Frequently Asked Questions

Q: How do I sign up for a minor?
   Answer: There is a blue Curriculum Add/Drop Form you must fill out and have signed by the minor advisor. Changes are official for a semester when the form is submitted to the Registrar’s Office by Wednesday of week 2.

Q: How do I drop a minor?
   Answer: The blue Curriculum Add/Drop Form is for dropping a minor. You do not need any approval signatures; just fill it out and take it to the Registrar’s Office.

Q: Do credits from a minor double count towards my major?
   Answer: Yes, they may, but you must earn at least 6 credits at the 3000 – 4000 level that do not double count towards your major, except as free electives.

Q: Can I minor in more than one thing?
   Answer: Yes. The six credits not double counting (see above) must be unique for each minor.

Q: When are the courses offered?
   Answer: The course schedule is on the web: http://www.mtu.edu/registrar/
   Note that many courses are on an alternate year schedule.

Faculty Involved with the Alternative Energy Minor:

- Dr. Jeff Allen (MEEM)  jstallen@mtu.edu
- Mr. Jay Meldrum (KRC)  jmeldrum@mtu.edu
- Dr. Michael Mullins (CM)  memullin@mtu.edu
- Dr. Joshua Pearce (MY/EE)  pierce@mtu.edu
- Dr. David Shonnard (CM)  drshonna@mtu.edu
- Dr. Wen Zhou (CM)  wzhou1@mtu.edu
- Dr. Wayne Weaver (EE)  wwweaver@mtu.edu

Minor in Alternative Energy Technology at Michigan Tech

The interdisciplinary minor in alternative energy prepares students for careers in energy and related fields. The search for alternative energy sources is an area that has received great attention on and off over the last few decades. A growing area of research and development is currently occurring in the area of hydrogen fuel cells, biofuels, and solar cells. Such technologies have been suggested for transportation (motor vehicles) and stationary (heating and electricity) applications.

Required credits: 16 cr
Required classes: See other side
Name (please print): ______________________________________________________________________

Student Number: ___________________________

Primary Major: _____________________________

Expected Major Completion Term: ______________

Required Courses (Select one set of courses, 4-8 credits):

_____ CM 3110 Transport/Unit Operations I (3) and CM 3120 Transport/Unit Operations II (3) OR

_____ MEEM 3201 Energy-Thermal-Fluids II (4)

_____ MET 3250 Applied Fluid Mechanics (4) and MET 3361 Applied Thermo and Heat Transfer (3) OR

_____ MY 3100 Materials Processing I (4) and MY 3110 Materials Processing II (4)

Required Courses (Select 3 credits):

_____ EE 2111 Electric Circuits I (3)

_____ EE 3010 Circuits and Instrumentation (3)

_____ EET 3131 Instrumentation (3)

Energy Technologies Courses (Select 4-9 credits):

_____ CM/ENT 3974 Fuel Cell Fundamentals (1) OR

_____ MEEM 4260 Fuel Cell Technology (3)

_____ EC 4620 Energy Economics (3)*

_____ EE 3120 Introduction to Energy Systems (3)

_____ ENG 4510/ENG5150 Sustainable Futures I (3)*

_____ ENG 5520 Sustainable Futures II (3)*

_____ MEEM 4200 Principles of Energy Conversion (3)

_____ SS 3800 Energy Technology & Policy (3)*

Elective Courses (Select 0-5 credits):

_____ CM 4000 Chemical Engineering Research (1-3)**

_____ CM 4550 Industrial Chemical Production (3)

_____ CM 4990 Special Topics in Chemical Engg (1-3)**

_____ EE 4000 Electrical Eng. Undergrad Research (1-3)**

_____ EE 4219 Intro to Electric Machinery & Drives (3)

_____ EE 4227 Power Electronics (3)

_____ EET 3390 Power Systems (3)

_____ ENT 29xx Enterprise Project Work (up to 2 cr)**

_____ ENT 39xx Enterprise Project Work (up to 4 cr)**

_____ ENT 49xx Enterprise Project Work (up to 4 cr)**

_____ MEEM 3999 ME Undergrad Research Project (3)**

_____ MEEM 4220 Internal Combustion Engines I (3)

_____ MEEM 4240 Combustion & Air Pollution

_____ MET 4390 Internal Combustion Engines (3)

_____ MY 4140 Science of Ceramic Materials (3)

_____ MY 4990 MSE Undergraduate Research (1-3)**

*Students are encouraged, though not required, to take at least one of these courses relating to the broader context and societal impacts of alternative technology.

** Topics must be approved.

Courses listed in this minor have the following prerequisites (shown in parenthesis). Concurrency is illustrated by the letter C:

ENT4961 (ENT3950 and ENT3960 and ENT4950 and ENT4960), CM/ENT3974 (CH1112 or CH1150 and CH1151), CM3110 (CM2120 and (MA3520 or MA3521 or MA3530 or MA3560) and MA3160 and PH2100), CM3120 (CM2110 and CM2120 and (MA3520 or MA3521 or MA3530 or MA3560), CM4550 (CH2410) and CM3510(C), EC4620 (EC2001), EE3120 (EE2110 or EE3010 or EE2111) and EE2112 (C), EET2120 (EET1120 and (MA1150 (C) or MA1161 (C) or MA1135 (C), EET3131 (EET1141 or EET2220 or PH2230 or EE2110 or EE3010), ENG4510 (UN2002), MEEM3210 (MEEM2200 and MEEM2700 (C) and (MA3520 or MA3521 or MA3530 or MA3560), MEEM3230 (MEEM3210), MEEM4220 (MEEM3210), MET3250 (MET2130), MET4300 (MET3600), MET4390 (MET3610 or MET4300), MY3110 (MY2110 and MY3100 and (MA3520 or MA3521 or MA3530 or MA3560)), MY4140 (MY2100)

Credits Required = 16

Total Credits _______

Student Signature ____________________________  Date ____________________________

Minor Advisor Signature ____________________________  Date ____________________________

Academic Year 2015-16