Michael Hart, CE '16
CIVIL ANALYST, KIMLEY-HORN

Michael splits his time between pavement management and general civil site design. In his role in pavement management, he conducts site visits nationally to assess current pavement and the ADA deficiencies and develop CAD plans for repairs. For civil site design, he works in both the public and private sector, focusing on CAD and exploring grading, utilities, site development plans, and construction drawings.

FUN FACT: His job has allowed him to travel extensively—including most of the Midwest, Texas, Missouri, California, New Mexico, Oregon, and even Hawaii. While in Hawaii, he completed a campus-wide pavement evaluation and spent two weeks on Oahu. He is now working out of Denver, Colorado.
Congratulations on making a crazy smart decision that will positively impact the rest of your life.

You have chosen to pursue a degree in civil/environmental/geospatial engineering or construction management in the Department of Civil and Environmental Engineering, at a top engineering school—Michigan Technological University.

No matter what you do after graduation, your degree will get you there.

Graduates from our Bachelor of Science programs work for Fortune 500 Companies, Engineering News Record Top 500 Engineering Companies, as well as go on to graduate school or pursue other advanced degrees.

The faculty and staff of the Civil and Environmental Engineering Department value our students and want to see you succeed. So please, visit the faculty during their office hours, ask them questions, and let them know you value your education as much as they do.

Julie Ross, your academic advisor, is the best advisor on the Michigan Tech campus. Work with her to optimize your academic plan to achieve your degree.

Last but not least, please know that my door is open for you to share your achievements and the challenges you overcome in the pursuit of your academic degree.

Again, congratulations on starting a new chapter in your academic career. We are glad you chose the Civil and Environmental Engineering Department at Michigan Tech as your new home.

Best wishes,

Audra Morse, PhD, PE, BCEE, F.ASCE
Professor and Department Chair
Advising Syllabus

MISSION: Advisors and students working together to develop an individualized academic plan for accomplishing student goals.

ADVISING DEFINED: Academic Advising is a relationship and a process that results in benefits for student, advisor, and university as a whole. The advisor and student collaborate to develop, follow, and complete an academic plan. A productive advising relationship will help students envision, foster, and realize their goals here at Michigan Tech and for a lifetime.

STUDENT LEARNING OUTCOMES

• Knowledge of university student learning goals and degree requirements
• A thorough understanding of your academic plan
• Ability to find and use advising resources
• Increased and improved self-awareness and decision-making skills

STUDENT RESPONSIBILITIES (What you should do)

• Take responsibility for academic planning
• Understand learning goals and degree requirements
• Follow academic procedures and policies
• Communicate with your advisor: read all advising correspondence
• Attend advising meetings prepared
• Apply advising recommendations in order to achieve your academic plan
• Seek assistance from instructors, learning centers, and other university services
• Contact your advisor promptly when you have questions or concerns. When faced with a difficult question or challenging situation, your academic advisor is a good place to begin
• Problem-solve to revise and achieve your academic plan

ACTIVITIES (How advisors and students realize outcomes and goals)

• Identify a degree program that aligns with your academic interests and abilities
• Create an educational plan that fulfills the academic plan
• Select appropriate classes to satisfy your evolving goals
• Learn the benefits of internships, co-ops, and study abroad
• Explore academic options: Enterprise program, undergraduate research, Pavlis Honors College, dual majors, secondary degrees, minors, and graduate study
• Locate and use resources and services
• Interpret university requirements, policies, regulations, and procedures
• Develop decision-making skills, self-awareness, and self-direction
• Clarify and evaluate progress toward academic and life goals

ADVISORS ADVOCATE FOR STUDENTS, PROTECT AND ENSURE THEIR PRIVACY AND THEIR RIGHTS AS ADVISEES IN COMPLIANCE WITH UNIVERSITY POLICIES:

• mtu.edu/deanofstudents/disability
• mtu.edu/registrar/faculty-staff/ferpa
• mtu.edu/registrar/students/advising
# Student Academic Advising Checklist

## ORIENTATION WEEK
Preparing for your first semester

- [ ] Login to MyMichiganTech & review your transcript. Are AP credit & transfer credits correct?
- [ ] Meet academic advisor
- [ ] Complete class registration & print class schedule
- [ ] Explore Campus Resources & visit these websites
  - Your department & advisor
  - Undergraduate Catalog - [www.mtu.edu/catalog](http://www.mtu.edu/catalog)
  - Dean of Students - [www.mtu.edu/deanofstudents](http://www.mtu.edu/deanofstudents)
  - Registrar - [www.mtu.edu/registrar](http://www.mtu.edu/registrar)
  - Advising - [www.mtu.edu/registrar/students/advising](http://www.mtu.edu/registrar/students/advising)
  - Library - [www.mtu.edu/library](http://www.mtu.edu/library) - take a library tour
  - Wellness & Counseling - [www.mtu.edu/counseling](http://www.mtu.edu/counseling)

## YEAR 1
Transitioning & adjusting to college life

- [ ] Attend first year advising meeting with your major advisor
  - Unsure about your major? Meet with:
    - General sciences/arts undeclared advisor: [www.mtu.edu/sciences-arts/undergraduate/gsa](http://www.mtu.edu/sciences-arts/undergraduate/gsa) OR
    - General/undecided engineering advisor: [www.mtu.edu/ef/degree/advising](http://www.mtu.edu/ef/degree/advising)
- [ ] Review major requirements
  - Run interactive audit each semester after registration - [www.mymichigantech.mtu.edu](http://www.mymichigantech.mtu.edu)
- [ ] Review Academic Policies & Academic Integrity - [www.mtu.edu/deanofstudents](http://www.mtu.edu/deanofstudents)
- [ ] Review University Student Learning Goals & your major's goals - [www.mtu.edu/learning-goals](http://www.mtu.edu/learning-goals)
- [ ] Visit Career Services - [www.mtu.edu/career](http://www.mtu.edu/career)
  - Go to Career Cruising 'Explore my Interests' - [www.mtu.edu/career/students/advising/career-cruising](http://www.mtu.edu/career/students/advising/career-cruising)
- [ ] Create a resume & attend career fairs
- [ ] Begin to explore Pavlis Honors College, internship, co-op, research, study abroad, minors
- [ ] Learn about campus activities & student organizations
  - [www.involvement.mtu.edu/organizations](http://www.involvement.mtu.edu/organizations)

## YEAR 2
Academic & career exploration, & personal development

- [ ] Meet with advisor, bring your academic plan
  - Run interactive audit each semester after registration - [www.mymichigantech.mtu.edu](http://www.mymichigantech.mtu.edu)
- [ ] Explore interests, strengths, & careers
  - Within your department & network with faculty in your major
  - Career Services - [www.mtu.edu/career](http://www.mtu.edu/career)
- [ ] Update your resume & attend career fairs
- [ ] Explore/participate Pavlis Honors College, internship, co-op, research, study abroad, minors
- [ ] Consider joining an Enterprise - [www.mtu.edu/enterprise](http://www.mtu.edu/enterprise)

