

Curriculum for the Environment and Ecology

Environmental Studies Major, B.A.

~~The environmental studies major is appropriate~~ This major is designed for students seeking rigorous interdisciplinary preparation in the social sciences and humanities needed to understand how society affects the environment, how it organizes itself to respond to environmental problems, and how understanding of the environment is transmitted through culture. ~~All students gain a sufficient base of scientific and mathematical expertise to allow them to work effectively with environmental scientists and engineers.~~ The major ~~also provides strong preparation~~ prepares students for graduate and professional training, especially in environmental policy, journalism, education, and law.

Core Requirements

• ENEC 201, ~~and~~ 202, and 698

~~• ENEC 307 and 698~~

• One of the following *earth system science* courses: BIOL 201; ENEC 222 or; ENE 489 or MASC/ENE 448; ENEC/GEOL 324 and+ 324L; GEOG 412; ENEC/ENVR 403; ENEC/GEOL 213110, 215, ENEC/GEOL 324 and 324L; ENEC/MASC 448; GEOG 412; GEOL 110

• ~~One~~ Two courses from one of the following ~~courses~~ skills categories:

- GIS (ANTH 419, ENEC 479, GEOG 370, 477, or 370, 491, 541, 591, 592)
- Remote Sensing (GEOG 370, 477, 577; GEOL/MASC 483)
- Statistics (STOR 155, BIOS 600, ENEC 562, ECON 400, ENEC 562, STOR 155)

• Five courses chosen from one of the following *concentrations*:

- Agriculture and Health (ANTH 237*, 252, 306, 319; ANTH/ENE 238; ENEC/GEOL 324, 324L; ENEC 325, 370, 395 or 396, 420, 693H or 694H; ENEC/ENVR 522; GEOG 434, 457, 542; PLCY 475, 485

*pending approval of ANTH 237 as a new course

- Ecology and Society (ANTH 226, 318, 320, 439; ANTH/ENE 238, 460; BIOL 201, 272, 277, 402, 427, 461, 463, 464, 465, 469, 561, 565, 567; BIOL/ENE 256, 461, 562; CHIN 356; ENEC 222, 304, 352, three hours of 395 or , three hours of 396, 462, 479, 489, 491, 693H or 694H; ENEC/GEOG 264; ENEC/GEOL 324; ENEC/GEOL/MASC 450; ENEC/MASC 352*, 441, 444, 448, 471; ENEC/PLCY 372, 520; ENEC/POLI 254; GEOG 228, 232, 261, 423, 434, 444, 470, 597; PLAN 641)

*pending approval of ENEC 352 crosslist with MASC

Energy and Sustainability

~~—Agriculture and Health (ANTH 237*, 252, 306, 319; ANTH/ENEC 238; ENEC/GEOL 324, 324L; ENEC 325, 370, 395 or 396, 420, 693H or 694H; ENEC/ENVR 522; GEOG 434, 457, 542; PLCY 475, 485~~

~~*pending approval of ANTH 237 as a new course~~

~~BUSI 507; ENEC 208, 306, 325, 350, 370, 393, 395, 396, 482, 485, 491, 492, 581, 586, 685, 693H or 694H; ENEC/ENVR/PLAN/PLCY 585, 686; ENEC/GEOL 324; ENEC/JOMC 565; ENEC/PLAN 330, 420; ENEC/PLCY 480; GEOG 237, 414, 441; PHYS 131; PLAN 246, 247, 547, 641~~

- ~~Environmental Behavior and Decision Making (ANTH 422, 539; BIOL/MATH 452; BUSI 507; COMM/ENEC 375; ENEC 305, 306, 309, 312, 325, 350, 351, 380, 395 or 396, 462, 474, 485, 580, 581, 586, 491, 492, 675, 685, 693H or 694H; ENEC/ENVR 470; ENEC/ENVR/PLAN/PLCY 585; ENEC/GEOL 324; ENEC/JOMC 565; ENEC/PLCY 372, 480; ENEC/POLI 254; GEOG 237, 435, 470; PLAN 547, 641; PLCY 475)~~
- ~~Population, Environment, and Development (ANTH 318, 319, 439, 459, 539; ANTH/ENEC 238; ENEC 266, 325, 350, 351, 370, 380, 395, or 396, 485, 491, 492, 580, 693H or 694H; ENEC/GEOL 324; ENEC/PLCY 520; ENVR 600; GEOG 237, 269, 445, 450, 452, 457, 470; PLCY 475)~~

~~**Additional Requirements:** (All General Education category requirements must be noted where satisfied, some with specific courses):~~

