## DEGREE CHECKLIST

**BACHELOR OF SCIENCE (BSc Spec Hons)**

**EARTH & ATMOSPHERIC SCIENCE**

Specialized Honours (Geomatics Science Stream)

### COURSES

#### First Year Courses

- **Le/EECS 1012** 3.00  
  Net-Centric Introduction to Computing
- **Le/EECS 1541** 3.00  
  Introduction to Computing for the Physical Sciences
- **Le/ESSE 1010** 3.00  
  The Dynamic Earth and Space Geodesy
- **Le/ESSE 1011** 3.00  
  Introduction to Atmospheric Science
- **SC/MATH 1013** 3.00  
  Applied Calculus I
- **SC/MATH 1014** 3.00  
  Applied Calculus II
- **SC/MATH 1025** 3.00  
  Applied Linear Algebra
- **SC/PHYS 1011** 3.00  
  Physics I
- **SC/PHYS 1012** 3.00  
  Physics II

#### Second Year Courses

- **Le/ESSE 2030** 3.00  
  Geophysics and Space Science
- **Le/ESSE 2615** 3.00  
  Fundamentals of Geomatics Engineering
- **Le/ESSE 2620** 3.00  
  Fundamentals of Surveying
- **Le/ESSE 2630** 3.00  
  Field Surveys
- **Le/ESSE 2640** 3.00  
  Adjustment Calculus
- **SC/MATH 2015** 3.00  
  Applied Multivariate & Vector Calculus
- **SC/MATH 2271** 3.00  
  Differential Equations for Scientists and Engineers
- **SC/MATH 2930** 3.00  
  Introductory Probability and Statistics
- **SC/PHYS 2020** 3.00  
  Electricity and Magnetism

#### 3 credits of Non-Science Requirements

**Note:** for students transferring into the EATS program, the following are acceptable substitutes for the 6 credit foundational science (physics) requirement: **SC/PHYS 1800** 3.00 and **SC/PHYS 1801** 3.00; or **SC/ISCI 1310** 6.00; or **SC/ISCI 1301** 3.00 and **SC/ISCI 1302** 3.00; or any of the following with a minimum grade of C in each course: **SC/PHYS 1410** 6.00; **SC/PHYS 1420** 6.00; **SC/PHYS 1411** 3.00 and **SC/PHYS 1412** 3.00; **SC/PHYS 1421** 3.00 and **SC/PHYS 1422** 3.00.
### COURSES

<table>
<thead>
<tr>
<th>Third Year Courses</th>
<th>Credits Earned</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>LE/ESSE 3600 3.00</td>
<td>Geographical Information Systems (GIS) and Spatial Analysis</td>
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<tr>
<td>LE/ESSE 3610 3.00</td>
<td>Geodetic Concepts</td>
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<tr>
<td>LE/ESSE 3650 3.00</td>
<td>Photogrammetry</td>
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<tr>
<td>LE/ESSE 3670 3.00</td>
<td>Global Navigation Satellite Systems</td>
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<tr>
<td>LE/ESSE 4020 3.00</td>
<td>Time Series and Spectral Analysis</td>
<td></td>
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<tr>
<td>LE/ESSE 4220 3.00</td>
<td>Remote Sensing of the Earth’s Surface</td>
<td></td>
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<tr>
<td>3 credits of Non-Science Requirements</td>
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<tr>
<th>Fourth Year Courses</th>
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<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>LE/ESSE 4600 3.00</td>
<td>Geographical Information Systems (GIS) and Data Integration</td>
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<tr>
<td>18 Additional Credits from the list below (for a total of 24 credits from the list):</td>
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<tr>
<td>LE/ESSE 3630 3.00, LE/ESSE 3640 3.00, LE/ESSE 3660 3.00, LE/ESSE 4000 3.00, LE/ESSE 4000 6.00, LE/ESSE 4615 3.00, LE/ESSE 4620 3.00, LE/ESSE 4630 3.00, LE/ESSE 4640 3.00, LE/ESSE 4650 3.00, LE/ESSE 4660 3.00, LE/ESSE 4670 3.00, LE/ESSE 4680 3.00, LE/ESSE 4690 3.00, LE/ESSE 4695 3.00</td>
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<tr>
<td>9 Elective credits</td>
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**A. General Education Requirement:**
- non-science requirement: 12 credits;
  - mathematics: SC/MATH 1013 3.00; SC/MATH 1014 3.00;
  - computer science: LE/EECS 1011 3.00 or LE/EECS 1541 3.00;
- foundational science: SC/PHYS 1011 3.0 and SC/PHYS 1012 3.0 (see approved course substitutes for transfer students);

**B. Major Requirements**
the EATS program core, as specified above (19 credits);

**C. Science breadth:**
Science breadth: satisfied by above requirements.

**D. Upper level requirement:**
A minimum of 42 credits at the 3000 level or higher.

**E. Additional elective credits, as required,** for an overall total of 120 credits.

**F. Standing requirements:** a minimum cumulative credit-weighted grade point average of 5.00 (C+) over all courses completed.

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All Honours BSc degree candidates are encouraged to participate in the Coop Program or complete a non-credit industrial internship (normally salaried). This provides experience in a four-month to 12-month placement, normally after the third year of study.

**TOTAL CREDITS & CGPA (minimum overall GPA of 5.00 required to graduate in a BSc Honours program)**

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