GEOMATICS DEPARTMENT
GIS OPTION
Oregon Institute of Technology
NWCCU Assessment Report
2017-2018 Academic Year

1. Program Introduction

1.1 Program History

Geomatics education has been offered virtually since the inception of the Oregon Institute of Technology with an associate degree in Surveying initiated in 1951. The program was accredited by the Engineer's Council on Professional Development (ECPD) in 1953. ECPD is now recognized as ABET. A baccalaureate Surveying Technology degree was offered in 1966, and accredited by TAC-ABET in 1970. The program was one of the first two Bachelors of Science surveying programs in the nation to receive RAC-ABET accreditation in 1984. The geomatics program has enjoyed 62 years of continuous accreditation under ABET or its predecessor, ECPD. Oregon Tech can be proud of having the oldest BS Geomatics program in the nation. The program degree title was officially chan

1.3 Recent Number of Graduates

A summary of the number of geomatics degrees (GIS option) awarded for the last 5 years is shown below.

Fall Terms	Year (2013-14)	Year (2014-2015)	Year (2015-2016)	Year (2016-2017)	Year (2017-2018)
Students	5	1	2	2	1

Reported values represent graduations as recorded by Oregon Tech Institutional Research for the Geomatics-GIS Option

Table 1.2 – Geomatics – GIS Option degrees awarded

1.4 Employment Rates and Salaries

This question was dropped from the 2016-17 senior exit survey and reinstated in the 2017-18 survey. Graduates reported a salary range from $42,000 to $64,000 for initial starting salary. 67% of students indicated that they also received a signing bonus but did not indicate the value of these bonuses.

2. Program summary

2.1 Geomatics Department Mission, Objectives, and Program Student Learning Outcomes (PSLOs)

On September 20, 2017 the Geomatics department faculty met and reviewed the department mission, program educational objectives (PEOs) and Program Student Learning Objectives (PSLOs) listed below. Faculty affirmed that the department mission, PEOs, and PSLOs still meet the goals of the program.

Department Mission

The mission of the Geomatics Department is to provide students with fundamental knowledge and skills in the geomatics and GIS disciplines. The Surveying Option prepares students to pass the Fundamentals of Surveying (FS) examination and pursue licensure as a registered Professional Land Surveyor (PLS). The GIS Option prepares students to become certified GIS Professionals. All students learn the professional responsibility of protecting the health, safety and welfare of the public, and become aware of global and cultural issues.

Program Educational Objectives

Program educational objectives are statements that describe the expected accomplishments of graduates during the first few years after graduation—usually 3-5 years. These objectives are consistent with the mission of the program and the institution.

Graduates of the Oregon Tech Geomatics Options will:

1. Acquire the ability to obtain professional licensure and/or certifications in the geospatial industry.
2. Advance in the geospatial industry during their career by becoming involved in local, state, national, or international professional organizations.
3

2.2 GIS Option Student Learning Opportunities

Geomatics student professional learning opportunities include:

1. Geomatics Student Club community service activities. Each year, students in the Geomatics Club are encouraged to take on survey/GIS related projects that benefit the community. These projects provide the students with exposure to real-world projects, negotiation and fulfillment of a specific scope of work, and the opportunity to work with other disciplines.
2. The National Society of Professional Surveyors (NSPS) (formerly the American Congress of Surveying and Mapping) national student surveying competition. Geomatics students organize each year, and begin a fundraising drive to supplement funding provided by professional organizations.
3. Professional Land Surveyors of Oregon (PLSO) annual conference. Students volunteer as runners to assist with conference details, attend technical paper presentations, and staff the OREGON TECH Geomatics department booth.
4. GME 468 Geomatics Practicum. Students are responsible for completing a number of community service projects for city, county, state, and federal agencies.
5. Industry speakers are invited to make presentations at the PLSO Student Chapter meetings.
6. Students are encouraged to participate in international organizations such as the International Federation of Surveyors (FIG).
7. Oregon Tech annual workshop staffed by Bureau of Land Management (BLM) speakers.

3. Summary of Six-Year Assessment Cycle

Table 3.1 shown below depicts the six year PSLO/ISLO assessment cycle for the geomatics survey option. Table 3.1 indicates the PSLO/ISLO a

4. Summary of Current Academic Year Assessment Activities

4.1 Matrix

Students were assessed on a 1 to 5 scale with a 1 being unsatisfactory and a 5 being superior. The department goal is that 70% or more of the students receive a 4 or 5 rating in the areas of quality, quantity, timelines, and level of work.

Departmentally Expected Score:

For PSLO (h), the geomatics department expects that 70% or more of students evaluated will score a 4 or 5 in each assessed category.

Assessment Results:

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Create a brief using the IRAC Method	Instructor Evaluation	1-5	70%	100%
Present briefing to class	Instructor Evaluation	1-5	70%	86%

The student will

1. Identify new geomatics technologies and how they are impacting/changing the construction industry.

Students are rated on the following:

0. Scored less than 70% on the homework assignment.
1. Scored higher than 70 % on the homework assignment.

Departmentally Expected Score:

For PSLO (j), the geomatics department expects that 70% or more of students evaluated will score a “1”.

