be considered valuable, students emphasized that a course must reach beyond the textbook and incorporate real-world examples.

Among courses not considered valuable was BUS478: Strategic Management and MATH371 (Finite Math/Calculus), and MGT 323: Operations Management.

These classes were not consistent with previous focus groups. Those courses that were considered less valuable were perceived by students as requiring a lot of “busy work” with little real-world, value-added application that focused on their major.

Students responded positively to their senior project experience. Students appreciated the real-world experience, they enjoyed interacting with business owners and learning to work with clients, and they, overall, found the projects challenging yet rewarding.

Students cited industry-trained faculty and breadth of the curriculum as the greatest strengths of the program. Technology focused course, small class sizes and student to faculty ratios were also strengths.

Overall, students felt that the Management degrees exposed them to relevant theory, taught job-related skills, and emphasized real-world application. Students expressed confidence in their ability to attain employment in their chosen field.

**Strengths and Weaknesses:** Focus group participation rates have improved since they are now integrated into senior course. Although many consistencies are seen from focus groups, the questions related to courses seem to yield completely different results from year to year- questioning the value of this specific assessment.

**Action Plans:** Opportunities to run online focus groups are being explored.

## V. **Summary of Student Learning**

Students of Operations Management are well-equipped in quantitative approaches and problem solving in management. The required courses that significantly contribute to providing this foundation include MGT 321, MGT 461, MGT 462 462, MIS 375, and BUS 457. The program will continue to leverage these courses going forward.

Students of Operations Management are equipped in approaches to management with some opportunity for improvement. The required courses that can significantly contribute to providing a stronger managerial foundation include MGT 322, MGT 323, MGT 335, MGT 463, and the new course sequence MGT 421, 422, and 423.

Students of Operations Management are somewhat lacking in international, legal/social considerations in management.

## **VI. Changes resulting from assessment**

### **Closing the loop:**

#### **PSLO and ISLO Assessments**

Overall, Operations Management students demonstrate proficiency in all program and institutional areas assessed during the 2014-2015 assessment cycle. Discussions regarding rubric and performance criteria development, as well as efforts to better align assessment activities with outcomes are on-going for both classroom-based courses and online courses. The 2014-15 PSLOs are scheduled to be reassessed in 2015-16.

The Management Department assesses student learning at three levels: at the institutional level, at the department level, and at the program level. Institutional student learning outcomes (ISLOs) and assessments are directed by Oregon Tech's Assessment Executive Committee with one or two ISLOs assessed each year. For the past seven years the Management Department conducted department-level assessment (SLOs) in accordance with IACBE guidelines and program-level assessment (PSLOs) in accordance with Northwest's Commission on Colleges and Universities (NWCCU) guidelines.

Given changes to IACBE's accreditation process since Oregon Tech's last accreditation review, the Management Department revised its IACBE Outcomes Assessment Plan based upon recommendations by IACBE staff. Previously, PSLO assessment occurred throughout the Management programs, not necessarily at the program exit. To better align with IACBE expectations the department now assesses all PSLOs at the program exit such that, at both the department level and at the program level, the Management Department assesses eight core student learning outcomes (SLOs) annually in accordance with IACBE guidelines. The assessment data reported in this annual report reflect this assessment approach.

During the spring and fall 2015 faculty retreats, the department streamlined the Department program outcomes and common core. IACBE allowed for this change under new guidelines. The department reduced the eight SLOs down to five. The goal is for more clearly stated performance criteria that will improve understanding of student achievement as related to the intended student learning outcomes. Changes and improvements from the as well as action plans, identified within this self-study, reflect this broader perspective and more holistic approach to student learning, emphasizing not only specific knowledge and skills but also synthesis and integration of theory with practice. Management identified three program learning outcomes specific to management.

### **ISLO Assessment**

Oregon Tech, at the institutional level, chose to forego the ISLO cycle for the 2014/15 year and instead participated in a nation-wide pilot assessment. This decision was, in part, made because of the continued work being done in the revision of the institutional student learning outcomes as a result of efforts made by the General Education Review Task Force.

### **Indirect Assessment**

To address student concerns regarding career prospecting faculty surveyed advisory board members, hosted the Annual Career Month, and added BUS 495: Senior Project Proposal to the Operations, Marketing and Entrepreneurship/Small Business Management curriculum.