

Sustainable Systems

Requirements		Notes	Course	Credits	Term
SS Core 15 credits total	6CR in Systems Analysis for Sustainability	See attached list (A1) of acceptable courses in this specialization			
	Sustainable Design & Technology Minimum 3CR	See attached list (A2) of acceptable courses in this specialization			
	Sustainable Enterprise Minimum 3CR	See attached list (A3) of acceptable courses in this specialization			
	Additional 3CR minimum from list A1, 2, or 3	See attached list (A1-3) of acceptable courses in these specializations			
SEAS Core	EAS 509 (Natural Systems Core) EAS 510(Social Systems Core) or 3CR from the Social Systems Distribution list .				
	*IAMS Requirement Two courses; 3CR minimum Please see page 3 for approved courses.				
Analytics	One statistics course.	See online list of acceptable statistics courses			
Electives	Electives	Graduate level course at 400-level or above. See attached list of recommended courses.			
Capstone or Non-Capstone	Option 1: Master's Project, Thesis, or Practicum	At most 6 credit hours of EAS 701 (Master's Project) or EAS 702 (Master's Practicum) or At most 12 credits of EAS 700 (Master's Thesis)			
	Option 2: Additional coursework	3CR from list A1,A2, or A3 or B1 and additional 3CR from approved sustainability course (eg B2). Needs to have a theme in the area you wish to gain additional knowledge. Needs advisor approval.			
TOTALS	TOTAL "EAS" CREDIT HOURS	Minimum 25 of 42 credit hours			
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*IAMS 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.

A. Sustainable Systems Core (1-3)

1) Systems Analysis for Sustainability (at least 6CR*)

EAS 573 (3cr)	Environmental Footprinting and Environmental Input-Output Analysis (W)
EAS 610 (1.5cr)	Advanced LCA Methods & Software Tools (W)
EAS 597 (3cr)	Environmental Systems Analysis (F)
EAS 557/CEE 586 (3cr)	Industrial Ecology (W)
EAS 550/STRAT 566 (3cr)	Systems Thinking for Sustainable Development (W)
EAS 501.023	Tools for Policy and Environmental Analysis (F)

*At least two courses need to be from the courses listed above

EAS 570 (3cr)	Environ Economics: Quantitative Methods & Tools (F)
EAS 531 (4cr)	Principles of GIS (F&W)

2) Sustainable Design & Technology (3CR)

EAS 537 (3CR)	Urban Sustainability (F)
EAS 501.087 (3CR)	Technology and Community Sustainable Development (F)
EAS 615 (3CR)	Renewable Electricity and the Grid (W)
EAS 574/PUBPOL 519 (3cr)	Sustainable Energy Systems (F)
EAS 605/BA 605 (3cr)	Green Development (W)
EAS 677.023 (2)	Deep Decarbonization (W)
EAS 687 (4cr)	Landscape Planning (F)
ARCH 575 (3cr)	Building Ecology (F)
CEE 480 (3cr)	Design of Environ Engineering Systems (F)
CEE 582 (3cr)	Environmental Microbiology (F)
MECHENG 589 (3cr)	Sustainable Design of Technology Systems (W)

3) Sustainable Enterprise (3CR)

EAS 530 (3cr)	Decision-Making for Sustainability (F)
EAS 525 (3cr)	Energy Justice (F)
EAS 535/BL 536 (2.25cr)	Ethics Corporate Management (TBD)
EAS 512/Strategy 564	Strategies for Sustainable Development I (F)
EAS 513/Strategy 565	Strategies for Sustainable Development II (F)
EAS 527/BE 527 (3cr)	Energy Markets and Energy Politics (F)
EAS 533 (3cr)	Negotiation Skills (F)
EAS 595/TO 560 (1.5)	Sustainable Operations and Supply Chain Management (W)
BE 555 (1.5)	Non-Market Strategy (F)
EAS 560/URP 544 (3cr)	Behavior and Environment (F)
EAS 576/CEE 588/ChE 590 (3cr)	Sustainability Finance: Investment Model for Green Growth (F)
ENGR 521 (3cr)	CleanTech Entrepreneurship (W)
FIN 637 (2.25cr)	Finance and Sustainable Enterprises (F)
FIN 583 (1.5cr)	Energy Project Finance (W)

B. Sustainable Systems Electives

B1) Additional SS courses (can count towards Non-Opus option)

EAS 572(2cr)	Environmental Impact Assessment (F)
EAS 523(3cr)	Environmental Risk Assessment (W)
EAS 552 (3cr)	Ecosystem Services (F)
EHS 672 (3cr)	Life Cycle Assessment: Human Health & Environ Impacts (F)
EAS 686/HMP 686/PubPol 563 (3cr)	Environmental Policy (W)
BA 612 (2.25cr)	Strategies for the Base of the Pyramid (F)
ESENG 501 (3cr)	Seminars in Energy Science, Technology, and Policy (F)
Econ 437 (3cr)	Energy Economics & Policy (W)
URP 553	Sustainable Urbanism and Architecture (F)

B2) Sustainable Systems Themes:

- [Energy Systems](#)
- [Mobility Systems](#)
- [Water Systems](#)
- [Food Systems](#)
- [Built Environment](#)
- [Climate Change](#)

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. The faculty-approved existing courses that satisfy this requirement are listed below:

Fall

447 – Forest Ecology Management
 501 – Ecological Restoration Applications
 501 – Multivariate Stats for Environmental Science (in 2020)
 523 – Ecological Risk Assessment
 530 - Decision-Making for Sustainability
 531 – Principles of GIS
 533 – Negotiation Skills
 535 – Mediation Skills
 552 – Ecosystem Services
 553 – Diverse Farming Systems
 564 – Localization Seminar
 567 – Social Vulnerability & Adaptation to Environ Change
 570 – Environmental Economics
 572 – Environmental Impact Assessment
 576 – Sustainability Finance
 578 – Urban Stormwater (every other year)
 597 – Environmental Systems Analysis
 677 – Climate Adaptation Seminar
 687 – Landscape Planning

Winter

501 – Science and Management of the Great Lakes
 501 – The Hydrologic Cycle and Water Res Mgmt
 531 – Principles of GIS
 532 – Natural Resource Conflict Management
 541 – Remote Sensing
 545 - Applied Ecosystem Modeling
 549 – Analysis and Modeling of Ecological Data
 550 – Systems Thinking for Sustainable Development
 557 – Industrial Ecology
 569 – Stakeholder Network Analysis
 575 – Climate Economics and Policy
 581 – Advanced Education for Environment and Sustainability
 610 – Advanced LCA Methods and Software Tools
 641 – Social Research Methods in Environment and Sustainability
 787 – Metro Studio (MLA only)