

	Requirements	Notes	Course	Credits	Term
Ecosystem Science and Management Core	*EAS 507 – Interpreting Research in Ecosystem Science and Management		507	2	W
	3 Ecosystem Science and Management Core	9-12 credits			
	Full list if ESM courses start on page 4.				
SEAS Core	EAS 509 (Natural Systems Core) EAS 510 (Social Systems Core) or a course from the Social Systems distribution list*				
	IAMS Requirement* Two courses; 3CR minimum Please see the 6th page for approved courses.				
Electives	Electives	Must be a graduate level course at 400-level and above			
Analytics	Analytics	EAS 538 (or equivalent) plus one additional analytics course Check analytics list for acceptable			
Capstone or Non-Capstone	Capstone	Option 1: At most 12 credits of EAS 700 (Master’s Thesis) At most 6 credit hours of EAS 701 (Master’s Project) or EAS 702 (Master’s Practicum)			
	Non-Capstone	Option 2: 6-8 credits of ESM approved courses. See advisor for non-opus			
TOTALS	TOTAL “EAS” CREDIT HOURS	Minimum 25 of 42 credit hours			
	TOTAL CREDIT HOURS	Minimum of 42 credit hours			

*IAMS and Social Science Distribution courses can double-count with Core requirements but we do not double-count the actual credits.

**Any waiver or substitution of degree requirement must be approved by the appropriate faculty and submitted to OAP.

Ecosystem Science and Management courses currently being offered and likely to be offered in the next two years* . Courses in other specializations can also count towards course requirements.

ESMC: Ecosystem Science and Management Core; IAMS: Integrated Analytical Methods and Skills; AN: analytics.

*some of these offerings may change

COURSES	INSTRUCTOR	SEMESTER /FREQUENCY	LAB/ FIELD	SEAS/ESMC REQUIREMENTS
Ecology Concepts and Applications EAS 509	Schueller	Fall/every year	Yes	Required Test-out option
Interpreting Conservation Ecology EAS 507	Alofs	Winter/every year	No	Required
Conservation, Restoration and Management				
Restoration Ecology Applications EAS 501.119	Adlerstein-Gonzalez	Fall/every year	Yes	ESMC
Urban Stormwater: Science, design and management EAS 578	Burton/ Nassauer	Fall 2022	No	ESMC/IAMS
Ecological Risk Assessment EAS 523-01	Burton	Fall/every year	No	ESMC
Conservation Biology EAS 517	Foufopoulos	Winter 2022	Yes	ESMC
The Hydrologic Cycle and Water Resources Management EAS 501.077	Gronewold	Winter/every year	No	ESMC/IAMS
Forest Ecology and Management EAS 447	Ibáñez	TBD	Yes	ESMC, IAMS
Fluvial Ecosystems and their Management EAS 520		TBD	No	ESMC
Fluvial Ecosystems Field Lab EAS 521		TBD	Yes	ESMC
Great Lakes Ecosystems and their Management EAS 501.025	Seelbach/Alofs/Reed	Winter 2022	No	ESMC
Food Systems				
Agroecosystem Management EAS 524	Blesh	Winter 2022	No	ESMC
Foundations of Sustainable Food Systems EAS 528	Blesh	Fall 2021	No	ESMC

Diverse Farming systems EAS 553	Perfecto	Fall/every year	No	ESMC,IAMS
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Global Issues

Climate Change vs. Everything Else EAS 519	Burton	Fall/everyyear	No	ESMC
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Ecosystem Health EAS 639	Foufopoulos	Winter/every year	No	ESMC
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Informatics

Principles of GIS EAS 531	Bergen/ Carter	Fall/Winter	Yes	AN, IAMS, ESMC
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Remote Sensing of Environment EAS 541	Bergen	Winter/every year	Yes	AN, IAMS, ESMC
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Field Remote Sensing EAS 501.034	Bergen	May 2wks at UMBS	Yes	IAMS
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Organisms and Systems

Ecology of Fishes EAS 409	Alofs	Winter/every year	Yes	ESMC
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Landscape Ecology EAS 539	Currie	Winter/every year	No	ESMC
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Woody Plants EAS 436	Ibáñez	Fall/every year	Yes	ESMC
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Fall Flora and Ecosystems EAS 501.003 & 004	Kost	Fall/every year	Yes	ESMC
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Soil Ecology EAS 430	Zak	Fall/every year	Yes	ESMC
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Ecosystem Ecology EAS 476	Zak	Winter/every year	No	ESMC
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Statistics, Modeling and Research Skills

