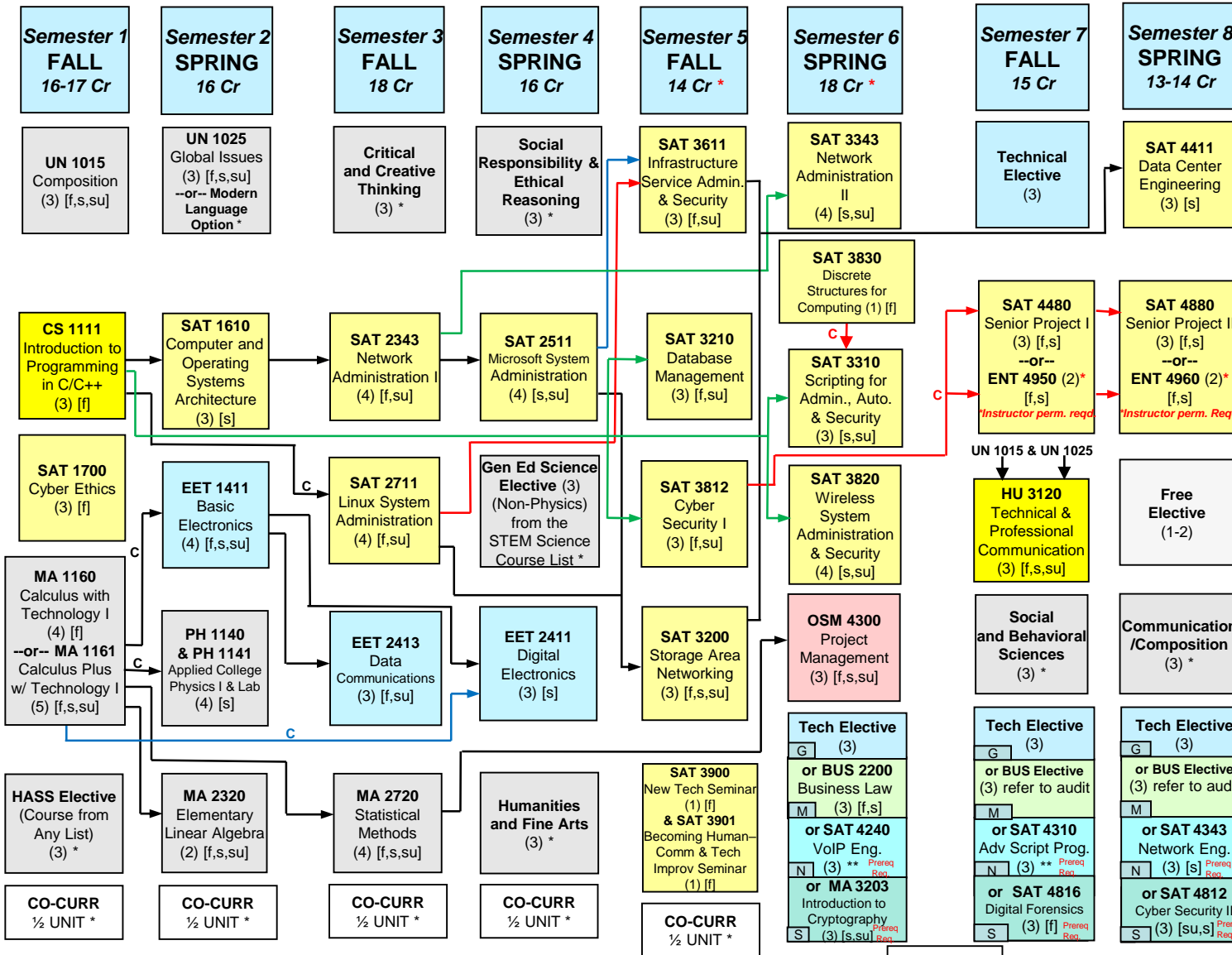


Bachelor of Science - Computer Network and System Administration

Academic Year 2019-20 – Recommended Course Sequence



127
Total Credits

- Technical Electives (12 credits required)**
 ACC 2000 - 3 [f,s]
 Accounting Principles I
- BUS 2200 - 3 [f,s]
 Business Law
- EET 3373 - 3 (EET 1411 or EET 2411) [f]
 Intro to Programmable Controllers
- EET 4141 - 4 (EET 2141 or CS 1121) [f]
 Microcontroller Interfacing
- EET 4253 - 3 (EET 1411) [s]
 LabVIEW Programming for Data Acquisition
- ENT 1960 - 1 (Perm. of Instructor) [f,s,u]
 Enterprise Orientation-Spring
 --OR--
 ENT 2000 level
 ENT 3000 level (except 3964)
 ENT 4000 level (except 4950, 4960)
- MA 3203 - 3 (MA 2320) [s,u]
 Introduction to Cryptography
- MGT 3800 - 3 [f]
 Entrepreneurship
- MGT 4600 - 3 [f,s]
 Management of Technology & Innovation
- OSM 3000 - 3 (MA 1160 or MA 1161) & MA 2720) [f,s,u]
 Operations & Supply Chain Management
- SAT 3002 - 3 [f]
 Application Programming Introduction
- SAT 4240 - 3 (SAT 2511 & SAT 2711 & SAT 3343) [On Demand]
 Voice over IP Engineering
- SAT 4310 - 3 (SAT 3002 or SAT 3310) [On Demand]
 Advanced Scripting Programming
- SAT 4343 - 3 (SAT 3343) [s]
 Network Engineering
- SAT 4600 - 3 (SAT 3002 or SAT 3310) [s]
 Web Application Development
- SAT 4812 - 3 (SAT 3812) [s,u]
 Cyber Security II
- SAT 4816 - 3 (SAT 3812) [f]
 Digital Forensics
- SAT 4996 - 1-3 [On Demand]
 Special Topics in Computer Network Systems Administration
- SAT 4997 - 1-3 [On Demand]
 Independent Study in Computer Network Systems Administration
- SAT 4998 - 1-6 [On Demand]
 Undergraduate Research in Computer Network Systems Administration
- SAT 5000 level - 1-3

→ Prerequisite (Course must be completed prior to enrollment)

→ C → Concurrent Prerequisite (A prerequisite course that may be taken concurrently)

() Course Credits

[] Semester Offered

* See Notes on Back

* Enterprise Option
 ENT 3950 (1) [f] (Sem. 5)
 ENT 3960 (1) [s] (Sem. 6)

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Technical Emphasis (color reference)

General	G
IT Management	M
Network Engineering - ** On Demand	N
Cyber Security	S

1. **General Education Requirements**: 24 total credits. Required courses: UN 1015-Composition (3 credits); UN 1025-Global Issues (3 credits); Critical and Creative Thinking (3 credits); Social Responsibility & Ethical Reasoning (3 credits); and 12 HASS credits. Approved lists are linked on the College of Computing's "Advising" web page. <https://www.mtu.edu/registrar/201920/core-and-hass-list-19-20v2.pdf>