## YEAR 3
Academic enhancement & career goal setting

- [ ] Run interactive audit each semester after registration - [www.mymichigantech.mtu.edu](http://www.mymichigantech.mtu.edu)
- [ ] Meet with advisor to prepare for graduation
- [ ] Network with faculty in your major
- [ ] Attend Career Services & Graduate School workshops for career planning
  - Consider Accelerated Masters - [www.mtu.edu/accelerated](http://www.mtu.edu/accelerated)
  - Consider Senior Rule Classes - [www.mtu.edu/registrar/students/registration/policies/senior-rule](http://www.mtu.edu/registrar/students/registration/policies/senior-rule)
- [ ] Develop career goals
- [ ] Explore/participate Pavlis Honors College, internship, co-op, research, study abroad, minors
- [ ] Update resume & attend career fairs

## FINAL YEAR
Transitioning out of college into career or graduate school

- [ ] Apply for graduation by 10th week of the semester prior to graduation
  - Must have earned 90 credits or more
  - [www.mtu.edu/registrar/students/graduation/degree](http://www.mtu.edu/registrar/students/graduation/degree)
- [ ] Meet with advisor for final degree audit one semester before graduation
  - Run interactive audit each semester after registration - [www.mymichigantech.mtu.edu](http://www.mymichigantech.mtu.edu)
- [ ] Network with faculty in your major
- [ ] Finalize career/graduate school plans
  - Complete the First Destination survey - [https://mtu.joinhandshake.com/login](https://mtu.joinhandshake.com/login)
  - Complete Loan Exit Counseling for Financial Aid, if needed - (906) 487-2662
- [ ] Graduation
  - Check for your name on the Graduation Candidate List - [www.mtu.edu/commencement](http://www.mtu.edu/commencement)
  - Order cap & gown, honor cords - optional - [www.mtu.edu/commencement](http://www.mtu.edu/commencement)
  - Participate in commencement ceremony - optional

**Tough question or scenario? Ask your academic advisor!**
Andrew Lobbestael, CE '16

PROJECT ENGINEER
HARDMAN CONSTRUCTION, INC.

Andrew is responsible for providing on-site communication between the project managers and the superintendents and also assists in project management, submittals, and RFIs.

FUN FACT: He has traveled to Key West and Las Vegas on company trips and has been heavily involved in several large projects in Detroit, central Michigan, and the Petoskey area.
Tips for Academic Success

GO TO CLASS... AND BE PRESENT
The decisions you make today directly impact your future...so go to class, turn off your phone, and get ready to learn!

READ & COMPLY WITH THE SYLLABUS
Each class comes with a “roadmap to success” (aka syllabus). Read it, follow it, and save it for future reference.

JOIN A CLUB & GET INVOLVED
Joining a group is a great way to make friends—and if it is engineering related—you’ll get a jump-start on building your resume and network.

NEED HELP? JUST ASK!
Visit your professors during office hours and check out the learning centers and CEE Bernson Student Success Center. Online resources such as Coursera and Kahn Academy are great too! Check out these academic support resources: mtu.edu/success/academic/support

BALANCE SCHOOL & LIFE ACTIVITIES
Your new friends invited you to go exploring, but you have a pile work to do...Learn to make the most of your time between classes and get homework done or study for exams. This will help free up time at the end of each day, so you can relax or hang with friends.

REMEMBER, YOU MAY NOT GET ALL A’S
You didn’t choose Michigan Tech because you thought it would be a walk in the park. If you have a rough semester, don’t let it get you down! Our courses are designed to be challenging, so you are prepared to hit the ground running the moment the diploma hits your hand.

Stressed or anxious? Not sure how to cope?
If you feel the stress is too much, or you are concerned about a friend or classmate, don’t hesitate to reach out to Counseling Services:
906-487-2538 • counseling@mtu.edu • mtu.edu/counseling
What can you do now to be successful in the future? Make the grade.

**WHAT ARE THE RULES FOR REPEATING CLASSES?**

1. You must retake any required class in which you receive an F. You may retake any class you received a CD or D (with the exception of Calc II as noted above).

2. The most recent grade always replaces the previous grade. Retaking a class and receiving a better grade will improve both your semester and overall GPAs. However, you can retake a class and get a lower grade. For example if you have a D (a passing grade) and retake a course and receive an F (a failing grade), you now have a failing grade in the course and will have to retake the class a third time.

3. You may only take a class three times. You must receive permission from the Dean of Student’s Office and your academic advisor to register for a class the third time. If the class that you are retaking is a required class for your program, and you do not pass the class during the third attempt then you may no longer continue in the program.

Review the Registrar’s Office policy on retaking classes: [mtu.edu/registrar/students registrazione policies/repeat-course](mtu.edu/registrar/students/registration/policies/repeat-course)

If you receive an F in any required course, you have to retake it before moving on to the next class in the sequence. We strongly encourage you to retake any required courses if you receive a CD or D. Civils are required to receive a C or better in MA2160 (Calc II) before moving on.

Earn a C, B, or even better, an A...

and hello—less stress & better career opportunities.

Boom!

Freshmen Chemistry:
CH 1150 & CH 1160

Math: MA 1160, MA 2160, MA 3160, MA 2321 & MA 3521

Physics: PH 2100 & PH 2200

Engineering: ENG 1101 & ENG 1102
Kyle Hiltunen
LAND SURVEYOR
UP ENGINEERS & ARCHITECTS

For Kyle, surveying is about the history that is encountered in everyday work and in the surveying profession as a whole, where he experiences something new daily. In his current role, he performs land surveys on everything from small lots to large tract boundaries, while also collecting spatial data for engineering applications.

FUN FACT: He worked in Alaska on a summer internship, where he assisted in original government subdivision surveys.
Calling all creative, curious, analytical, and detail-oriented individuals: tackle growing infrastructure challenges as a civil engineer.

At Michigan Tech you will have unparalleled undergraduate opportunities:

- **State-of-the-art facilities**: Study asphalt and ultra-high-performance concrete and experiment in the pilot-scale environmental simulation lab
- **Hands-on learning**: From Senior Capstone and internships to having one of the highest co-op rates on campus, our students are in high demand
- **Go global**: Check out D80’s Engineers Without Borders and International Senior Design programs, or participate in the Study Abroad Program
- **Be rail-ly innovative**: The innovative Rail Transportation Program is one of the first in the nation. Its mission: to advance rail education and research across disciplines.

Course Descriptions

Civil Engineering course descriptions can be found here: [MTU.EDU/CATALOG/COURSES](http://MTU.EDU/CATALOG/COURSES)

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Julie Ross

**ACADEMIC ADVISOR**

(906) 487-3410
jzross@mtu.edu
Dillman 103
Cody Leveski
CE '16

CONSTRUCTION ENGINEERING INSPECTOR, RS&H

Cody works as a construction engineering inspector based in Austin, Texas. In his role, he documents construction activities on a number of projects to ensure contractors are following the plans and standards.

FUN FACT: He is involved in a $700+ million project near the Austin airport that is making tolled and non-tolled lanes.
CIVIL ENGINEERING FLOWCHART

General Year 2020-21

NOTE: LINEAR ALGEBRA & DIFFERENTIAL EQUATIONS CAN BE TAKEN DURING THE SAME SEMESTER (MA2321 & MA2322). UNITS 1011 & UNITS 1021 ARE REQUIRED FOR ALL LEVELS HASS COURSES.