- ~~BIOL 101 +/101L required (Approaches physical and life sciences with laboratory requirement)(CI, PX)~~
- ~~CHEM 101 +/101L or PHYS 104 or 114 or 118 required (Approaches physical and life sciences requirement)(PX)~~
- ~~CHEM 102 +/102L or PHYS 105 or 115 or 119 required (PX)~~
- ~~ECON 101 required (SS Approaches social and behavioral sciences requirement)~~
- ~~MATH 231 required (QR)~~
- ~~ECON 400 or STOR 155 (Connections quantitative intensive requirement)~~
- ~~ENEC 325 or COMM/ENEC 375 or ENEC/PHIL 368 recommended (Approaches philosophical and moral reasoning requirement)~~
- ~~MATH 231 (Foundations quantitative reasoning requirement)(QR)~~
- ~~Enough free electives to accumulate at least 120 credit hours. Recommended courses are ECON 400 (QI) and one of the following PH courses: ENEC 325, COMM/ENEC 375, or PHIL/ENEC 368.~~

Suggested Program of Study for B.A. Majors

First Year

- ENEC 201 (SS, GI); BIOL 101/101L; MATH 231; ECON 101; language levels 2 and 3 (FL); ENGL 105 (CR); lifetime fitness; Approaches and Connections (2 courses)

Sophomore Year

- ENEC 202; CHEM 101/101L or PHYS 114 or 118; CHEM 102/102L or PHYS 115 or 119; one earth system science core; two courses from the concentration core; Approaches and Connections (two courses)

Junior Year

- Two courses from the environmental skills core; two courses from the concentration core; ECON 400; Approaches and Connections (3 courses); free elective course;

Senior Year

- ENEC 698; remaining environmental concentration core courses; remaining Approaches and Connections courses; free electives as needed to complete a minimum of 120 academic hours

Environmental Science, B.S.

~~The environmental science~~This major is ~~appropriate~~designed for students ~~interested in solving complex environmental and energy resource related problems. The major includes preparation in the basic sciences related to environmental study and the application of those principles to the analysis of environmental processes and problems. It focus~~inges on such topics as how material and energy are moved and transformed in complex environmental systems, the role of society in perturbing those processes, and scientific techniques which might be used to improve environmental quality. The degree provides ~~strong interdisciplinary~~ preparation for graduate or professional training as well as for jobs in government, consulting, and industry.

Core Requirements

- ~~ENEC 201, -and-203, and 698~~
- ~~ENEC 698~~
- ~~One~~Two of the following *earth system science* courses: BIOL 201; ENEC 202; ENEC 222 or ENEC 489 or ~~ENEC/MASC/ENEC 448; ENEC/GEOL 324 + 324L; ENEC/ENVR/ENEC 403; ENEC/GEOL 324 + 324L; ENEC/GEOL 213-215 or GEOL 110~~
- Two courses from one analytical skills option:
 - Applied Math (MATH 233, 383)
 - GIS and Remote Sensing (ANTH 419; ENEC 479; GEOG 370, 391, 477, 577, 591; GEOL/MASC 483)
 - Statistics (ENEC/BIOL 562, STOR 455, 456; BIOS 511, 550; GEOL 520, 525)
 - Basic Science (BIOL 202, CHEM 261)
- Five courses chosen from one of the following concentrations:

~~Water and Climate (BIOL 350/ENVR 417/GEOL 403/MASC 401; ENEC 222; ENEC/ENVR/ENEC 403; ENEC/GEOG/ENEC 253; ENEC/GEOL/ENEC 211, 213, 324, 417; ENEC/GEOL/MASC 411, 415, 450; ENVR 413, 415, 416, 419, 453; GEOG 370, 412, 414, 416; GEOG 440/GEOL 502; GEOL 202, 417L, 432, 508, 509, 510; GEOL/MASC 430, 483, 503, 506; MASC 312, 314, 390, 432, 460, 490)~~

Ecology and Natural Resources (BIOL 201, 272, 277/277L, 402, 463, 464, 465, 469, 471/471L, 476/476L, 561, 565, 568; BIOL/ENEC 256, 461, ~~562~~, 563; BIOL 462/MASC 440; BIOL 657/ENVR 520/MASC 504; ENEC 222, 304, ~~352~~, 370, 462, 479, 485, 489; [ENEC/BIOL 562](#); ENEC/GEOG 264; ENEC/GEOL 324 [+324L](#); ENEC/GEOL/MASC 450; [ENEC/MASC 352*](#); [ENEC/MASC/ENEC 433](#), 441, 444, 448, 471; ENVR 449; GEOG 444; MASC 443, 445)

*The ENEC 352 crosslist with MASC is pending approval.

