B.S. Geospatial Engineering Degree (*Fall 2025 and later*)

This is not an official list of degree requirements. Adjustments may be required due to curriculum changes.

First Year

Fall

Course	Prerequisites	Credit
MA1160 Calculus with Technology 1		4
ENG1101 Eng Analysis	MA1160 (Concurrent)	3
CH1150 University Chemistry 1	CH1151 *(Corequisite)*	3
CH1151 University Chemistry Lab 1	CH1150 *(Corequisite)*	1
PH1100 Physics 1 Lab	MA1160 *(Concurrent)*	1
SU1000 Intro to Geospatial		1
UN1015 Composition		3
Total		**16**

Spring

Course	Prerequisites	Credit
MA2160 Calculus with Technology 2	MA1160	4
ENG1102 Modeling & Design	ENG1102, MA2160 (Concurrent)	3
PH2100 University Physics 1	MA1160, PH1100 *(Concurrent)*	3
SU2000 Surveying		2
Essential Education - Activities for Well-Being and Success		1
Essential Education - Foundations		3
Total		**16**

Second Year

Fall

Course	Prerequisites	Credit
MA3160 Multivariable Calc	MA2160	4
MA2320 Linear Algebra	MA1160	2
GE2000 Understanding the Earth *or* GE2100 Enviro Geology		3
SU2050 Geospatial Computations	SU2000	4
Essential Education – SHAPE		3
Total		**16**

Spring

Course	Prerequisites	Credit
MA3710 Statistics	MA2160	3
BUS2200 Business Law		3
ENG2120 Statics & Strength of Mat.	MA2160, ENG1102, PH2100	4
SU2200 Route & Eng Surveying	SU2000	3
Essential Education – Arts & Culture		3
Total		**16**

Third Year

Fall

Course	Prerequisites	Credit
SU3600 Surveying Comp & Adjust	SU250, MA2320, MA3710	4
SU3180 Boundary Survey Princ	SU2000, JR STDN	4
Science Elective		3
Essential Education - Activities for Well-Being and Success		1
Essential Education – Intercultural Competency		3
Total		**15**

Spring

Course	Prerequisites	Credit
FW3540 Intro to GIS at Nat Res Mgt	MA3710	4
SU4060 Geodesy	SU2050, MA2320, MA2160, JR STDN	3
SU4540 Remote Sensing	SU2050, JR STDN	3
CMG3200 Site Plan and Dev	SU2000, JR STDN	4
Essential Education - Experience		3
Total		**17**

Fourth Year

Fall

Course	Prerequisites	Credit
SU4140 Photogram & UAV		4
SU4142 3D Survey & Modeling	SR STDN	3
SU4100 Geodetic Positioning	SU3600, JR/SR STDN	3
CEE3331 Prof Practice	JR STDN	2
Engineering Elective		3
Total		**15**

Spring

Course	Prerequisites	Credit
CEE4905 Eng Design Project		3
SU4180 Land Subdivision Design	SU3180, CMG3200	3
Surveying Elective		3
HU3120 Tech & Prof Comm.		3
Essential Education - Activities for Well-Being and Success		1
Total		**13**

Grand Total = 124 Credits

1. ***Essential Education Requirements:*** 24 total credits. Required courses are *UN1015-Composition* (3 credits), a *Foundations in the Human World* course (3 credits), a *Communication Intensive* course (3 credits), an *Arts & Culture* course (3 credits), an *Intercultural Competency* (3000+) course (3 credits), a *SHAPE* course (EC3400, 3 credits), an *Essential Education Experience* (3000+) course (3 credits), and 3 credits of *Activities for Well-being and Success*. The Essential Education and Activities for Well-Being list is available online at: https://www.mtu.edu/registrar/pdfs/essential-education-course-lists-2025-2026.pdf

2. ***Engineering Electives:*** 3 total credits.
   CEE 3101, CEE 3200, CEE 3332, CEE 3401, ENG XXXX, UN 3002

3. ***Science Electives:*** 3 total credits.
   BL 2001, BL 2160, CH 1153, FW 2010, PH 1200/2200, PH 1600/1610, GE 3850

4. ***Surveying Electives:*** 3 total credits.
   SU 4010, SU 4011, SU 4012, SU 4013, SU 4300, SU 4996, SU 4997, SU 4998

5. ***Prerequisite*** (pre-req) course must be successfully completed ***PRIOR*** to taking the subsequent course.
   Concurrent Prerequisites (concurrent) may be taken at the same time, although it is not necessary if the prerequisite course is completed first.
   Required Corequisite (co-req) courses that ***MUST*** be taken together in the same semester.

6. ***Math:*** Students are placed into an initial math course based on ACT/SAT math score, the online ALEKS assessment, or a math placement exam score for credit (AP, IB, CLEP). MA1160 (4 credits) or MA1161 (5 credits) satisfy the Calculus 1 requirement. Linear Algebra and Differential Equations are offered as full semester courses for students taking these courses in separate semesters (MA2320 – Linear Algebra, MA3520 – Differential Equations). The Math department also teaches Linear Algebra and Differential Equations as accelerated courses. In the first half of a given semester MA2321 – Linear Algebra, and MA3521 – Differential Equations, in the second half of the same semester (registration must be for the same section number of both MA2321 and MA3521 in that semester). MA2320, MA2321, and MA2330 are all equivalent and are approved prerequisites for MA3520 or MA3521. MA3530 and 3560 are also equivalent to MA3520/3521. MA2710, 2720 and 3715 are all acceptable in place of MA3710.

7. ***Transfer, Advanced Placement, or study abroad courses*** are not included in credit hours used for GPA calculations. Transfer credit is awarded for Michigan Tech equivalent course work only if a grade of 'C' or better (2.00/4.00) or equivalent is earned at a transfer institution. Study abroad credit will be awarded based on passing a course according to equivalent international standards. Advanced Placement credit is awarded according to published AP Exam score standards (also IB and CLEP).

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