Fall Year 1 Spring

MA1600/1611 CALCULUS I 4.CREDITS F, S, Su
MA2600 CALCULUS II 4.CREDITS F, S, Su
MA1100 (C or better)
PH1100, If fails, repeat
MA1100/1101 Coreq.

Fall Year 2 Spring

MA1600/1611 CALCULUS I 4.CREDITS F, S, Su
MA2600 CALCULUS II 4.CREDITS F, S, Su
MA2160 LINEAR ALGEBRA 3.CREDITS F, S, Su
MA3210 DIFFERENTIAL EQUATIONS 3.CREDITS F, S, Su

Fall Year 3 Spring

MA2160 LINEAR ALGEBRA 3.CREDITS F, S, Su
CE315 DESIGN PROFESSIONAL PRAC 4.CREDITS F, S, Su
CI2002 WATER RESOURCES 4.CREDITS F, S, Su

Fall Year 4 Spring

SD = Senior Design Pre-requisite
CE3241 ENVIRONMENTAL ENGINEERING 3.CREDITS F, S, Su

COURSE CAN BE TAKEN IN EITHER ORDER IN THE SECOND YEAR.

**UN 1011 & UN 1021 are prerequisites for all level HASS courses.

Total Academic Credits: 131
Total Co-Curricular Credits: 3

Updated 06/18/20
**Engineering Science Elective List (3 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE2700</td>
<td>Biomedical Signals &amp; Systems</td>
</tr>
<tr>
<td>CM2110</td>
<td>Fund. of Chem Engrg 1</td>
</tr>
<tr>
<td>CM2200</td>
<td>Intro to Minerals &amp; Materials</td>
</tr>
<tr>
<td>EE3010</td>
<td>Circuits and Instrumentation</td>
</tr>
<tr>
<td>MSE2100</td>
<td>Intro to Materials Sci &amp; Engrg</td>
</tr>
<tr>
<td>MEEM2201</td>
<td>Thermodynamics</td>
</tr>
<tr>
<td>MEEM2700</td>
<td>Dynamics</td>
</tr>
</tbody>
</table>

**Senior Design (SD) Pre-reqs**

(Complete 7 of the following)

- CEE3101
- CEE3202
- CEE3331
- CEE3332
- CEE3401
- CEE3503
- CEE3620
- CEE3810
- CEE4213
- CEE4223

**UNDERGRADUATE CATALOG:**

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

**GENERAL EDUCATION (CO-CURRICULAR & HASS LIST):**

https://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/

**PROFESSIONAL ELECTIVES**

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

- Any **1000** or higher level course in Computer Science, Fine Arts or Forestry. (CS, FA, FW)
- Any **2000** or higher level course in Biological Sciences, Chemistry, Construction Management, Geology, Physics or Geospatial Engineering. (BL, CH, CMG, GE, PH, SU)
- Any **2000** or higher level course in Business or Economics (ACC, BUS, EC, FIN, MGT, MIS, MKT, OSM).
- Any **3000** or higher level course in Mathematics, Humanities, Psychology, Social Sciences or University Wide (MA, HU, PSY, SS, UN).
- Any **3000** or higher level course in Civil and Environmental Engineering (CEE) or any other Engineering Dept.

**NOTE:** Other courses may be used to satisfy the Professional Electives requirement if approved by the Department of Civil and Environmental Engineering Academic Advisor.

**GENERAL EDUCATION REQUIREMENTS**

**A. CORE COURSES (12 CREDITS)**

1. **UN1015** (Composition)
2. **UN1025** (Global Issues) or 3000+ level Modern Language Course

**B. CRITICAL AND CREATIVE THINKING**

FA2330, FA2520, FA2720, FA2820, HU2130, HU2324, HU2501, HU2503, HU2538, HU2700, HU2820, HU2910, SS2300

**C. SOCIAL RESP. & ETHICAL REASONING**

EC2001, PSY2000, SS2100, SS2200, SS2400, SS2500, SS2501, SS2502, SS2503, SS2504, SS2505, SS2600, SS2610, SS2700

**D. 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.

**E. CO-CURRICULAR ACTIVITIES (3 UNITS)**

(General Ed Website, left)

PE/FA/AR/AF_____ PE/FA/AR/AF_____ PE/FA/AR/AF_____
CIVIL ENGINEERING FLOWCHART
Built Infrastructure
Academic Year 2020-2021

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

NOTE: LINEAR ALGEBRA & DIFFERENTIAL EQUATIONS CAN BE TAKEN DURING THE SAME SEMESTER (MA2321 & MA3520) OR SEPARATE SEMESTERS (MA2320 & MA3520).
**Built Infrastructure Requirements**

**Built Infrastructure Design Course** (select 1)
- CEE4213  Structural Concrete Design  Spring 4 cr.
- CEE4223  Steel Design 1  Fall 4 cr.

**Built Infrastructure Electives** (select 4)
- CEE4202  Computer Applications  Fall 3 cr.
- CEE4203  Matrix Structural Analysis  Spring 4 cr.
- CEE4213  Steel Design 1  Fall 4 cr.
- CEE4233  Structural Timber Design  Spring 3 cr.
- CEE4244  Loads for Civil Structures  Fall 3 cr.
- CEE4333  Estimating, Planning, Const.  Spring 3 cr.
- CEE4480  Foundation Engineering  Fall 3 cr.
- CEE4830  Geosynthetics  Spring 3 cr.
- CEE4850  Rock Engineering  Spring 3 cr.
- CEE5212  Prestressed Concrete Design  Fall 3 cr.
- CEE5213  Concrete/Masonry Bldg Sys  Fall 3 cr.

**Senior Design (SD) Pre-reqs**

(Complete 7 of the following)
- CEE3101, CEE331, CEE3332, CEE3202, CEE3620, CEE3810, Built Infrastructure Design Course, & 2 Built Infrastructure Electives

**Engineering Science Elective List (3 credits)**
- BE2700  Biomedical Signals & Systems
- CM2110  Fund. Of Chem Engrg 1
- CM2200  INTRO TO MATERIALS & MATERIALS
- EE3010  Circuits and Instrumentation
- MSE2100  INTRO TO MATERIALS SCI & ENGRG
- MEEM2201  THERMODYNAMICS
- MEEM2700  DYNAMICS

**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
   - FA2330, FA2520, FA2720, FA2820, HU2130, HU2324, HU2501, HU2503, HU2538, HU2700, HU2820, HU2910, SS2300

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)

   - PE/FA/AR/AF____
   - PE/FA/AR/AF____
   - PE/FA/AR/AF____
   - PE/FA/AR/AF____
   - PE/FA/AR/AF____

**Professional Electives**

**Undergraduate Catalog:** http://www.mtu.edu/catalog/courses/

**General Education (Co-Curricular & HASS List):**
https://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/

**Notes:** Other courses may be used to satisfy the Professional Electives requirement if approved by the Department of Civil and Environmental Engineering Academic Advisor.
This is not an official list of degree requirements. Adjustments may be required due to curriculum changes.

