GEOSPATIAL ENGINEERING FLOWCHART

Geoinformatics Path

Academic Year 2021-22

Total Academic Credits: 127
Total Co-Curricular Units: 3

**F** indicates course is offered Fall semester
**S** indicates course is offered Spring semester
**Su** indicates course is offered Summer semester
**(C)** indicates the course can either be taken at the same time (co-req) or taken prior to the course (pre-req)
**(L)** indicates a course which includes a lab must be scheduled in addition to the lecture
**(F)** indicates the course can be taken prior to the course (pre-req)

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**Fall Year 1**

- MA1160/1161 Coreq.
- PH1100 (L) PHYSICS LAB I (1 CREDIT) F, S, Su
- CH1150 UNIVERSITY CHEMISTRY (3 CREDITS) F, S, Su
- ENG1101 ENGINEERING ANALYSIS (3 CREDITS) F, S, Su
- SU1000 SURVEYING ENGR ORIENTATION (1 CREDIT) F
- Co-cur Unit (0.5 UNIT) F, S, Su

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**Spring Year 1**

- MA2160 CALCULUS II (4 CREDITS) F, S, Su
- PH2100 PHYSICS LECTURE I (3 CREDITS) F, S, Su
- CHI151 (L) UNIVERSITY CHEMISTRY LAB (1 CREDIT) F, S, Su
- ENG1102 MODELING & DESIGN (3 CREDITS) F, S, Su
- SU2000 SURVEYING (2 CREDITS) F, S
- Co-cur Unit (0.5 UNIT) F, S, Su

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**Fall Year 2**

- MA3160 CALCULUS III (4 CREDITS) F, S, Su
- MA3710 STATISTICS (3 CREDITS) F, S, Su
- GE2000 (L) UNDERSTANDING THE EARTH (3 CREDITS) F, S
- OR
- GE2100 (L) ENV. GEOLOGY (3 CREDITS) S
- ENG2120 STATICS & STRENGTH OF MATERIALS (4 CREDITS) F, S
- Sci Elective SEE BACK (3 CREDITS) F, S, Su

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**Spring Year 2**

- ENG3220 LINEAR ALGEBRA (2 CREDITS) F, S, Su
- SU2000 or SU2050 F, S, Su
- SU2000 or SU2050 F, S, Su
- SU2000 or SU2050 F, S, Su

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**Fall Year 3**

- MA3160 CALCULUS III (4 CREDITS) F, S, Su
- MA2160 ENG1102 PH2100 F, S, Su
- MA2320 GEODESY (3 CREDITS) S
- ENG3600 (L) SO COMP. & ADJUSTMENTS (4 CREDITS) F
- IGT Elective SEE BACK (3 CREDITS) F, S

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**Spring Year 3**

- MA3710 (C) F
- SU3600 (L) INTRO TO GIS FOR NATRL RES MGT (3 CREDITS) S
- FW4340 (L) PHOTOGRAMMETRY (3 CREDITS) F
- SU4060 (L) PHOTOGRAMMETRY (3 CREDITS) S

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**Fall Year 4**

- MA3710 (C) F
- SU4100 (L) GEODETIC POSITIONING (3 CREDITS) S
- SU4010 (L) CADASTRE & LAND INFO (3 CREDITS) F
- SU4012 (L) GEOSPATIAL DATA MINING (3 CREDITS) S
- SU4013 (L) HYDROGRAPHIC MAPPING (3 CREDITS) S

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**Spring Year 4**

- SU4120 (L) TECH & PROF. COM. (3 CREDITS) F, S, Su
- SU4142 (L) 3D SURVEYING & MODELING (3 CREDITS) On Demand
- SU4143 (L) 3D SURVEYING & MODELING (3 CREDITS) On Demand
- SU4144 (L) 3D SURVEYING & MODELING (3 CREDITS) On Demand

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**Mass Electives**
- 6 credits must be upper level (3000-4000)
- UN1035 and UN1025 are prerequisites for all upper level Mass courses

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**Sample** = Gen Ed Requirements

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- 15
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- 17

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Adjustments may be required due to curriculum changes.

This is not an official list of degree requirements.
IGT Elective List (3 credits)
CMG1200 Intro to BIM (3 cr) S
EE4777 Distributed Additive Manufacturing (3 cr) F
UN5550 Intro to Data Science (3 cr) F

GIS Elective List (3 credits)
SS2050 Fundamentals of GIS and Technologies (3 cr) F
SS4050 Advanced GIS Methods and Projects (3 cr) F (alt yrs)

Programming Elective List (3 credits)
CS1121 Intro to Programming I (3 cr) F, S, Su
CS1131 Accelerated Intro to Programming (5 cr) F
FW5553 Python Programming w/ ArcMap GIS (3 cr) F
SU4601 R for Geoscience (3 cr) On Demand

Science Elective List (3 credits)
BL2001 Valuing the Great Lakes (3 cr) F
BL2160 Botany (4 cr) S
CH1153 Chemistry Recitation I (1 cr) F, S, Su
FW2010 Vegetation of North America (4 cr) F
PH1200/2200 Physics II (4 cr – 1 cr lab, 3 cr lecture) F, S, Su
PH1600/1610 Introductory Astronomy & Lab (3 cr – 1 cr lab, 2 cr lecture) F, S, Su
GE3850 Geohydrology (3 cr)

UNDERGRADUATE CATALOG:
http://www.mtu.edu/catalog/courses/

GENERAL EDUCATION (CO-CURRICULAR & HASS LIST):
https://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/

GENERAL EDUCATION REQUIREMENTS

A. CORE COURSES (12 CREDITS)
1. UN1015 (COMPOSITION)
2. UN1025 (GLOBAL ISSUES) or 3000+ level Modern Language Course
3. CRITICAL AND CREATIVE THINKING
ART1000, HU2130, HU2324, HU2501, HU2503, HU2538, HU2700, HU2820, HU2910, MUS1000, SND1000, SS2300, THEA1000
4. SOCIAL RESP. & ETHICAL REASONING
EC2001, PSY2000, SS2100, SS2200, SS2400, SS2500, SS2501, SS2502, SS2503, SS2504, SS2505, SS2600, SS2610, SS2700

B. HASS COURSES (12 CREDITS)
(General Ed Website, left)
1. COMM/COMP: ____________________________
2. HUMANITIES & FINE ARTS: ____________________________
3. SOCIAL & BEHAVIORAL SCIENCES: ____________________________
4. ANY HASS OR HASS RESTRICTED COURSE: ______________
   • 6 credits must be upper division 3000-4000 level courses
   • No more than 3 credits from the HASS Restricted list can be used to satisfy
     HASS requirements.
   • Each course can satisfy only one requirement.

C. CO-CURRICULAR ACTIVITIES (3 UNITS)
(General Ed Website, left)
1. __________ 4. __________
2. __________ 5. __________
3. __________ 6. __________