Applied Ecosystem Modeling EAS 545	Currie	Winter/every year	Yes	ESMC/IAMS
Multivariate Statistics for Environmental Science EAS 501.077	Gronewold	Fall/Every Year	No	
Analysis and Modeling of Environmental data EAS 549	Ibáñez	TBD	No	
Master's Thesis Development EAS 501	Weeks	Winter/ every year	No	
Conservation and Development EAS 542	Butt	Fall/every	ESMC	
Wildlife 0000? Foufopoulos	EAS 518	Winter		ESMC
Wildlife and Society EAS 501	Carter	Fall		ESMC

Additional courses of interest:

ANTHRBIO 463 / ENVIRON 473: Statistical modeling and data visualization in R.ANTHR BIO

461 / ENVIRON 461: Seminar in Primate Conservation Biology.

Full List of Ecosystem Science and Management Courses

EAS 409/ENV 409/EEB 487	Ecology of Fishes
EAS/ENV/EEB 430	Soil Ecology
EAS/EEB 433	Ornithology
EAS/ENV/EEB 436	Woody Plants
EAS 447	Forest Ecology Management
EAS/EEB 451	Biology of Mammals
EAS 476/ENV 476/EEB 476	Ecosystem Ecology
EAS 501.119	Ecological Restoration Applications
EAS 501.034	Field Remote Sensing & Analysis (UMBS)
EAS 519	Climate Change vs. Everything Else
EAS 501.077	Multivariate Statistics for Environmental Science (starts Fall 2020)
EAS 501.077	The Hydrologic Cycle and Water Resources Management.
EAS 542	Conservation and Development
EAS 507	Interpreting Research in Ecosystem Science and Management (Winter)
EAS 524	Agroecosystem Management
EAS 501.025	Science and Management of the Great Lakes
EAS 517	Conservation Biology
EAS 518	Wildlife Ecology & Conservation
EAS 520	Fluvial Ecosystems
EAS 521	Fluvial Ecosystems Lab
EAS 523	Ecological Risk Assessment
EAS 528	Foundations for Sustainable Food Systems
EAS 531	Principles of GIS (Should be taken before EAS 534 or any other SEAS GIS courses)
EAS 534	GIS and Landscape Modeling
EAS 539	Landscape Ecology
EAS 545	Applied Ecosystem Modeling
EAS 541	Remote Sensing
EAS 552	Ecosystem Services
EAS 553	Diverse Farming Systems
EAS 561	Psychology of Environmental Stewardship
EAS 562	Environmental Policy, Politics and Organizations
EAS 563	International Environmental Policy
EAS 570	Environ Econ: Quantitative Methods and Tools
EAS 578	Urban Stormwater
EAS 589	Ecological Restoration
EAS 592/URP 542	Environmental Planning
EAS 639	Graduate Seminars (e.g. Watershed Planning, Modeling River Environments, etc.)
EARTH 417	Geology of the Great Lakes
EARTH 449	Marine Geology
EARTH 477/ENVIRON 479	Hydrogeology
ENVIRON 463	Michigan Fishes in Changing Environments (UMBS)
CEE 520	Physical Processes of Land-Surface Hydrology
CEE 521	Flow in Open Channels
CEE 522	Sediment Transport
CEE 527	Coastal Hydraulics
CEE 624	Restoration Concepts
CLIMATE 401/EARTH 401	Geophysical Fluid Dynamics

EEB 442	Biology of Insects (UMBS)
EEB 445	Biogeography
EEB 453	Mammalogy (UMBS)
EEB 457	Algae in Freshwater Systems (UMBS)
EEB 463	Neotropical Plants
EEB 468	Biology of Fungi
EEB 470	Microbial Diversity
EEB 472	Plant-Animal Interactions
EEB 483	Freshwater Ecosystems
EEB 485	Population and Community Ecology
EEB 486	Biology and Ecology of Fishes (UMBS)
EEB 498	Agroecosystems
EEB 556	Field Botany of Northern Michigan (UMBS)

[Integrated Analytic Methods and Skills Requirement](#)

Students are required, at some point during their time enrolled in the program, to take 2 courses composing at least 3 credits from a faculty-approved list of courses that focus on integrative analytic methods and skills. IAMS courses can double-count with core requirements but we do not double-count the actual credits.