CIVIL ENGINEERING FLOWCHART

Academic Year 2020-21

Fall Year 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA180/124 Calculus I</td>
<td>4</td>
<td>F, S, Su</td>
</tr>
<tr>
<td>ENG1001 Intro to Civil Engineering</td>
<td>2</td>
<td>F, S, Su</td>
</tr>
</tbody>
</table>

Spring Year 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA2100 Calculus II</td>
<td>4</td>
<td>F, S, Su</td>
</tr>
<tr>
<td>PH1100 (L) Physics Lab I</td>
<td>1</td>
<td>F, S, Su</td>
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</table>

Fall Year 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA2100 Calculus III</td>
<td>3</td>
<td>F, S, Su</td>
</tr>
<tr>
<td>PH2100 Physics Lecture II</td>
<td>3</td>
<td>F, S, Su</td>
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Spring Year 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Semester</th>
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<tbody>
<tr>
<td>CEE3331 Transportation</td>
<td>4</td>
<td>F, S, Su</td>
</tr>
<tr>
<td>MA2320/2321 Linear Algebra</td>
<td>2</td>
<td>F, S, Su</td>
</tr>
<tr>
<td>ENG200 Introduction to Engineering Electives</td>
<td>1</td>
<td>F, S, Su</td>
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Fall Year 3

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<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Semester</th>
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<tbody>
<tr>
<td>MA3710 Statistics</td>
<td>3</td>
<td>F, S, Su</td>
</tr>
<tr>
<td>CEE3332 Civil Engineering Electives</td>
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Spring Year 3

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<tr>
<th>Course</th>
<th>Credits</th>
<th>Semester</th>
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<tbody>
<tr>
<td>MA1100 1/110 Calculus II</td>
<td>3</td>
<td>F, S, Su</td>
</tr>
<tr>
<td>MA1160 University Chemistry</td>
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<td>F, S, Su</td>
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Fall Year 4

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<tr>
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<th>Semester</th>
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</thead>
<tbody>
<tr>
<td>MA2100 Calculus IV</td>
<td>4</td>
<td>F, S, Su</td>
</tr>
<tr>
<td>ENG200 Introduction to Engineering Electives</td>
<td>1</td>
<td>F, S, Su</td>
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</table>

Spring Year 4

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<tr>
<th>Course</th>
<th>Credits</th>
<th>Semester</th>
</tr>
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<tbody>
<tr>
<td>CEE1001 Sustainability and CE Practice</td>
<td>2</td>
<td>F, S, Su</td>
</tr>
</tbody>
</table>

General Education Requirements

Total Academic Credits: 131
Total Co-Curricular Units: 3

Updated 06/18/20
**Transportation Requirements**

Choose 1 course from the following

CEE3202  STRUCTURAL ANALYSIS  F, Sp  3 cr.
CEE3503  ENVIRONMENTAL ENG.  Sp  3 cr.
CEE3620  WATER RESOURCES ENG  F, Sp, Su  4 cr.

**TRANSPORTATION DESIGN COURSE**  (Select 1)

CEE4401  PAVEMENT DESIGN  Fall  3 cr.
CEE4407  TRANSPORTATION DESIGN  Spring  4 cr.

**TRANSPORTATION ELECTIVES**  (select 4)

CEE4020  COMPUTER APPLICATIONS  Fall  3 cr.
CEE4101  BITUMINOUS MATERIALS  Fall  3 cr.
CEE4333  ESTIMATING, PLAN., CONST.  Spring  3 cr.
CEE4344  CONSTRUCTION SCHEDULING  Spring  3 cr.
CEE4401  PAVEMENT DESIGN  Fall  3 cr.
CEE4402  TRAFFIC ENGINEERING  Fall  3 cr.
CEE4404  RAILROAD ENGINEERING  Fall  3 cr.
CEE4405  AIRPORT PLANNING  Spring  3 cr.
CEE4407  TRANSPORTATION DESIGN  Spring  4 cr.
CEE4410  TRANSPORTATION PLANNING  Fall  3 cr.
CEE4760  OPT. METHODS IN CEE  Spring  3 cr.
CEE5190  SPECIAL TOPICS  Varies  3 cr.
CEE5402  TRAFFIC FLOW THEORY  Spring (atl)  3 cr.
CEE5408  PUBLIC TRANSIT  On Dem.  3 cr.

**Senior Design (SD) Pre-reqs**

(complete 7 of the following)

CEE3101, (CEE3202 or CEE3503 or CEE3620), CEE3331, CEE3332, CEE3401, CEE3810

TRANSPORTATION DESIGN COURSE, & 2 TRANSPORTATION ELECTIVES

**Engineering Science Elective List (3 credits)**

- BE2700  BIOMEDICAL SIGNALS & SYSTEMS
- CM2110  FUND. OF CHEM ENGRG 1
- CM2200  INTRO TO MINERALS & MATERIALS
- EE3010  CIRCUITS AND INSTRUMENTATION
- MSE2100  INTRO TO MATERIALS SCI & ENGRG
- MEEM2201  THERMODYNAMICS
- MEEM2700  DYNAMICS

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

**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**
   - FA2330, FA2520, FA2720, FA2820, HU2130, HU2324, HU2501, HU2503, HU2538, HU2700, HU2820, HU2910, SS2300
4. **SOCIAL RESP. & ETHICAL REASONING**
   - EC2001, PSY2000, SS2100, SS2200, SS2400, SS2500, SS2501, SS2502, SS2503, SS2504, SS2505, SS2600, SS2610, SS2700

B. **HASS COURSES** (12 CREDITS)

- **COMM/COMP:**
- **HUMANITIES & FINE ARTS:**
- **SOCIAL & BEHAVIORAL SCIENCES:**
- **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)

PE/FA/AR/AF____ PE/FA/AR/AF____
PE/FA/AR/AF____ PE/FA/AR/AF____
PE/FA/AR/AF____ PE/FA/AR/AF____

**Note:** Other courses may be used to satisfy the Professional Electives Requirement if approved by the Department of Civil and Environmental Engineering Academic Advisor.

**PROFESSIONAL ELECTIVES**

- Any 1000 or higher level course in Computer Science, Fine Arts or Forestry. (CS, FA, FW)
- Any 2000 or higher level course in Biological Sciences, Chemistry, Construction Management, Geology, Physics or Geospatial Engineering. (BL, CH, CMG, GE, PH, SU)
- Any 2000 or higher level course in Business or Economics (ACC, BUS, EC, FIN, MGT, MIS, MKT, OSM).
- Any 3000 or higher level course in Mathematics, Humanities, Psychology, Social Sciences or University Wide (MA, HU, PSY, SS, UN).
- Any 3000 or higher level course in Civil and Environmental Engineering (CEE) or any other Engineering Dept.

