

NREM MEM Concentration Areas Course Listing
(Updated March 1, 2022)

The following courses are approved for the four M.S. MEM Concentration Areas. Petitions for course additions or substitutions to a given concentration area will be considered on an ongoing basis (to be submitted to the NREM Curriculum Committee via a student's faculty advisor). Select courses are approved for two areas, but they may only be counted once towards the total of 18 credits (i.e., no double dipping). Courses listed below have been offered in the past, but there are no guarantees regarding when or how often they will be offered in the future, as course offerings are dependent upon instructor availability and expertise, and departmental resources.

When planning your courses, remember:

- you need 18 total credits, with 9 credits from your specialization concentration area and 3 credits from each of the other three concentration areas;
- 12 of the 18 total credits must be NREM classes;
- no more than 12 credits are allowed from 400-level classes; and
- you have to complete required prerequisites (identified in parentheses after each course) prior to enrolling in a course.

Courses Approved by Concentration Area

*Prerequisites are in parentheses following the course name

Applied Terrestrial Ecology

- NREM 450 Wildlife Ecology & Management (BIOL 172 or consent)
- NREM 467: Natural Resources Conservation Planning
- NREM 480 Applied Forest Ecology (NREM 301 and 380 or consent)
- NREM 491 Topics in NREM: Reptile and Amphibian Conservation and Management
- NREM 491 Topics in NREM: Terrestrial and Marine Mammal Management, Science and Regulation
- NREM 610 Advanced Methods in Wildlife Management & Conservation (Graduate standing or consent)
- NREM 680 Ecosystem Ecology (Advanced undergraduate coursework in ecology and soil science and graduate standing; or consent)
- NREM 682 Restoration Ecology (Advanced undergraduate ecology course and graduate standing, or consent)
- NREM 685 Landscape Ecology (Graduate standing or consent)
- NREM/BOT/ZOOL 690 Conservation Biology
- NREM 691 Advanced Topics in NREM: Forest Nutrition and Biogeochemistry (Graduate standing or consent)
- NREM 691 Advanced Topics in NREM: Quantitative Ecosystem Carbon
- NREM 691 Advanced Topics in NREM: Sustainable Agroforestry
- NREM 691 Advanced Topics in NREM: Remote Sensing of Tropical Island Penology
- NREM 691 Advanced Topics in NREM: Conservation Biology and Modeling
- NREM 691 Advanced Topics in NREM: Modeling Principles for Natural Resources Management

- NREM 691 Advanced Topics in NREM: Terrestrial and Marine Mammal Regulation
- NREM 691 Advanced Topics in NREM: Botanical Conservation Collection - from Discovery to Restoration
- BOT 444/SUST 445 Ethnoecology and Conservation (BOT 440, and 350 or 453 or GEOG330; or consent)
- BOT 454 Plant Community Ecology; (BOT 202 or Consent)
- BOT 456 Plant-Animal Interactions (BOT 201/201L or BIOL 265/265L)
- BOT 612 Advanced Problems (Plant-animal on Islands)
- BOT 612 Plant Reproductive Ecology
- BOT 651 Invasion Biology (One of BOT 453, 456, MICR 485 OR ZOO 439; and BOT 462 or BIOL 375; or consent)
- BOT 661 Hawaiian Vascular Plants (BOT 461 or consent)
- TPSS 481 Weed Science (TPSS 200 and CHEM 152, or consent)
- TPSS 604 Advanced Soil Microbiology (TPSS 304 and MICR 351, or consent)
- ZOO 439 Animal Ecology (BIOL 265 and MATH 205 or MATH 215 or MATH 241; or consent)
- ZOO 606 Principles of Animal Behavior

Environmental Policy & Economics

- NREM 420 Community and Natural Resource Management (2 social science courses or consent)
- NREM/ECON/TPSS 429 Spreadsheet Modeling for Business and Economic Analysis (NREM 220 or ECON 130, and NREM 310 or ECON 321; or consent)
- NREM 491/HWST 458/BOT 458 Natural Resource Issues and Ethics in Hawai‘i (HWST 457/ BOT457, HWST 107 and Junior standing; OR instructor consent)
- NREM 611 Resource and Environmental Policy (ECON 300 or ECON 301, or consent)
- NREM 620 Care and Collaborative Management of Natural Resources (Graduate standing or consent)
- NREM 627 Applied Microeconomic Analysis (AREC 626 and ECON 627, or consent)
- NREM 637 Resource Economics (ECON 608 and ECON 629)
- NREM 658 Advanced Environmental Benefit-Cost Analysis (None)
- NREM 671 International Agricultural Systems (Consent)
- NREM 691 Advanced Topics in NREM: Environmental Benefit-Cost Analysis (Summer; Graduate standing or consent)
- NREM 691 Advanced Topics in NREM: Valuing Nature (Graduate standing or consent) (not offered until Spring 2018)
- NREM 691 Advanced Topics in NREM: Coastal and Marine Management Policy
- GEOG 413 Resource Management (Junior standing or higher)
- GEOG 621 Coastal Management and Planning (None)
- GEOG 622/PLAN 622 Environmental Impact Assessment (Graduate standing)
- GEOG/PLAN 637 Environment and Development (None)
- GEOG 639 Community Natural Resource Management
- HWST 651 ‘Āina Waiwai: Water, Food Sovereignty, and Ancestral Abundance
- LWEV 582 Environmental Law
- LWPA 584 Emerging Hawai‘i Water Issues
- PLAN 620 Environmental Policies and Programs (PLAN 600 or concurrent or consent)

