

Environmental Science Major Advisement Form (2016-2017)

Name _____ Year of Grad. _____ Adviser _____

The Environmental Science Major consists of 53-60 credits including Environmental Science Foundation Courses, Lab Science Courses, and Environmental Science Concentration Electives, chosen depending on advising and the interests of the student. What follows are recommended courses that fulfill the major. All students must take at least 21 credit hours from the list below at Westfield State University (excluding the core science classes).

Requirement for graduation with ENVS Major: GPA of 2.7 or greater

Environmental Science Foundation Courses (26 - 28 Credits)

- ENVS0105 Natural History and Field Techniques
- ENVS0180 Environmental Science First Year Seminar
- MATH0123 Mathematical Methods in the Natural Sciences
- ENVS0101 Principles of Environmental Science or GARP0106 Env. Analysis or BIOL0102 Environmental Biology
- ENVS0225 Natural Resources Cons. And Mgmt. or BIOL 202 Conservation
- ENVS0233 Environmental Legislation
- ENVS0330 Environmental Data Analysis or GARP0246 Quantitative Methods
- ENVS0240 Writing for Environmental Science
- ENVS0390 Senior Seminar

Required Lab Science Classes (15-16 Credits)

- GARP0102 Physical Geography **OR** GEOL0101 Physical Geology with Lab
- CHEM0109 General Chemistry I
- ENVS0210 Env. Chem., Pollution, and Toxicology **OR** CHEM0111 General Chemistry II
- BIOL0128 Introduction to Organismal, Ecological, and Evolutionary Biology

Areas of Study (12-16 Credits. Choose one from each category, plus one additional optional course)

- | Natural | Human | Methods/Technology |
|---|---|---|
| <input type="checkbox"/> ENVS0209 Wildlife Biology | <input type="checkbox"/> ENVS0215 Env. Ed and Com | <input type="checkbox"/> ENVS0230 Est. Wildlife Pop |
| <input type="checkbox"/> ENVS0220 Surf. Gnd. Water | <input type="checkbox"/> ENVS0238 Env. Impact An | <input type="checkbox"/> ENVS0236 Env. Anal II |
| <input type="checkbox"/> ENVS0255 Env. Soil Science | <input type="checkbox"/> ENVS0251 Water Resources | <input type="checkbox"/> ENVS0311 Env. Monitoring |
| <input type="checkbox"/> ENVS0300 Wetland Analysis | <input type="checkbox"/> ENVS0352 Green Sus. Cities | <input type="checkbox"/> BIOL0204 GIS Nat. Sci. |
| <input type="checkbox"/> ENVS0309 Wildlife Cons | <input type="checkbox"/> GARP0215 Unjust City | <input type="checkbox"/> GARP0236 Remote Sens |
| <input type="checkbox"/> BIOL0201 Ecology | <input type="checkbox"/> GARP0217 Global Issues | <input type="checkbox"/> GARP0244 Intro. GIS |
| <input type="checkbox"/> BIOL0202 Conservation | <input type="checkbox"/> GARP0219 Land Use & Res. | <input type="checkbox"/> BIOL 0204 GIS Nat. Sci. |
| <input type="checkbox"/> BIOL0208 Marine Biology] | <input type="checkbox"/> GARP0222 Site Plan. Studio | <input type="checkbox"/> GARP0246 Quant. Methods |
| <input type="checkbox"/> BIOL0211 Plant Biology | <input type="checkbox"/> GARP 0225 Legal Issues | <input type="checkbox"/> GARP0340 Data Col & Anal |
| <input type="checkbox"/> BIOL0216 Flora of Mass | <input type="checkbox"/> GARP0245 Sustain. Energy | <input type="checkbox"/> GARP0344 Adv. GIS |
| <input type="checkbox"/> BIOL0219 Aquatic Biology | <input type="checkbox"/> GARP0250 Political Ecology | <input type="checkbox"/> CHEM0201 Org. Chem I |
| <input type="checkbox"/> BIOL0223 Microbiology | <input type="checkbox"/> GARP0325 Food Sys Planning | <input type="checkbox"/> CHEM0203 Org. Chem II |
| <input type="checkbox"/> BIOL0305 Plant Communities | | |
| <input type="checkbox"/> BIOL0312 Mammalogy | | |
| <input type="checkbox"/> BIOL0334 Animal Behavior | | |
| <input type="checkbox"/> BIOL0325 Ecosystems | | |
| <input type="checkbox"/> GARP0206 Climate Change | | |
| <input type="checkbox"/> GARP0230 Meteorology | | |
| <input type="checkbox"/> GARP0331 Sev.& Un Weather | | |