Energy and Sustainability

~~ENEC 306, 307, 325, 350, 380, 431, 479, 482, 485, 580, 581, 586, 685; ENEC/ENVR 403; ENEC/ENVR/PLAN/PLCY 585, 686; ENEC/GEOL 324; ENEC/GEOL/MASC 415; ENEC/PLCY 480; ENVR 451; GEOL 215; PHYS 131/131L; PLAN 547~~

Environment and Health (BIOL 402, 568; BIOL/PATH 128; [CHEM 261](#); ENEC 222; ENEC/ENVR 403, 522; ENEC/GEOL 324; ENEC/MASC 444; ENVR 412, 413, 416, 419, 421, 430, 431, 442, 451, 600; EPID 600; MASC 443)

~~*Water and Climate* ([BIOL 350/ENVR 417/GEOL 403/MASC 401; ENEC 222; ENVR/ENEC 403; GEOG/ENEC 253; GEOL/ENEC 211, 213, 324, 417; ENEC/GEOL/MASC 411, 415, 450; ENVR 413, 415, 416, 419, 453; GEOG 370, 412, 414, 416; GEOG 440/GEOL 502; GEOL 202, 417L, 432, 508, 509, 510; GEOL/MASC 430, 483, 503, 506; MASC 312, 314, ~~390~~, 432, 433, 460, 490](#)~~)

Additional Requirements:

- ~~BIOS 600 or STOR 155~~
- [BIOL 101+101L required \(CI, PX\)](#) ~~required~~
- [CHEM 101+101L and CHEM 102 and +102L required \(PX\)](#) ~~required~~
- COMP 116 [or 110 required](#) ~~(QR) required~~
- ~~MATH 233~~
- ~~PHYS 116 and 117, or PHYS 118/ and 119, or PHYS 104 and 105, or PHYS 114/ and 115 required (PX) required~~
- ~~BIOS 511 or STOR 455 or ENEC 562 (required)~~
- [MATH 231 required \(QR\)](#)
- [MATH 232 required \(QI\)](#)
- ~~recommended recommended~~ • ~~BIOS 511 or STOR 455 or ENEC 562 recommended~~
- ~~MATH 231 (QI) required~~
- ~~MATH 232 (QR) required~~

- ~~Two courses from one of the following options:~~

- ~~• BIOL 202 and CHEM 261~~
- ~~• ENEC 415; MASC 460; MATH 383, 564~~
- ~~• ENEC 562; STOR 455, 456~~
- ~~• GEOG 370, 477, 491, 577, 591, 592~~

- Students are required to earn a minor in an allied science, such as biology, chemistry, computer science, geography, geology, information ~~and library~~-science, marine science, mathematics, mathematical decision sciences, or physics.
- Enough free electives to accumulate minimum of 120 credit hours. Recommended courses are ENEC 202 (PX), ECON 101 (SS), one of the following PH courses: ENEC 325, COMM/ENEC 375, or PHIL/ENEC 368, and one of the following statistics courses: BIOS 511 or STOR 455 or ENEC 562.

Suggested Program of Study for B.S. Majors

First Year

- ENEC 201 (SS, GD); BIOL 101/101L; CHEM 101/101L; ~~CHEM 102/102L~~; MATH 231; MATH 232; language level 2 (FL); Approaches and Connections (two courses); lifetime fitness

Sophomore Year

- ENEC 203; CHEM 102/102L; one environmental concentration course; one earth system science core course; PHYS 114 or 118; PHYS 115 or 119; COMP 110 or 116; language levels ~~2 and~~ 3 (FL); Approaches and Connections (one course)

Junior Year

- Two courses from the analytical skills core; three courses from environmental concentration core; two courses from a minor field; Approaches and Connections (three courses)

Senior Year

- ENEC 698; remaining environmental concentration core; remaining minor field courses; remaining Approaches and Connections; enough free electives to meet 120 academic hour minimum

~~All General Education requirements must be satisfied, some with specific courses:~~

- ~~• BIOL 101 and 101L (Approaches physical and life sciences with laboratory requirement)~~
- ~~• CHEM 101 and 101L (Approaches physical and life sciences requirement)~~
- ~~• ECON 101 recommended (Approaches social and behavioral sciences requirement)~~

- ~~ENEC/PHIL 368 recommended (Approaches philosophical and moral reasoning)~~
- ~~MATH 231 (Foundations quantitative reasoning requirement)~~
- ~~MATH 232 (Connections quantitative intensive requirement)~~

Environmental Science and Studies Minor

The minor is designed for students wishing to remain in another discipline but having an interest in the environment as an area of application. Students in the minor in environmental science and studies must take two core courses designed as preliminary courses in the scientific and societal dimensions of environmental issues and problems and in the tools for their solution.

- ENEC 201 and ~~either ENEC 202 or 203~~
- Three additional ENEC courses (at least one at the 400 level or higher)

Students must see an ENEC advisor to discuss potential courses. Depending on the courses selected, the minor ~~would~~ require s between 17 and 20 credit hours. [Students in the BA or BS environmental majors may not minor in Environmental Science and Studies.](#)