2. **UN 1025 Global Issues Language Option**: 3 credits of 3000-level or higher modern language may be substituted directly for UN 1025. **Any students with previous language experience in Spanish, French, German, or Mandarin must take the Modern Language Online Placement Test.**
3. **HASS (Humanities, Arts, & Social Sciences)**: 12 total credits that include a minimum of 3 credits each in: Communication/Composition, Humanities/Fine Arts, and Social & Behavioral Sciences. Approved lists are linked on the College of Computing's "Advising" web page. <https://www.mtu.edu/registrar/201920/core-and-hass-list-19-20v2.pdf> **Six (6) credits must be 3000 level or higher (does not include HU 3120). HU 3120 is not a HASS course for CNSA students, but still is a degree requirement.** No more than 3 credits may be used from the HASS Restricted List. All 3000-level or higher HASS courses require UN 1015 and UN 1025 as prerequisites.
4. **Science Elective (STEM)**: <https://www.mtu.edu/registrar/pdfs/stem-requirements19-20.pdf>
5. **Math**: Math placement is based on ACT/SAT math score. Students have the option to take the ALEKS placement test in place of the ACT/SAT placement. For more information, see: <https://www.mtu.edu/math/undergraduate/placement/>
6. **Free Electives**: Any Michigan Tech course(s) or approved transfer course(s) that are 1000-level or above, and are not duplicated or equivalent courses.
7. **Co-curricular Activities**: Mainly physical education courses with some additions. Three units (or six half units) are required for graduation. These units will be included as earned hours and may be used to determine full-time enrollment status. These are in addition to the total credits required for the degree. A co-curricular list is linked on the College of Computing's "Advising" web page. These units are graded pass/fail and are not included in credit hours used for calculation of any grade point averages (cumulative or departmental).
8. **Pre-requisite** courses are noted by a plain arrow. The pre-requisite course must be successfully completed **prior** to taking the subsequent course.
9. **Concurrent Pre-requisites** are noted by a 'C' by the arrow and may be taken at the same time, although it is not necessary to take these courses together if the pre-requisite course is completed first.
10. **Co-requisite** courses are courses that must be taken together in the same semester.
11. **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 by International Programs and Services based on passing a course according to equivalent international standards. Advanced Placement credit is awarded according to published AP Exam score standards.

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

July 2019