

Accelerated Master of Forestry Program

School of Forest Resources and Environmental Science

**A 4+1 program for Michigan Tech students
with enhanced training in Engineering Technology.**

Contacts:

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Summary of Class Requirements:

Required classes	FW5810 – Research methods in natural resources. Fall and Spring.	2 credits	Subtotal 14 credits
	FW5800 – Master’s graduate seminar. Fall and Spring.	1 credit	
	FW5377 - Advanced Forest & Environmental Resource Management II. Fall and Spring.	2 credits	
	MA5701 - Statistical Methods. (or alternate from list) Fall.	3 credits	
	Credits applied to both BS and MF degree	6 credits	
Directed electives	Four classes in wood products, chemistry, or engineering related to environmental products, procurement, or processing OR three classes in the above plus one approved statistics or math course.	12 credits	Subtotal 14-18 credits
	One class in forest biology or advanced GIS if only 9 credits in first category	2-4 credits	
Free electives		0-3 credits	Subtotal 0-3 credits
		Grand total	30-32 credits

Directed Electives

Three or four classes in wood products, chemistry or engineering related to environmental products, procurement, or processing. (9-15 credits)

Fall	Spring
FW 5413 - Sustainable Biomass (3 credits) alternate years beginning 2012- 2013	CE 3332 - Fundamentals of Construction Engineering (3 credits) fall, spring, summer
ENVE 3501 - Environmental Engineering Principles (3 credits) or ENVE 3503 Environmental Engineering (3 credits)*	ENVE 3502 – Environmental Monitoring and Measurement Analysis (3 credits)*
CE 3401 - Transportation Engineering (3 credits) fall, spring, summer	ENVE 4504 - Air Quality Engineering and Science (3 credits) prereq: ENVE 3501 or 3503

ENVE 4505 Surface Water Quality Engineering (3 credits) Prereq: 3501 or 3503	ENVE 4506 - Application of Sustainability Principles & Environmental Regulations to Engineering Practice (3 credits) Prereq: ENVE 3501 or 3503
CH 4610 – Introduction to Polymer Science (3 credits) Prereq: CH 1122 or (ch1160 and CH1161)	CE 4640 – Stormwater Management and Low Impact Development (3 credits) Prereq: forest hydrology and instructor permission
SU 5002 – Infrared technology, Sensors, and Applications (1 credits, on demand)	CE 4665 – Stream Restoration (3 credits) Prereq: forest hydrology and instructor permission
SU 5043 – Topographic Analysis (3 credits, on demand)	SS 5313 - Sustainability Science, Policy, and Assessment (4)
SU 5023 – Geospatial Positioning (3 credits, on demand)	FW 5517 – Soil Biogeochemistry (3 credits) alternate years starting 2011-2012
Summer	
FW 5098 - Advanced Wood Processing (2 credits) (unless have credit for FW 3098)	
CE 5050 - Green Building Design (3 credits)	

*For engineering courses having MA 2160 as prereqs, undergraduate students will need permission for a waiver

One additional statistics or approved math class (3 credits).

Fall	Spring
MA 5711 - Mathematical Statistics I (3 credits). Prerequisites MA 4450 and MA 4760 and MA 4770	FW5510 - Spatial Statistics (3 credits)
MA 5731 - Linear Models (3 credits). Prerequisites MA 4710 and MA 4720 and MA 4760 and MA 4330	FW 5411—Applied Regression Analysis. Offered alternate years starting in 2013-14 academic year (3 credits)
MA 4720—Design and Analysis of Experiments (3 credits)	FW 4900 - Applied Experiment Design and Data Analysis. Offered alternate years starting in 2013-14 academic year (3 credits)
MA 4760—Mathematical Statistics (3 credits). Prerequisite MA 3720	MA 5712 - Mathematical Statistics II (3 credits). Prerequisite MA 5711
EC 4200 – Econometrics (3 credits). Prerequisites EC 2001 or EC 3002 or EC 3003) and (BA 2100 or BUS 2100 or MA 2710 or MA 2720 or MA 3710) and (MA 1135 or MA 1160 or MA 1161	MA 4710 - Regression Analysis (3 credits). Prerequisite MA 2720 or MA 3710
SU 5020 – Data Analysis and Adjustments (3 credits, offered on demand)	MA 4770 - Mathematical Statistics II (3 credits). Prerequisite MA 4760
	MA 5791 Categorical Data Analysis (3 credits, alternate years starting in 2005-06)

One class in forest biology or advanced GIS. 2-4 credits.

