# SURVEYING & GEOMATICS TRANSFER, AS
## OIT ADVISING GUIDE

**Prerequisites and Course Availability per Term**

*(for complete information, see 2017-2018 UCC Catalog)  REvised 01/02/17*

<table>
<thead>
<tr>
<th>UCC Course No. and Course Name</th>
<th>Term Offered</th>
<th>Credits</th>
<th>OIT Course No.</th>
<th>Credits</th>
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<td></td>
<td><strong>TOTAL ARTICULATED CREDITS</strong></td>
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**Program Advisor:**

1. One of the Arts & Letters or Social Science Elective must also meet the UCC Cultural Literacy Requirement

## ADDITIONAL CLASSES THAT CAN BE TAKEN AT UCC

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<tr>
<th>UCC Course No. and Course Name</th>
<th>Term Offered</th>
<th>Credits</th>
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**TOTAL ARTICULATED CREDITS** 133

**TOTAL DEGREE CREDITS** 99

Last updated 1/2/2017
Umpqua Community College  
Associate of Science degree in Surveying and Geomatics  
to  
Oregon Institute of Technology  
Bachelor of Science in Geomatics, Surveying Option  

**Articulation Agreement**  
2016 - 2017 Catalog  

It is agreed that students transferring from Umpqua Community College (UCC) with the Certificate in Geographic Information Systems or with select courses below to Oregon Institute of Technology’s (Oregon Tech) Bachelor of Science in Geomatics, Surveying Option (GMS) program will be given full credit for all selected courses listed below. This agreement is based on the evaluation of the rigor and content of the general education and technical courses at both UCC and Oregon Tech, and is subject to a yearly reevaluation by both schools for continuance. This agreement is dated __________, 2016.

Baccalaureate students must complete a minimum of 60 credits of upper-division work before a degree will be awarded. Upper-division is defined as 300-and 400-level classes at a bachelor's degree granting institution. Baccalaureate students at Oregon Tech must complete 45 credits from Oregon Tech before a degree will be awarded.

Students are responsible for notifying the Oregon Tech Admissions and Registrar’s Office when operating under an articulation agreement to ensure their credits transfer as outlined in this agreement. In order to utilize this agreement students must be attending Umpqua Community College during the above catalog year. Students must enroll at Oregon Tech within three years of this approval.

By ____________________________
Jesse Morrow, Dean of Career and Technical Education  
Umpqua Community College

By ____________________________
Marla R. Edge  
Director, Academic Agreements  
Oregon Institute of Technology

By ____________________________
David Farrington  
Registrar  
Umpqua Community College

By ____________________________
Wendy Ivie  
University Registrar  
Oregon Institute of Technology

By ____________________________
Clay Baumgartner  
Department Chair, Engineering and Surveying  
Umpqua Community College

By ____________________________
Jack A. Walker  
Chair, Geomatics  
Oregon Institute of Technology
<table>
<thead>
<tr>
<th>Umpqua Community College Course Number &amp; Title</th>
<th>Qtr. Units</th>
<th>Oregon Institute of Technology Course Number &amp; Title</th>
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<td>CE 203 Engineering Graphics</td>
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<td>GIS 203 The Digital World and Geospatial Concepts</td>
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<td>GIS 103 The Digital Earth</td>
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<td>GIS 205 GIS Data Integration</td>
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<td>SUR 162 Plane Surveying II</td>
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<td>GME 162 Plane Surveying II</td>
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<td>GME 163 Route Surveying</td>
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<td>SUR 242 Land Description and Cadastre</td>
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<td>ENV/GIS/GME Elective</td>
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<td>CIV 214 CAD Civil 3D and</td>
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<td>ENGR 111 Orientation to Engineering I</td>
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<td>Does not count toward Oregon Tech GMS degree¹</td>
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<td>MTH 243 Intro to Probability &amp; Statistics²</td>
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<td>MTH 254 Vector Calculus I</td>
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<td>PHY 213 General Physics (Calculus)</td>
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<td>SP 111 Fund of Public Speaking</td>
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<td>WR 121 English Comp: Intro to Argument</td>
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<td>WR 122 English Comp: Style &amp; Argument</td>
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<td>Social Science elective⁵</td>
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<td><strong>Total UCC Credits¹</strong></td>
<td><strong>99</strong></td>
<td><strong>Total Oregon Tech Degree Credits</strong></td>
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Courses not required for UCC’s Surveying and Geomatics degree but are required for Oregon Tech’s Bachelor of Science in Geomatics, Surveying Option and can be taken at UCC or Oregon Tech.

