

Bachelor of Science in Geospatial Science and Surveying: Geospatial Data Science Stream; 4-year curriculum [From 2026]

A candidate shall complete approved courses of a value **not less than 511 credits** and shall comply with the prescribed curriculum requirements.

First Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG1xxxF	Introduction to Geo-Spatial Sciences	8	5
2	GEO1009F	Introduction to Earth and Environmental Sciences	12	5
3	MAM1020F	Mathematics IA for Engineers	18	5
4	PHY1031F	General Physics A	18	5
5	CSC1017S	Introduction to Programming	16	5
6	APG1023S	Surveying and GIS	15	5
7	MAM1021S	Mathematics IB for Engineers	18	5
8	STA1008S	Statistics for Engineers	12	5
		Total credits	117	

Second Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG2xxxF	Fundamentals of GISc	16	6
2	APG2xxxF	Cartography	16	6
3	APG2xxxF	Plane and Construction Surveying	16	6
4	MAM2084F	Linear Algebra and DEs for Engineers	16	6
5	APG2xxxF	Introduction to Remote Sensing	12	6
6	APG2xxxS	Geometrical Geodesy	16	6
7	APG2xxxS	Spatial Data Adjustments	16	6
8	APG2xxxS	Photogrammetry	16	6
9	MAM2083S	Vector Calculus for Engineers	16	6
10	APG2xxxS	Applied Surveying and GISc	6	6
11	APG2xxxX	Practical Training	0	6
		Total credits	146	

Third Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG3xxxF	Spatial Statistics	16	7
2	APG3xxxF	Design and Development of Geospatial Systems	18	7
3	APG3xxxF	Geo-Visualisation	16	7
4	APG3xxxW	Spatial Data Architectures	24	7
5	APG3xxxS	Coordinate Systems and Map Projections	18	7
6	APG3xxxS	Satellite and Space-based Positioning Systems	18	7
7	APG3xxxX	Practitioners Portfolio of Evidence	20	7
		Total credits	130	

Fourth Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG4xxxF	Research Methods	8	8
2	APG4xxxF	3D Scene Reconstruction and Data Science	18	8
3	APG4xxxF	Computing and Data Infrastructures	18	8
4	APG4xxxS or EGS2013F or EGS1007S	Select one application field: APG4xxxS - Land Development Planning or EGS2013F - The Physical Environment or EGS1007S - Human and Physical Systems	24 or 18	8 or 6 or 5
5	APG4xxxS	Business Practice and Professional Project management for Geospatial Scientists	12	8
6	APG4xxxS	Professional Practice and Ethics in Geospatial Sciences	12	8
7	APG4xxxW	Geospatial Sciences Project	32	8
		Total credits	124 or 118	

Bachelor of Science in Geospatial Science and Surveying: Geospatial Data Science Stream; 5-year curriculum [From 2026]

Students on the 5-year curriculum take the same courses and credits as in the 4-year curriculum, but the courses are spaced out over 5 years to allow more time for learning new concepts, grappling with assignments, asking questions, and obtaining feedback. The 5-year curriculum is supported by ASPECT to ensure student success.

All students are admitted into the 4-year curriculum, and there are two opportunities in the first year to change to the 5-year curriculum and receive additional support from ASPECT. The first opportunity is after the initial set of class tests in the first term. The second opportunity is after the first semester's final examinations.

There are no additional tuition fees or charges for changing to the 5-year curriculum. Changing at the end of the first term is preferable as this enables students to switch before any courses are failed. Courses that are failed must be repeated and will be charged for.

A candidate shall complete approved courses of a value **not less than 511 credits** and shall comply with the prescribed curriculum requirements.

First Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG1xxxxF	Introduction to Geo-Spatial Sciences	8	5
2	GEO1009F	Introduction to Earth and Environmental Sciences	12	5
3	MAM1020F	Mathematics IA for Engineers	18	5
4	CSC1017S	Introduction to Programming	16	5
5	APG1023S	Surveying and GIS	15	5
6	MAM1021S	Mathematics IB for Engineers	18	5
		Total credits	87	

Second Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG2xxxxF	Plane and Construction Surveying	16	6
2	MAM2084F	Linear Algebra and DEs for Engineers	16	6
3	APG2xxxxS	Geometrical Geodesy	16	6
4	MAM2083S	Vector Calculus for Engineers	16	6
5	APG2xxxxX	Practical Training	0	6
6	PHY1031F	General Physics A	18	5
7	STA1008S	Statistics for Engineers	12	5
		Total credits	94	

Third Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG2xxxxF	Introduction to Remote Sensing	12	6
2	APG2xxxxF	Cartography	16	6
3	APG2xxxxF	Fundamentals of GISc	16	6
4	APG2xxxxS	Spatial Data Adjustments	16	6
5	APG2xxxxS	Photogrammetry	16	6
6	APG2xxxxS	Applied Surveying and GISc	6	6
		Total credits	82	

Fourth Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG3xxxF	Spatial Statistics	16	7
2	APG3xxxF	Design and Development of Geospatial Systems	18	7
3	APG3xxxF	Geo-Visualisation	16	7
4	APG3xxxW	Spatial Data Architectures	24	7
5	APG3xxxS	Coordinate Systems and Map Projections	18	7
6	APG3xxxS	Satellite and Space-based Positioning Systems	18	7
7	APG3xxxX	Practitioners Portfolio of Evidence	20	7
		Total credits	130	

Fifth Year Core Courses

	Course Code	Course Name	NQF Credits	NQF Level
1	APG4xxxF	Research Methods	8	8
2	APG4xxxF	3D Scene Reconstruction and Data Science	18	8
3	APG4xxxF	Computing and Data Infrastructures	18	8
4	APG4xxxS or EGS2013F or EGS1007S	Select one application field: APG4xxxS - Land Development Planning or EGS2013F - The Physical Environment or EGS1007S - Human and Physical Systems	24 or 18	8 or 6 or 5
5	APG4xxxS	Business Practice and Professional Project management for Geospatial Scientists	12	8
6	APG4xxxS	Professional Practice and Ethics in Geospatial Sciences	12	8
7	APG4xxxW	Geospatial Sciences Project	32	8
		Total credits	124 or 118	