Fall	Spring
FW 5368 - Forest Ecophysiology Offered alternate years beginning with the 2012-2013 academic year (2 credits)	FW 5130 - Forest Vegetation Dynamics Offered alternate years beginning with the 2012-2013 academic year (3 credits)
FW 5340 - Population Genetics and Applied Forest Genetics (3 credits)	FW 5135 - Plant Community Ecology Offered alternate years beginning with the 2013-2014 academic year (3 credits)
FW5550 - GIS for Resource Management (4 credits)	FW 5115 - Restoration Ecology Offered alternate years beginning with the 2013-2014 academic year (3 credits)
FW4540 - Remote Sensing of the Environment (3 credits - alternate Fall semesters)	FW 5100 – Advanced Terrestrial Ecology) (3 credits)
FW5540 - Advanced Terrestrial Remote Sensing (4 credits, alternate Fall semesters)	FW5560 - Digital Image Processing: A Remote Sensing Perspective (3 credits, Spring) Pre-requisite: FW5550
	FW4545 - Map Design with GIS (3 credits, alternate Spring) Pre-requisite: FW3540 or FW5550
	FW5555 Advanced GIS concepts and Analysis (3 credits)
	FW5556 GIS Project management (3 credits)

Sample Curriculum after completion of undergraduate degree (assumes no credits taken under senior rule)

6 credits counted towards both degrees (3000 level or higher).

Summer	
FW 5098 - Advanced Wood Processing (2 credits)	
Fall	Spring
MA5701 - Statistical Methods (3 credits)	FW 5800 - Master's Graduate Seminar (1 credit)
FW5810 - Research methods in natural resources (2 credits)	ENVE 4506 - Application of Sustainability Principles & Environmental Regulations to Engineering Practice (3 credits) prereq: ENVE 3501 or 3503
ENVE 3501 - Environmental Engineering Principles (3 credits)	FW 5377 - Advanced Forest & Environmental Resource Management II. (2 credits).
FW 5413 - Sustainable Biomass (3 credits)	FW5555 Advanced GIS concepts and Analysis (3 credits)
	FW 5411 Applied Regression Analysis (3 credits)
Total 13 credits	Total 12 credits

Sample 5-year curriculum (Class number, name and number of credits)

Year 1	Fall	Spring
	UN1001 Perspectives on inquiry (3) FW2051 Field Techniques (1) FW2010 Vegetation of North America (4) MA1135 Calculus for Life Sciences (4) HASS Distribution (3)	UN1002 World Cultures (4) BL2160 Botany (4) CH1150 University Chemistry I (3) CH1151 University Chemistry Lab I (1) FW1050 Natural Resources Seminar (1) Free Elective (3)
	Total 15 credits	Total 16 credits
Year 2	Fall	Spring
	UN2001 Composition (3) MA2720 Statistical Methods (4) FW3020 Forest Ecology (3) FW3330 Soil Science (4) HASS Distribution (3)	UN2002 Institutions (3) FW1035 Wood anatomy (4) FW3200 Biometrics and Data Analysis (4) FW3540 Intro to GIS (4)
	Total 17 credits	Total 15 credits
Year 3	Fall	Spring
	FALL CAMP FW3010 Practice of Silviculture (4) FW3840 Forest Health (3) FW3600 Wildlife Habitat (3) FW3170 Land Measurements/GPS (1) FW3190 Multi-resource Assessment (3) FW3150 Timber Harvesting (2)	FW4080 Forest Economics and Finance (3) Directed Elective (3) FW3110 Natural Resource Policy (3) FW4140 Vegetation Modeling (2) Directed Elective (3) HASS Distribution (3)
	Total 16 credits	Total 17 credits
Year 4	Fall	Spring
	FW4810 Integrated Resource Assessment (4) HASS Distribution (3) FW4150 Forest Resource Management (3) Free Elective (6)	Free Elective (13) EC3400 Economic Decision Analysis (3) OR BUS2200 Business Law (3) OR PUS2300 Quantitative Problem Solving (3) OR OSM 3200 Project Management (3)
	Total 16 credits	Total 16 credits
Year 5	Fall	Spring
	FW 5098 – Advanced Wood Processing (2 credits, during the summer) MA 5701 Statistical Methods (3) FW 5810 Research Methods in Natural Resources (2) ENVE 3501 – Environmental Engineering Principles (3) FW 5413 – Sustainable Biomass (3) FW 5800 Master's Graduate Seminar (1)	ENVE 4506 – Application of Sustainability Principles & Environmental Regulations to Engineering Practice (3) SS 5313 - Sustainability Science, Policy, and Assessment (4) FW 5377 - Advanced Forest & Environmental Resource Management II. (2) FW5556 Advanced GIS Concepts and Analysis (3)
	Total 12 credits	Total 12 credits

Grand Total: 154 Credits

Directed electives for undergraduates are selected from FW3320 Forest Genetics and Genomics (3 cr.), FW4120 Tree Physiology (3 cr.), FW4220 Wetlands (4 cr.), FW4370 Forest and Landscape Hydrology (3 cr.)