- PLAN 625 Climate, Energy & Food (PLAN 620 or concurrent or consent)
- PLAN 628 Urban Environmental Problems (PLAN 600 or consent)
- PLAN 640 Land Use Policies and Programs (PLAN 600 and 601 or consent)
- PLAN 671 Disaster Management: Understanding the Nature of Hazards (PLAN 670 or consent)

Geospatial Analysis & Modeling

- NREM 477 GIS for Resource Managers (Either NREM 310 or MATH 140 or MATH 373, and NREM 301; or consent)
- NREM 640 Land System Science (Graduate standing or consent)
- NREM 664 Small Watershed Modeling (CEE 424 or concurrent or EARTH 425 or concurrent or BS degree from NREM, or consent)
- NREM 677 Remote Sensing of the Environment (1 Physics course (e.g. PHYS 151), 1 calculus course (e.g. NREM 203), and 1 statistics course (e.g. NREM 310), or consent)
- NREM 691 Advanced Topics in NREM: Remote Sensing of Tropical Island Penology
- GEOG 470 Remote Sensing (GEOG 370 or consent)
- GEOG 471 3D Mapping and Analysis
- GEOG 472 Field Mapping (Junior standing or higher, or consent)
- GEOG 489 Applied GIS (NREM 477 or an introductory course is recommended)
- PLAN 473 GIS for Community Planning (Junior standing or higher)
- PLAN 673 Info Systems for Disaster Management and Humanitarian Assistance (PLAN 670 or consent)
- TPSS/GEOG 680 Geospatial Analysis of Natural Resource Data (GEOG 388 or ZOO 631; or consent)

Land & Water Resource Management

- NREM 460/TPSS 450 Sustainable Nutrient Management in Agroecosystems (NREM 304 and CHEM 161)
- NREM 461 Soil and Water Conservation (NREM 301 or 304)
- NREM 463 Irrigation and Water Management (NREM 203 (or equivalent) and
- NREM 467 Natural Resource Conservation Planning
- NREM 612 Predicting & Controlling Degradation in Human-Dominated Ecosystems (NREM 301 and 304 (or equivalent) and 600)
- NREM 620 Collaborative Care and Management of Natural Resources
- NREM 631 Sustainable Agriculture Seminar
- NREM 640 Land System Science (Graduate standing or consent)
- NREM 660 Hydrologic Processes in Soils (none)
- NREM 662 Watershed Hydrology (NREM 203 or equivalent and 304 or equivalent; or consent)
- NREM 664 Small Watershed Modeling (CEE 424 or concurrent or EARTH 425 or concurrent or BS degree from NREM, or consent)
- NREM 665 Coastal and Wetland Ecology and Management
- NREM 691 Advanced Topics in NREM: Aquatic Toxicology
- NREM 691 Advanced Topics in NREM: Fisheries Ecology
- NREM 691 Advanced Topics in NREM: Quantitative Ecosystem Carbon
- NREM 691 Advanced Topics in NREM: Terrestrial and Marine Mammal Regulation

- BIOL 450 Natural History of Hawaiian Islands (1 semester of biological sciences)
- EARTH 654 Groundwater Contamination
- GEOG 405 Water and the Environment (Pre: 101 or 300 or 400 or 401 or 402 or MET 101 or MET 200 or MET 302 or MET 303 or MET 310, or consent. DP)
- GEOG 423 Human Dimensions of the Coastal Ocean (Junior standing or consent)
- GEOG 618 Human Environment Systems (Graduate standing or consent)
- HWST 455 Ola I Ka Wai; Water and Sovereignty in Hawai‘i (HWST 307 and HAW 202 (or concurrent) or consent.)
- HWST 457/BOT 457 ‘Āina Mauliola: Hawaiian Ecosystems (HWST 107, BOT 105, and Junior standing; or consent)
- HWST 459/BOT 459/SUST459 Strategies in Hawaiian Resource Use (HWST 457 or BOT 457 (or concurrent), or consent)
- HWST 650 Hawaiian Geography and Resource Management (HWST 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 390 (or concurrent) or 490 (or concurrent))
- HWST 651 ‘Āina Waiwai: Water, Food Sovereignty, & Circular Economies
- HWST 659 Land, Leadership & Resources
- LWEV 588 Legal Aspects of Water Resources and Control (None)
- OCN 457 Coastal Ecosystem Ecology (OCN 201, 201 Lab, and OCN 310)
- ZOOL 410 Corals and Coral Reefs (BIOL 265)

Options for Research Methods courses

- NREM 691 Introduction to R for Biologists (baseR)
- NREM 691 Principles of Modeling
- NREM 691 Conservation Biology and Modeling

*Other courses, as approved by adviser