

Accelerated Master of Forestry Program

School of Forest Resources and Environmental Science

**A 4+1 program for Michigan Tech Forestry students
with training in across a Broad Scope for the Forestry Professional.**

Contacts:

Tara L. Bal, Master of Forestry Program Coordinator

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	One class in economics or business related to natural resources or the environment.	3-4 credits	Subtotal 14-20 credits
	One class in wood products, chemistry, or engineering principles	2-4 credits	
	One class in natural resource policy or law.	3-4 credits	
	One class in forest biology	3-4 credits	
	One class in advanced GIS or spatial statistics	3-4 credits	
		Grand total	30-32 credits

Directed Electives

One class in economic or business related to natural resources or environmental topics from the list below (3-4 credits)

Fall	Spring
EC 4640 or 5640 - Natural Resource Economics (3 credits) Prereq: EC 2001 or EC 3002 or FW 4080	FW 4170 - Consulting Forestry (2 credits)
SS 5310 - Ecological Economics (3 credits, on demand)	EC 5620 - Energy Economics (3 credits)*
	EC 4650 or 5650 - Environmental Economics (3 Credits) Prereq: EC 2001 or EC 3002

One class in natural resource policy or law from the list below (3-4 credits)

Fall	Spring
SS 3630 Environmental Policy and Politics (3 credits)	SS 3800 Energy Technology and Policy (3 credits)
FW3760 - Human Dimensions of Natural Resources (3 credits)	SS 5313 - Sustainability Science, Policy, and Assessment (4 credits, on demand)*
SS 5004 Survey Methods	SS 5XXX Water Policy, History, and Governance
FW 5180 – Conservation Ethics (2 credits, alternate years beginning 2013-2014)*	SS 5320 - Special Topics in Environmental Policy (3-9 credits, on demand)*
SS5301 The Policy Process	SS 5302 Governance and Decision Making
SS 5300 - Environmental & Energy Policy (3 credits)*	SS 5350 - Environmental Policy Analysis (3 credits)* Prereq: SS 5300, EC 2001
SS 5318 Public Sector Management	SS 5635 – International Environmental Policy (3 credits, alternate years beginning 2011-2012)*
SS 5400 - Sociology and the Environment (3 credits)*	
SS 5500 - Global Environmental History (3 credits)	
SS 6100 - Advanced Seminar in Energy and Climate Policy (3 credits, alternate years beginning 2012-2013)*	SS 5150 – Natural Hazards and Human Impacts (3 credits, Summer only)

One class in wood products, chemistry, or engineering principles (2-4 credits).

Fall	Spring
FW 5413 - Sustainable Biomass (3 credits) alternate years beginning 2012- 2013 (something is being developed to replace this)	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 4504 - Air Quality Engineering and Science (3 credits) prereq: ENVE 3501 or 3503
SU 5023 – Geospatial Positioning (3 credits, on demand)	ENVE 3502 – Environmental Monitoring and Measurement Analysis (3 credits)*
CE 3401 - Transportation Engineering (3 credits) fall, spring, summer	ENVE 4506 - Application of Sustainability Principles & Environmental Regulations to Engineering Practice (3 credits) prereq: ENVE 3501 or 3503
ENVE 4505 Surface Water Quality Engineering - (3 credits) Prereq: 3501 or 3503	FW 5517 – Soil Biogeochemistry (3 credits) alternate years starting 2011-2012
SU 5002 – Infrared Technology, Sensors, and Applications (1 credits, on demand)	SU 5043 – Topographic Analysis (3 credits, on demand)
CH 4610 – Introduction to Polymer Science (3 credits) prereq: CH 1122 or	CE 4640- Stormwater Management and Low Impact Development (3 credits)

(ch1160 and CH1161)	Prereq: forest hydrology and instructor permission
	CE 4665 – Stream Restoration (3 credits) Prereq: forest hydrology and instructor permission
	SS 5313 - Sustainability Science, Policy, and Assessment (4)
Summer	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 class in advanced GIS (3-4 credits).

Fall	Spring
FW5550 - GIS for Resource Management (4 credits)	FW5560 - Digital Image Processing: A Remote Sensing Perspective (3 credits, Spring) Pre-requisite: FW5550
FW5554 - GPS Field Techniques (2 credits)	FW4545 - Map Design with GIS (3 credits, alternate Spring) Pre-requisite: FW3540 or FW5550
FW4540 - Remote Sensing of the Environment (3 credits - alternate Fall semesters)	FW5555 Advanced GIS concepts and Analysis (3 credits)
FW5540 - Advanced Terrestrial Remote Sensing (4 credits, alternate Fall semesters)	FW5556 GIS Project management (3 credits)
SU4140 Photogrammetry (3 credits). Prerequisite SU2260	

One class in forest biology (3-4 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)
	FW 5115 - Restoration Ecology Offered alternate years beginning with the 2013-2014 academic year (3 credits)
	FW 5100 – Advanced Terrestrial Ecology (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).

Fall	Spring
MA5701 - Statistical Methods (3 credits)	FW5555 Advanced GIS concepts and Analysis (3 credits)
FW5810 - Research methods in natural resources (2 credits)	CE 3332 - Fundamentals of Construction Engineering (3 credits) fall, spring, summer
FW 5800 - Master's Graduate Seminar (1 credit)	FW 5377 - Advanced Forest & Environmental Resource Management II. (2 credits).
EC 5640 - Natural Resource Economics (3 credits) Prereq: EC 2001 or EC 3002 or FW 4080	FW 5130 - Forest Vegetation Dynamics Offered alternate years beginning with the 2012-2013 academic year (3 credits)
SS 5300 - Environmental & Energy Policy (3 credits)*	FW 4170 - Consulting Forestry (2 credits)
Total 12 credits	Total 13 credits

*must be enrolled as a graduate student

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 BUS2300 Quantitative Problem Solving (3) OR OSM 3200 Project Management (3)
	Total 16 credits	Total 16 credits
Year 5	Fall	Spring
	MA5701 Statistical Methods (3) FW5810 Research Methods in Natural Resources (2) EC 5640 Natural Resource Economics (3) SS 5300 Environmental & Energy Policy (3) FW5800 Master's Graduate Seminar (1)	FW 5555 Advanced GIS concepts and Analysis (3) FW 5377 Advanced Forest & Environmental Resource Management II. (2) FW 4170 Consulting Forestry (2) CE 3332 Fundamentals of Construction Engineering (3) FW 5130 Forest Vegetation Dynamics (3)
	Total 12 credits	Total 13 credits

Grand Total: 153 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.)