Note: Other courses may be used to satisfy the Professional Electives Requirement if approved by the Department of Civil and Environmental Engineering Academic Advisor.
**Senior Design (SD) Pre-reqs:** (complete 7 of the following)

- CEE3101
- CEE3331, (CEE3202 or CEE3332 or CEE3401), CEE3620, CEE3810, CEE3503, WATER RESOURCES DESIGN COURSE, & 2 WATER RESOURCES ELECTIVES

**Water Resources Requirements**

Choose 1 course from the following

- CEE3202: STRUCTURAL ANALYSIS F, Sp 3 cr.
- CEE3332: FUND. OF CONSTRUCTION F, Sp 3 cr.
- CEE3401: TRANSPORTATION ENGRG F, Sp 3 cr.
- CEE4620: RIVER/FLOODPLAIN HYDRAULICS Fall 3 cr.
- CEE4640: STORMWATER MANAGEMENT & LID Fall 3 cr.
- CEE4665: STREAM RESTORATION Spring 3 cr.

**WATER RESOURCES DESIGN COURSE** (select 1)

- CEE4620: RIVER/FLOODPLAIN HYDRAULICS Fall 3 cr.
- CEE4640: STORMWATER MANAGEMENT & LID Spring 3 cr.
- CEE4665: STREAM RESTORATION Spring 3 cr.

**WATER RESOURCES ELECTIVES** (select 4)

- CEE4502: WASTE TREATMENT Fall 3 cr.
- CEE4503: WATER TREATMENT Spring 3 cr.
- CEE4505: SURFACE WATER QUALITY Fall 3 cr.
- CEE4507: WATER DISTRIBUTION/LOGIN. Spring 3 cr.
- CEE4620: RIVER/FLOODPLAIN HYDRAULICS Fall 3 cr.
- CEE4665: STREAM RESTORATION Spring 3 cr.
- CEE5666: WE PLANNING & MANAGEMENT Var. 3 cr.
- GE3850: GEOHYDROLOGY F, Sp 3 cr.
- GE4800: GROUND WATER ENGRG Spring 3 cr.

**Engineering Science Elective List (3 credits)**

- BE2700: BIOMEDICAL SIGNALS & SYSTEMS
- CM2110: FUND. OF CHEM ENGRG 1
- CM2200: INTRO TO MINERALS & MATERIALS
- EE3030: CIRCUITS AND INSTRUMENTATION
- MEE2100: INTRO TO MATERIALS SCI & ENGRG
- MEEM2201: THERMODYNAMICS
- MEEM2700: DYNAMICS

**GENERAL EDUCATION REQUIREMENTS**

**A. CORE COURSES (12 CREDITS)**

1. **UN1015** (COMPOSITION)
2. **UN1025** (GLOBAL ISSUES) or 3000+ level Modern Language Course

**B. HASS COURSES (12 CREDITS)**

(General Ed Website, left)

- **COMM/COMP:**
- **HUMANITIES & FINE ARTS:**
- **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)

- PE/FA/AR/AF

**PROFESSIONAL ELECTIVES**

UNDERGRADUATE CATALOG: [http://www.mtu.edu/catalog/courses/](http://www.mtu.edu/catalog/courses/)

- Any **1000** or higher level course in Computer Science, Fine Arts or Forestry. (CS, FA, FW)
- Any **2000** or higher level course in Biological Sciences, Chemistry, Construction Management, Geology, Physics or Geospatial Engineering. (BL, CH, CMG, GE, PH, SU)
- Any **2000** or higher level course in Business or Economics (ACC, BUS, EC, FIN, MGT, MIS, MKT, OSM).
- Any **3000** or higher level course in Mathematics, Humanities, Psychology, Social Sciences or University Wide (MA, HU, PSY, SS, UN).
- Any **3000** or higher level course in Civil and Environmental Engineering (CEE) or any other Engineering Dept.

NOTE: OTHER COURSES MAY BE USED TO SATISFY THE PROFESSIONAL ELECTIVES REQUIREMENT IF APPROVED BY THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING ACADEMIC ADVISOR.
Safe drinking water. Air quality. Waste management. Turn your passion into a career as an environmental engineer at the #1 program in MI.

What can you do as an EEN at Michigan Tech? Here’s the short answer:

• Participate in Michigan Tech’s D80 Program, which provides education, research, and service opportunities such as Engineers without Borders and International Senior Design
• Design water systems in rural Panama
• Use state-of-the-art equipment for labs, assignments, research, and projects such as our pilot-scale environmental simulation lab
• Get involved with the Green Campus Enterprise and design and implement projects to improve the sustainability of the Michigan Tech campus

Course Descriptions

Environmental Engineering course descriptions can be found here: MTU.EDU/CATALOG/COURSES

Academic Advising

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Dillman 103
Cara Decker  
EEN '10  

STORMWATER PROGRAM COORDINATOR  
LOWER GRAND RIVER ORGANIZATION OF WATERSHEDS  

Cara works with 23 entities throughout Michigan to coordinate a regional approach to stormwater management and help them manage their stormwater permits. These entities, made up of county, city, village, township, universities, and local school districts, have collaborated on reducing pollutants in stormwater runoff to improve local waterways in the Lower Grand River Watershed. Together with these entities Cara develops practices and techniques to change behaviors of employees and residents to view water as a valued resource and to promote watershed protection.  

FUN FACT: Cara loves exploring West Michigan, playing soccer, and working out at her local CrossFit gym. She and her husband recently took a career break and traveled the world before settling down in Grand Rapids, MI.
ENVI RONMENTS ENGINEERING FLOWCHART
Academic Year 2020-21

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

Updated: 6/8/20

Fall 1
- MA1160/1161 (C or better)
- ENVE3502
- ENG2120

Spring 1
- MA2160
- MA2520
- SHQE 200
- PH2100

Fall 2
- MA3100
- MA3111
- ENVE502
- ENG3200

Spring 2
- MA3210
- MA3220
- MA3410
- MA3520

Fall 3
- CEE3620
- MA1160/MA2320
- MA3160
- MA3520

Spring 3
- CEE3620
- MA1160/MA2320
- MA3160
- MA3520

Fall 4
- CEE4506
- CEE4520
- CEE4530
- CEE4530

Spring 4
- CEE4506
- CEE4520
- CEE4530
- CEE4530

Total Academic Credits: 131
Total Co-Curricular Units: 3
Professional Electives

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

ANY 3000 OR HIGHER LEVEL COURSE IN CIVIL AND ENVIRONMENTAL ENGINEERING OR IN ANY OTHER ENGINEERING DEPARTMENT. FOR EXAMPLE:
CEE3332 Fundamentals of Construction Engineering (F, S)
CEE4507 Distribution and Collection (S)
CEE4511 Solid and Hazardous Waste Engineering (S)
CEE4515 Atmospheric Chemistry (S)
CEE4518 Aquatic Biogeochemistry (F)
CEE4528 Global Biogeochemistry (F)
CEE4610 Water Resources System Modeling & Design (S)
CEE4620 River and Floodplain Hydraulics (F)
CEE4640 Stormwater Management and LID (S, Su - ONLINE)
CEE4650 Hydraulic Structures (F)
CEE4820 Foundation Engineering (F)
CEE4830 Geosynthetics Engineering (S – ALT YEARS)
CEE4990 Special Topics (Varies by semester) (F, S, Su)
EC4610 Water Resources System Modeling & Design (S)
EC4620 River and Floodplain Hydraulics (F)
EC4640 Stormwater Management and LID (S, Su - ONLINE)
EC4650 Hydraulic Structures (F)
EC4820 Foundation Engineering (F)
EC4830 Geosynthetics Engineering (S – ALT YEARS)
EC4990 Special Topics (Varies by semester) (F, S, Su)