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tr>
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Total UCC additional credits¹: 34

Total UCC credits¹: 133

Total Oregon Tech Additional credits: 32

Total Oregon Tech credits: 112

Courses listed below are also required for the Bachelor of Science in Geomatics, Surveying Option, to be taken at Oregon Tech.

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<td>GME 343 Boundary Surveys</td>
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<td>GME 351 Construction/Engineering Surveying</td>
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<td>GME 372 Subdivision Planning and Platting</td>
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<td>GIS 306 Geospatial Raster Analysis</td>
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<td>GME 444 Adjustment by Least Squares</td>
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<td>GME 451 Geodesy</td>
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<td>GME 466 Boundary Law II</td>
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1. Excess credits will transfer to Oregon Tech as general electives with the exception of developmental course work; however these credits will not count towards the GMS degree.
2. Does not count toward upper-division requirement.
3. Oregon Tech requires 9 humanities credits. Choose from UCC’s prefixes ART, ENG, MUP, MUS, PHL, R, TA or second year languages. However, only 3 humanities credits can be studio/performance based.
4. Students can transfer up to 6 credit hours of Social Science electives. Choose from the following UCC course prefixes: ANTH, CLA, EC, GEG (except 105), HST, PS, PSY, SOC, SSC, and WS, or other courses designated as Social Science electives by the Oregon Tech Registrar’s Office.
5. Students can transfer up to 4 credit hours of science electives into the GMS program; these courses should be designated as science electives by Oregon Tech. Choose from the following UCC prefixes: BI, CHEM, GI, GS, or PH. Please note Oregon Tech does not grant science credit for computer science courses.
6. Baccalaureate students must complete a minimum of 60 credits of upper-division work before a degree will be awarded. Upper-division is defined as 300- and 400-level classes at a bachelor’s degree granting institution.
7. Oregon Tech’s Bachelor of Science in Geomatics, Surveying Option requires 180 total credits.
Bachelor of Science in Geomatics, Surveying Option
Curriculum
Required courses and recommended terms during which they should be taken:

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<th>Course Name</th>
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<tbody>
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* Students must demonstrate advancement in educational content, courses must not be lower level than courses in the required curriculum. MATH 341 or MATH 362 recommended.
** GEOL 201 Physical Geology recommended. Note: Humanities and Social Science Electives must be approved by the department.

Total credits required for B.S. in Geomatics, Surveying Option: 180

Bachelor of Science in Geomatics, Geographic Information Systems (GIS) Option
Geographic Information Systems (GIS) is a systematic approach to the management, analysis, and display of geographic information. Although the management of such information often times requires the application of advanced RDBMS techniques, the ability to see a project through to completion requires fundamental project management skills as well. The analysis of geodatasets is predicated on a firm understanding of spatial reference/coordinate systems, topological relationships, and statistical methods. Techniques for displaying geographic information take various forms such as maps, geographic datasets, and data models. Students graduating from this course of study will understand how to manipulate geographically based data in order to solve geospatial problems.

Students learn in a project-based environment how to manage the flow of data through the project in terms of data acquisition, processing, analysis, and presentation. Within the GIS option, students are able to select individual areas of focus based on independent study and/or online courses.

Career Opportunities
The list of opportunities for students in the field of GIS has been, and is continuing to show substantial growth. As our society becomes more data centered, the importance of understanding the spatial location of this data and its spatial relationship to other data is becoming increasingly apparent. Understanding such geospatial relationships is fundamental to areas such as health care, land records management, transportation modeling, environmental engineering/science, and urban planning, to name only a few. Local, state, and federal agencies are embracing GIS more each year as these agencies realize that GIS is the appropriate tool to solve long-standing geospatial problems. Private industry is also embracing GIS since it can be used to streamline delivery and/or response routes. Both private and public entities have also realized that GIS provides an excellent decision support framework structure.