Assessment Results:

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Exam question answered correctly	Exam Question	0 or 1	70% of class scores a 1	100%

Number of students assessed = 7

Table 4.3 – Student performance on PSLO (j) in GME 351 Spring Quarter, 2018

Actions to be taken

As the scores in all categories exceeded the departmentally established minimum of 70%, no actions will be taken for this PSLO at this time.

4.2.5 PSLO (j) – “A knowledge of contemporary issues” – GME 466 – Legal Aspects of Land Surveying II

Performance Criteria:

Students in GME 466 are required to write a research paper on a current issue of boundary law. The assignment requires selection of a current issue in boundary law and legal research to determine current court opinion on the topic.

Students must demonstrate the following:

1. Proper grammar and writing mechanics.

Actions to be taken

As the scores in all categories exceeded the departmentally established minimum of 70%, no actions will be taken for this assessment.

4.2.6

Performance Criteria:

During the quarter, students in GME 351 learn a variety of techniques and tools for the computation of points for construction layout. Students learn how to prepare layout points from manual calculations, field computer software and in CAD. The student's final exam requires them to take a plan and profile drawing of a sanitary sewer line and calculate out the appropriate reference points for field layout.

Students are rated on the following:

Students must be able to calculate the required layout points using the techniques developed in class. The department expects that 70% or more of students in the class will score a 70% or higher on the final exam.

[redacted]

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results

[redacted]

2. Organization must be sufficient to move the audience through the report with ease, provide information in a logical order, and give adequate conclusions to tie the paper together.
3. Style must be professional
4. Documentation must follow the APA style and provide references for all of the research materials utilized in the paper

Students are rated on the following scores:

1. Poor
2. Significantly below average
3. Slightly below average
4. Average
5. Above average

Departmentally Expected Score:

For PSLO (g), the geomatics department expects that 70% or more of students evaluated will score a 4 or 5 in all categories.

Assessment results:

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Sufficient Research	Research Paper	1 to 5scale	70%	100%

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Figure 4.2 – Senior exit survey results for student individual feeling of preparation for each PSLO. Graph represents results of spring 2017 survey.

Assessment Results

Review of the 2016/17 student self-evaluation of preparation in the program student learning outcomes shows that students scored themselves below the departmentally established 70% on PSLOs d, f, g, h, and j. As a result of this low scoring, faculty increased their effort to explain the connection between individual classes, the overall program curriculum, and the PSLOs. This improved the student's view of how well that they feel they are prepared for each of the PSLOs. The lowest scores were 80% in the PSLOs c, g, h, and j. All other PSLOs were at the 100% level indicated that the students in the 2017/18 class felt either highly prepared or prepared for the outcome.

Actions to be taken

Faculty will continue to tie PSLOs to class work to help students understand how what they learn in the classroom is related to the overall program objectives. The 2018 results will be compared to the 2019 results to see if scores can be further imporved.

5. Evidence of Student Learning

score. After group scoring, faculty will decide if additional measures may need to be made in order to improve student writing and public speaking capabilities.

6. "Closing the Loop" – Changes Resulting from Assessment

The following is a summary of areas identified during the last assessment cycle as areas that need additional monitoring or improvement:

Senior Exit Survey - The 2017 senior exit survey showed a drastic reduction in student perceived preparedness for PSLOs, d, f, g, h, and j. Faculty incorporated more discussion of the a-k outcomes in class discussions. The results for the 2017/18 assessment show a marked improvement over those in the 2016/17 assessment. This assessment will continue to be monitored and effort will continue to try and improve the results.

7. References

1. Oregon Institute of Technology. Institutional Research Home Page. June 9, 2011 <http://www.Oregon Tech.edu/ir>

8. Appendices

Geomatics – GIS Option
Appendix A - PSLO Curriculum Map
2017/2018

Shaded courses indicate that the PSLO is taught in the course and that students are evaluated on the outcome.

PSLO (h) “The broad education necessary to understand the impact of solutions in a global and societal context.”

	Freshman		Sophomore		Junior		Senior	
Fall	GIS 103		GME 163		GIS 306		BUS 304	
	GME 161		GME 241		GME 343		GME 425	
	MATH 112		MATH 254N		MIS 113		GME 451	
	WRI 121		PHY 221		MATH 361		MIS 118	

PSLO (k) "An ability to use the techniques, skills, and modern scientific and technical tools necessary for professional practice"

Shaded courses indicate that the PSLO is taught in the course and that students are evaluated on the outcome.

	Freshman		Sophomore		Junior		Senior	
Fall	GIS 103		GME 163		GIS 306		BUS 304	
	GME 161		GME 241		GME 343		GME 425	
	MATH 112		MATH 254N		MIS 113		GME 451	
	WRI 121		PHY 221		MATH 361		MIS 118	
					Social Science Elec.			
Winter	CE 203		GME 242		GIS 316		GME 452	
	GIS134		GME 264		GME 444		GME 454	
	GME 175		PHY 222		GME 466		Science Elec.	
	MATH 251		WRI 227		MATH Elec.		Social Science Elec..	
	WRI 122		Social Science Elec.		GME/GIS/ENV Elec.			
Spring	GIS 205		GME 351		BUS 226		GME 468	
	GME 162		GME 372		MGT 345		Business Elec.	
	MATH 252		PHY 223		SPE 321		Humanities Elec.	
	SPE 111		Humanities Elec.		WRI 327		Science Elec.	
	Social Science Elec				Humanities Elec.			