ANY 1000 OR HIGHER LEVEL COURSE IN BIOLOGY, CHEMISTRY, COMPUTER SCIENCE, CONSTRUCTION MANAGEMENT, GEOLOGY, FORESTRY, OR PHYSICS. FOR EXAMPLE:
CS1121 Intro to Programming I (F, S, Su)
CS1122 Intro to Programming II (F, S, Su)
FW3540 Intro to GIS for Natural Resource Management (S)
FW4220 Wetlands (F)
FW4540 Remote Sensing of the Environment (F)

ANY 4000 OR HIGHER LEVEL COURSE IN MATHEMATICS
FOR EXAMPLE:
MA4610 Numerical Linear Algebra (S)
MA4620 Numerical Methods for PDEs (F)
MA4670 Design and Analysis of Experiments (S)

ANY 2000 OR HIGHER LEVEL COURSE IN BUSINESS OR ECONOMICS. (ACC, BUS, E, FIN, MGT, MIS, MKT).
FOR EXAMPLE:
ACCT2000 Accounting Principles I (F, S, Su)
EC3300 Industrial Organization (F, S, Su)
MKT3300 Principles of Marketing (F, S, Su)
EC4640 Natural Resources Economics (F)
EC4650 Environmental Economics (F)

ANY 2000 OR HIGHER LEVEL COURSE IN GEOSPATIAL ENGINEERING (SU).
FOR EXAMPLE:
SU2000 Surveying & GIS Fundamentals (F, S)

ANY 3000 OR HIGHER LEVEL COURSE IN HUMANITIES, SOCIAL SCIENCES, OR UNIVERSITY WIDE. (HU, SS, UN).
FOR EXAMPLE:
HU120 Technical and Professional Communication (F, S, Su)
SS3520 U.S. Environmental History (F)
SS3801 Science, Technology and Society (F)
SS3811 Energy Security and Justice (S – ALT YEARS)
SS3630 Environmental Policy and Politics (F – ALT YEARS)
SU4000 Seminar Series in Earth, Planetary & Space Sciences (F, S)

NOTES:
• AN OVERALL GPA OF 3.00 IS REQUIRED TO TAKE GRADUATE LEVEL COURSES (5000 LEVEL).
• A MAXIMUM OF TWO (2) GRADUATE LEVEL COURSES MAY BE USED TOWARD YOUR BS ENVE DEGREE.
• OTHER COURSES MAY BE USED TO SATISFY THE PROFESSIONAL ELECTIVES REQUIREMENT IF APPROVED BY THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING ACADEMIC ADVISOR.

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

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
   FA2330, FA2520, FA2720, FA2820, FA2820, FA2330, HU2324, HU2501, HU2503, HU2538, HU2700, HU2820, HU2910, SS2300
4. SOCIAL & BEHAVIORAL SCIENCES:
   EC2001, PSY2000, SS2100, SS2200, SS2400, SS2500, SS2501, SS2502, SS2503, SS2504, SS2505, SS2600, SS2610, SS2700

B. HASS COURSES (12 CREDITS)
   (General Ed Website, left)
   1. COMMUNICATION/COMPOSITION:
      ____________________________________________________________
   2. HUMANITIES & FINE ARTS:
      ____________________________________________________________
   3. SOCIAL & BEHAVIORAL SCIENCES:
      ____________________________________________________________
   4. ANY HASS OR HASS RESTRICTED COURSE:
      ____________________________________________________________

   NOTES:
   • 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)
If you like math, computing, and the outdoors, you may have what it takes to be a **geospatial engineer**.

You can choose from two paths on your way to a degree:

- **Professional Surveying**, prepares students to become State Licensed Professional Surveyors. Core focus is tied to the accurate location of real property boundaries, data capture of the natural/man-made objects on the earth’s surface, and digital mapping for use in design or planning.

- **Geoinformatics**, prepares students to manage large volumes of digital geoinformation that can be stored, manipulated, visualized, analyzed, and shared. Core focus involves applications of managing geoinformation using Geographic Information Science (GIS) tools Remote Sensing, big data acquisition and cloud computing.

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**Course Descriptions**

Geospatial Engineering course descriptions can be found here: [MTU.EDU/CATALOG/COURSES](http://MTU.EDU/CATALOG/COURSES)

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**Academic Advising**

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Dillman 103
Matthew Kunkel
PROJECT SURVEYOR
METRO CONSULTING ASSOCIATES

Matthew stays up-to-date with all the latest surveying technology, processing and extracting topographic features from LiDAR operations, as well as conducting research and utilizing CAD for route, boundary, and ALTA surveys.

FUN FACT: He put his hands-on classroom experience to the test through a co-op with the Michigan Department of Transportation, where he was able to conduct surveys in Eagle Harbor.
UNDERGRADUATE CATALOG:
http://www.mtu.edu/catalog/courses/

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

### Engineering Elective List (3 credits)
- CEE3101 Civil Engineering Materials (3 cr)  
  F, S
- CEE3332 Fundamentals of Construction (3 cr)  
  F, S
- CEE3401 Transportation Engineering (3 cr)  
  F, S
- CEE3810 Soil Mechanics (4 cr)  
  F, S
- ENG3200 Thermo/Fluids (4 cr)  
  F, S
- ENTXXX Enterprise (Except 3960/4950) (var)  
  F, S
- UN3002 Co-op (1-2 cr)  
  F, S, Su

### 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)  
  S

### Surveying Elective List (3 credits)
- SU4010 Geospatial Concepts, Technologies, and Data (3 cr)  
  S
- SU4011 Cadastre and Land Information Systems (3 cr)  
  F (alt yrs)
- SU4012 Geospatial Data Mining and Crowd Sourcing (3 cr)  
  S (alt yrs)
- SU4013 Hydrographic Mapping (3 cr)  
  S
- SU4142 3D Surveying and Modeling w/ Laser Scanner Data (3 cr)  
  On Demand
- SU4996 Special Topics in Geospatial Technologies (var)  
  On Demand
- SU4997 Independent Study in Geospatial Technologies (var)  
  On Demand
- SU4998 Undergrad Research in Geospatial Technologies (var)  
  On Demand

### 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**
   - FA2330, FA2520, FA2720, FA2820, HU2130, HU2324, HU2501, HU2503, HU2538, HU2700, HU2820, HU2910, SS2300

#### B. HASS COURSES (12 CREDITS) (General Ed Website, left)

1. **COMMUNICATION & COMPOSITION:** _________________________
2. **HUMANITIES & FINE ARTS:** _________________________
3. **SOCIAL & BEHAVIORAL SCIENCE:** _________________________
4. **ANY HASS OR HASS RESTRICTED:** _________________________
   - 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)

- PE/FA/AR/AF______
- PE/FA/AR/AF______
- PE/FA/AR/AF______
- PE/FA/AR/AF______
UNDERGRADUATE CATALOG:
http://www.mtu.edu/catalog/courses/

GENERAL EDUCATION (CO-CURRICULAR & HASS LIST):
https://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/
A degree in construction management prepares you to take charge of building projects—from structures and roads to homes and hospitals.

