Applied Computing – Geomatics Program Description

Note: This program description is temporary until the official University of Saskatchewan Course and Program Catalogue is published for the 2022-2023 academic year (Winter 2022). ***Program requirements are subject to change up to that point.***

	Bachelor of Science Four-year (B.Sc. Four-year) – Applied Computing - Geomatics No more than 6 credit units from one subject may be used in Requirements C1, C2, and the Junior Course Requirements in C3.	**Bachelor of Science Honours (B.Sc. Honours) – Applied Computing** Students interested in entering an Honours program should consult advisors in the department concerned before registering for their second year. Of the 120 credit units required for the B.Sc. Honours degree, at least 66 credit units must be at the senior level. Application for admission to Honours is not considered until successful completion of at least 60 credit units with a Cumulative Weighted Average of at least 70% overall and at least 70% in the subject of Honours. For further details, please see the Academic Information and Policies section. No more than 6 credit units from one subject may be used in Requirements C1, C2, and the Junior Course Requirements in C3.
C1 College Require-ment (15 credit units)	**English Language Writing** Choose **6 credit units** from the following: • *Full list*	**Indigenous Learning** Choose **3 credit units** from the following: • *Full list* **Quantitative Reasoning** • MATH 163.3 Introduction to Mathematical Reasoning • MATH 164.3 Introduction to Linear Algebra
C2 Breadth Require-ment (6 credit units)	Choose **6 credit units** from the following areas: Fine Arts Humanities Social Sciences Courses with No Program Type	
C3 Cognate Require-ment (12 credit units)	**(12 credit units)** **Junior course requirements:** Choose **9 credit units** from the following: *Biology* • BIOL 120.3 • BIOL 121.3 *Chemistry* • CHEM 112.3	

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- CHEM 115.3
- CHEM 250.3

Earth Science

- GEOG 120.3
- GEOL 121.3
- GEOL 122.3

Physics & Astronomy

- ASTR 113.3
- PHYS 115.3
- PHYS 117.3 or PHYS 125.3

Senior course requirements:

- PHIL 232.3 Ethics and Professional Responsibility in Computer Science
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<tr><td>**C4 Major Require-ment**</td><td>

(60 credit units)

- CMPT 141.3 Introduction to Computer Science
- CMPT 145.3 Principles of Computer Science
- CMPT 260.3 Mathematical Logic and Computing
- CMPT 270.3 Developing Object Oriented Systems
- CMPT 280.3 Intermediate Data Structures and Algorithms
- CMPT 318.3 Data Analytics
- CMPT 384.3 Information Visualization
- CMPT 487.3 Image Processing and Computer Vision
- GEOG 222.3 Introduction to Geomatics
- GEOG 322.3 Introduction to Geographic Information Systems
- GEOG 302.3 Quantitative Methods in Geography
- GEOG 323.3 Remote Sensing
- STAT 245.3 Introduction to Statistical Methods

Choose **3 credit units** from the following:

- GEOG 120.3 Introduction to Global Information Systems
- GEOG 125.3 Environmental Science and Society
- GEOG 130.3 Environment Health and Planning

Choose **12 credit units** from the following, from any of the three areas:

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(63 credit units)

- CMPT 141.3 Introduction to Computer Science
- CMPT 145.3 Principles of Computer Science
- CMPT 260.3 Mathematical Logic and Computing
- CMPT 270.3 Developing Object Oriented Systems
- CMPT 280.3 Intermediate Data Structures and Algorithms
- CMPT 318.3 Data Analytics
- CMPT 384.3 Information Visualization
- CMPT 487.3 Image Processing and Computer Vision
- GEOG 222.3 Introduction to Geomatics
- GEOG 322.3 Introduction to Geographic Information Systems
- GEOG 302.3 Quantitative Methods in Geography
- GEOG 323.3 Remote Sensing
- STAT 245.3 Introduction to Statistical Methods

Choose **3 credit units** from the following:

- GEOG 120.3 Introduction to Global Information Systems
- GEOG 125.3 Environmental Science and Society
- GEOG 130.3 Environment Health and Planning

Choose **3 credit units** from the following:

- CMPT 407.3 Research Topics in Applied Computing

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	Software Engineering: • CMPT 214.3 Programming Principles and Practice • CMPT 353.3 Full Stack Web Programming • CMPT 370.3 Intermediate Software Engineering Analytics: • CMPT 317.3 Introduction to Artificial Intelligence • CMPT 360.3 Machines and Algorithms • CMPT 423.3 Machine Learning • CMPT 489.3 Deep Learning and Applications User Interface and Visualization: • CMPT 360.3 Introduction to Artificial Intelligence • CMPT 381.3 Implementation of Graphical User Interfaces • CMPT 481.3 Human Computer Interaction • CMPT 484.3 Graph Drawing and Network Visualization Choose **6 credit units** from the following, from any of the two areas: Planning: • PLAN 350.3 Transportation Planning and Geography • PLAN 360.3 Urban Data Analysis and Visualization • PLAN 390.3 Research and Field Methods in Planning Geography: • GEOG 420.3 Cartography and Professional Communication • GEOG 423.3 Advanced Remote Sensing	• GEOG 490.3 Honours Thesis in Hydrology or Geomatics • PLAN 490.3 Senior Planning Studio Choose **12 credit units** from the following, from any of the three areas, with at least one course at the 400-level: Software Engineering: • CMPT 214.3 Programming Principles and Practice • CMPT 353.3 Full Stack Web Programming • CMPT 370.3 Intermediate Software Engineering Analytics: • CMPT 317.3 Introduction to Artificial Intelligence • CMPT 360.3 Machines and Algorithms • CMPT 423.3 Machine Learning • CMPT 489.3 Deep Learning and Applications User Interface and Visualization: • CMPT 360.3 Introduction to Artificial Intelligence • CMPT 381.3 Implementation of Graphical User Interfaces • CMPT 481.3 Human Computer Interaction • CMPT 484.3 Graph Drawing and Network Visualization Choose **6 credit units** from the following, from any of the two areas: Planning: • PLAN 350.3 Transportation Planning and Geography • PLAN 360.3 Urban Data Analysis and Visualization • PLAN 390.3 Research and Field Methods in Planning Geography: • GEOG 420.3 Cartography and Professional Communication • GEOG 423.3 Advanced Remote Sensing

C5 Electives Require-ment	**(27 credit units)** Arts and Science courses, or those from other Colleges that have been approved for Arts and Science credit, to complete the requirements for 120 credit unit Four-year program, of which at least 66 must be at the 200-level or higher.	**(24 credit units)** Arts and Science courses, or those from other Colleges that have been approved for Arts and Science credit, to complete the requirements for 120 credit unit Honours program, of which at least 66 must be at the 200-level or higher.