Our accredited program includes a background in accounting, scheduling, and business practices—setting us apart and allowing our students to enjoy 100% job placement.

- Our faculty have decades of real-world construction and construction administration experience
- Our classes are small—providing individual attention and mentoring
- Our Construction Management Program is accredited by the American Council for Construction Education

Course Descriptions
Construction Management course descriptions can be found here: MTU.EDU/CATALOG/COURSES

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Cody Erickson  
CMG '16  
ASSISTANT PRECONSTRUCTION MANAGER  
ELZINGA & VOLKERS  
Cody brings projects from conceptual phase to construction, working with owners, architects, and trade partners. He is involved in the estimating, proposal development, and bid soliciting processes.  
FUN FACT: Every project is different. He’s worked on projects ranging from autonomous vehicle tracks to a new ten story hospital.
Business Elective List (6 credits)
MGT 3000  Organizational Behavior (F, S)  3 cr.
MKT 3000  Principles of Marketing (F, S, Su)  3 cr.
OSM 3000  Operations & Supply Chain Management (F, S, Su)  3 cr.

Technical Elective List (6 credits)
CEE 3331  Professional Practice (F, S)  2 cr.
CEE 3401  Transportation Engineering (F, S)  3 cr.
CEE 3490  Intro to Rail Transportation (F)  1 cr.
CEE 4101  Bituminous Materials (F)  3 cr.
CEE 4233  Structural Timber Design (S)  3 cr.
CEE 4000  Design-Build Project Delivery (On Demand)  3 cr.
CEE 4100  Construction Equipment Management (On Demand)  3 cr.
CEE 4800  Sustainable Construction (S)  3 cr.
CEE 4996  Spec. Topics in CMG (On Demand)  var.
CEE 4997  Ind. Study in CMG (On Demand)  var.
CMG 4000  Design-Build Project Delivery (On Demand)  3 cr.
CMG 4100  Construction Equipment Management (On Demand)  3 cr.
CMG 4800  Sustainable Construction (S)  3 cr.
CMG 4996  Spec. Topics in CMG (On Demand)  var.
CMG 4997  Ind. Study in CMG (On Demand)  var.
SU 2050  Plane Surveying (F)  4 cr.
SU 2220  Route/Engineering Surveying (S)  3 cr.
UN 3002  Undergrad Cooperative Education I  var.

GENERAL EDUCATION REQUIREMENTS

A. CORE COURSES (12 CREDITS)
1. UN1015 (COMPOSITION)
2. UN1025 (GLOBAL ISSUES)
3. CRITICAL AND CREATIVE THINKING
4. SOCIAL RESP. & ETHICAL REASONING

B. HASS COURSES (12 CREDITS) (General Ed Website, left)
1. COMMUNICATION/COMPOSITION: ___________________________
2. HUMANITIES OR FINE ARTS: ______________________________
3. SOCIAL & BEHAVIORAL SCIENCE: _________________________
4. ANY HASS OR HASS RESTRICTED COURSE: _________________
   • 6 credits must be upper-level 3000-4000 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)
PE/FA/AR/AF______ PE/FA/AR/AF______
PE/FA/AR/AF______ PE/FA/AR/AF______
PE/FA/AR/AF______ PE/FA/AR/AF______

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

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

**Dr. Theresa Ahlborn, PE**
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**CMG CAREER ADVISOR**

**CMG CAREER ADVISOR**

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GLRC 317
Nicole Wehner, EEN '16

Nicole handles a wide array of aspects on the job site, ranging from submitting RFIs and ASI coordination, as well as development of water and wastewater master plan documents, water and sewer system modeling, and coordination with contractors, manufacturers, and city officials. She is also responsible for providing itemized inventory of water companies to determine present value and resale value to report to the state. She works with WaterCAD, InfoWater, Civil 3D, and MicroStation to complete her daily tasks.

FUN FACT: She is into off-roading—traveling to MOAB for the Easter Jeep Safari, a major off-roading event. She uses her time in her stock Jeep to adventure out of her comfort zone and explore the outdoors in a unique way.
General Education: Core & Humanities, Arts and Social Sciences (HASS)
24 credits required: 12 credits from Core & 12 credits from HASS
2020-2021

Core Courses: 12 credits required

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>UN1015 Composition</td>
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<tr>
<td>UN1025 Global Issues</td>
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Critical and Creative Thinking: 3 credits
- Select one course

FA2330 Art Appreciation
FA2520 Music Appreciation
FA2720 Sound in Art and Science
FA2820 Theatre Appreciation
HU2130 Introduction to Rhetoric
HU2324 Introduction to Film
HU2501 American Experience in Literature
HU2503 Introduction to Literature
HU2538 British Experience in Literature
HU2700 Introduction to Philosophy
HU2820 Communication and Culture
HU2910 Language and Mind
SS2300 Environment and Society
TA2XX4 Critical & Creative Thinking Core
(Transfer Agreement credit only)

Social Responsibility & Ethical Reasoning: 3 credits
- Select one course

EC2001 Principles of Economics
PSY2000 Introduction to Psychology
SS2100 Introduction to Cultural Anthropology
SS2200 Introduction to Archaeology
SS2400 Introduction to Human Geography
SS2500 United States History to 1877
SS2501 US History Since 1877
SS2502 European History to 1650
SS2503 European History Since 1650
SS2504 World History to 1500
SS2505 World History Since 1500
SS2600 American Government and Politics
SS2610 Introduction to Law and Society
SS2700 Introduction to Sociology
TA2XX8 Social Responsibility & Ethical Reasoning Core
(Transfer Agreement credit only)

Humanities, Arts, and Social Sciences (HASS): 12 credits required

Students must take a minimum of 12 credits in HASS following these requirements:
- 6 credits must be upper level (3000-4999) courses
  - UN1015 AND (UN1025 or Modern Language – 3000 level or higher) are prerequisites to all upper level non-language HASS courses
  - Prerequisites for upper level language courses are appropriate placement score OR required lower level language course
- 3 credits are required from each of the following lists:
  - Communication and Composition
  - Humanities and Fine Arts (HU/FA)
  - Social and Behavioral Sciences (EC/PSY/SS)
- No more than 3 credits from the Restricted HASS list may be counted toward the HASS requirement
- Some courses are on more than one HASS list, on a HASS list and a Core list, or on the HASS list and the STEM list, but each course can satisfy only one requirement

Communication and Composition
- Minimum of 3 credits required

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<td>Technical and Professional Communication 3</td>
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<td>Rhetoric of Science and Technology 3</td>
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<td>FA3133 Contemporary Music: The Search for New Sounds 3</td>
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Humanities and Fine Arts (HU/FA) cont
HU3800 Media and Society 3
HU3802 Media and Globalization 3
HU3810 Technology and Culture 3
HU3825 Environmental Communication 3
HU3830 Creativity, Culture, & Change 3
HU3832 Advanced Digital Presentation 3
HU3840 Organizational Communication 3
HU3850 Cultural Studies 3
HU3852 Surveillance, Media, and Film 3
HU3860 Popular Culture 3
HU3871 New Media Theory 3
HU3872 Color, Visuality, and Culture 3
HU3882 Media Industries 3
HU3890 Documentary 3
HU3910 Language and Globalization 3
HU3940 Language and Identity 3
HU4271 Modern Language Seminar I-French 3
HU4272 Modern Language Seminar II-French 3
HU4273 Modern Language Seminar III-French 3
HU4281 Modern Language Seminar I-German 3
HU4282 Modern Language Seminar II-German 3
HU4283 Modern Language Seminar III-German 3
HU4291 Modern Language Seminar I-Spanish 3
HU4292 Modern Language Seminar II-Spanish 3
HU4293 Modern Language Seminar III-Spanish 3
HU4625 Risk Communication 3
HU4701 Political Philosophy 3
HU4725 Existentialism and Phenomenology 3
HU4890 Topics in Communication 3
IS2001 International Studies in situ-Humanities/Fine Arts
(study abroad credit only) var
IS3001 International Studies in situ-Humanities/Fine Arts
(study abroad credit only) var

Social and Behavioral Sciences (EC/PSY/SS) cont.
PSY2080 Special Topics in Psychology 3
PSY2110 Educational Psychology 3
PSY2300 Developmental Psychology 3
PSY2400 Health Psychology 3
PSY2600 Death and Dying 3
PSY2900 An Introduction to Restorative Practices 3
PSY3010 Theories of Personality 3
PSY3030 Abnormal Psychology 3
PSY3070 Cross-Cultural Psychology 3
PSY3720 Social Psychology 3
PSY4080 Topics in Psychology 3
SS2100 Introduction to Cultural Anthropology 3
SS2200 Introduction to Archaeology 3
SS2210 Evolution of Cities 3
SS2300 Environment and Society 3
SS2400 Introduction to Human Geography 3
SS2500 United States History to 1877 3
SS2501 United States History since 1877 3
SS2502 European History to 1650 3
SS2503 European History since 1650 3
SS2504 World History to 1500 3
SS2505 World History since 1500 3
SS2510 Gender and the Past 3
SS2600 American Government & Politics 3
SS2610 Introduction to Law and Society 3
SS2635 Comparative Politics 3
SS2700 Introduction to Sociology 3
SS3105 Native American and Indigenous Communities 3
SS3110 Food Systems and Sustainability 3
SS3200 Archaeology of the Modern World 3
IS3210 Field Archaeology var
SS3225 Capitalism and the Modern World 3
SS3230 Archaeology of Industry 3
SS3240 Reading the Landscape 3
SS3250 Biological Anthropology 3
SS3260 Latin American Cultural History 3
SS3270 Archaeology of the African Diaspora 3
SS3280 Anthropology of Energy 3
SS3300 Environmental Problems 3
SS3313 Sustainability Science 3
SS3315 Population and Environment 3
SS3400 Contemporary Europe 3
SS3505 Military History of the U.S. 3
SS3510 History of American Technology 3
SS3511 History of Science in America 3
SS3513 History of Making Things: Craft and Industry in America 3
SS3515 History of American Architecture 3
SS3520 U.S. Environmental History 3
SS3530 The Automobile in America 3
SS3540 History of Michigan 3
SS3541 The Copper Country 3
SS3552 Renaissance & Reformation 3
SS3553 Empires in World History 3
SS3560 History of England I 3
SS3561 History of England II 3
SS3570 History of Canada 3
SS3580 Technology and Western Civilization 3
SS3581 History of Science 3
SS3600 American Foreign Policy 3
SS3612 International Relations 3
### Social and Behavioral Sciences (EC/PSY/SS) cont.

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<td>Perceptions of the Modern State and Governance</td>
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<td>Selected Topics in Cyber-Law</td>
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<td>Intellectual Property Management</td>
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<td>Constitutional Law</td>
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<td>Civil Rights &amp; Civil Liberties</td>
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<td>Crime, Incarceration, and Policy</td>
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### Restricted HASS

- No more than 3 credits

### APPROVED TRANSFER COURSES

The following courses are available ONLY by transfer.

#### Communication and Composition

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#### Humanities and Fine Arts (HU/FA)

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#### Social and Behavioral Sciences (EC/PSY/SS)

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Three co-curricular units are required for graduation. A unit involves the same time commitment as an academic semester credit.

**Co-curricular units:**
- Count toward full-time status for financial aid
- Are not included in GPA calculation
- Are not included in the total credits required for a degree
- Will appear on the transcript with a Pass/Fail grade
- Will count toward satisfactory progress for financial aid purposes
- Will not count toward the 12 credits of gradable courses required for recognition on the dean's list or other university honors.

**Repeatability for general education:**
- .5 co-curricular unit courses may be repeated once for general education co-curricular credit.
- 1 co-curricular unit courses may not be repeated for general education co-curricular credit.

### Co-curricular Courses

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**Dominic Oldani, EEN '16**  
**MS Civil Engineering '17**  
**ENGINEERING INTERN I**  
**FARNSWORTH GROUP INC**

Dominic is involved on the project development side, providing technical support from concept through final design. He also conducts field visits to gather information and negotiate conflict resolution. On smaller projects, he serves as a project manager, reporting directly to the owner’s project manager.

**FUN FACT:** As a way to expand his world view, he traveled to see parts of Europe and Asia following graduation.
## Planning Guide

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# Scheduling Worksheet

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**NOTES**

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CEE Academic Advising

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FOR THE LATEST INFORMATION & HOURS:
https://www.mtu.edu/cee/undergraduate/advising

Notes
ABET Accredited

MICHIGAN TECH’S CIVIL, ENVIRONMENTAL, AND GEOSPATIAL ENGINEERING PROGRAMS ARE ACCREDITED BY THE ENGINEERING ACCREDITATION COMMISSION OF ABET, HTTP://WWW.ABET.ORG

ABET accreditation is a significant achievement. We have worked hard to ensure that our program meets the quality standards set by the profession. And, because it requires comprehensive, periodic evaluations, ABET accreditation demonstrates our continuing commitment to the quality of our program—both now and in the future.

Why is ABET accreditation so important?

ABET ACCREDITATION IS PROOF THAT A COLLEGIATE PROGRAM HAS MET STANDARDS ESSENTIAL TO PRODUCE GRADUATES READY TO ENTER THE CRITICAL FIELDS OF APPLIED SCIENCE, COMPUTING, ENGINEERING, AND ENGINEERING TECHNOLOGY.

Your degree is a significant achievement and perhaps the largest investment you will make toward your future. The quality of education you receive makes a big difference in your career success. ABET accreditation:

- Verifies that your educational experience meets the global standard for technical education in your profession.
- Enhances your employment opportunities—multinational corporations require graduation from an accredited program.
- Supports your entry to a technical profession through licensure, registration, and certification—all of which often require graduation from an ABET-accredited program as a minimum qualification.
- Establishes your eligibility for many federal student loans, grants, and/or scholarships.
- Paves the way for you to work globally, because ABET accreditation is recognized worldwide through international agreements, and many other countries’ national accrediting systems are based on the ABET model.
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