300 Level Course Requirement (6-8 Credits. You must take at least two 300-level courses from the list below.

These may simultaneously fulfill other requirements in the major)

- ENVS0300 Wetland Analysis and Planning
- ENVS0309 Wildlife Conservation and Management
- ENVS0311 Env. Monitoring and Analysis
- ENVS0330 Env. Data Analysis
- ENVS0352 Planning Green Sustainable Cities
- ENVS0350 Internship (Note: 3.0 GPA required)
- ENVS0399 Independent Research
- GARP0344 Adv. GIS
- BIOL0325 Ecosystems
- BIOL0340 Forest Ecology (lecture or methods)

Environmental Science Minors

Wildlife Conservation Minor

The minor in Wildlife Conservation is designed to allow students who are interested in Wildlife to gain the skills and knowledge necessary to work professionally as wildlife scientists or technicians, to prepare them for graduate study in wildlife or organismal ecology, and to guide their course selection as part of the ENVS major. The minor requires 20-21 credits of course work including: ENVS 0105, ENVS 209, ENVS 0230 or BIOL 128, ENVS 0225, MATH 123 or BIOL 278, AND ENVS 0309.

Wetlands Analysis Minor

The minor in Wetlands Analysis is designed to allow students who are interested in Wetlands to gain the skills and knowledge necessary to work professionally as wetland scientists or to augment other interests they have. The minor requires 20-22 credits of course work including: ENVS 0105; ENVS 300; GARP 0244 or BIOL 0204; and at least three of ENVS 210, ENVS 0215, ENVS 0220, ENVS 0251, and BIOL 0216.

Concentrations

The ENVIRONMENTAL SCIENCE DEPARTMENT recommends that you design a concentration that fits your career goals. These are suggestions of possible informal concentrations:

Water Resources (quality/quantity)

Limited water resources will be the most contested of all resources in the future. Graduates often work for state and local government and organizations such as Springfield Water and Sewer Commission.

- ENVS 0251 Water Resources
- BIOL 0219 Aquatic Biology
- BIOL 0208 Marine Biology
- ENVS 02XX Surf. & GW Hydrol
- GARP 0244 Intro to GIS
- Internship

Environmental Education

- ENVS 0225 Nat. Resource Mgmt
- GARP 0230 Meteorology
- GARP 0345 Green Sust. Cities
- GARP/ENVS 0245 Sust. Energy
- ENVS 0238 Env. Impact Anal.
- BIOL 0233 Env. Leg
- ENVS 0215 Env. Ed & Comm

Geographic Information Systems (GIS)

GIS is one of the most important tools used in environmental science and an essential skill you need in the professional world.

- GIS Minor and/or GIS Cert.
- GARP 0244, 0344, & 0346
- MGMT 0107
- GIS Independent Study
- GIS Internship

Environmental Writer

Having skills of communicating about the environment will serve you in more ways than you think. You can even write about the environment as a career!

- ENVS 0215 Env Ed & Comm
- ENVS 240 Writing for Env. Sci.
- ENVS Major
- Minor in ENGL or COMM

Environmental Planning

Graduates with environmental planning skills often work for state and local government or nonprofit agencies.

- ENVS major
- Regional Planning Major

Environmental Policy

From environmental law to working in government or environmental consulting, understanding the legal aspects of solving environmental issues is critical.

- BIOL 0233 Env. Legislation
- GARP 0225 Legal Issues Planning
- GARP 0215 The Unjust City
- ENVS 0238 Impact Analysis
- ENVS 0215 Env. Ed & Comm
- Political science courses or minor

Environmental Chemistry

Graduates with expertise in Chemistry are in high demand at Analytical Labs

- CHEM 0109
- CHEM 0111
- ENVS 0210 Env Chemistry
- ENVS 0311 Env. Monitoring
- Internship at Analytical Lab
- Independent study, chemistry

Environmental Police / Ranger

Conservation officers require a solid grounding in biology as well as criminal justice and are employed by local, state, and federal natural resource agencies.

- ENVS 0225
- ENVS 0309
- BIOL 0219
- BIOL 0233
- CJ Minor
- Internship

Environmental Activism

Environmental activists combine an understanding of environmental issues with knowledge of the complexities of human institutions in order to effect positive change.

- BIOL 0233 Env. Leg
- ENVS 0215 Env. Ed & Comm
- GARP 0215 Unjust City
- GARP0245 Sustain. Energy
- GARP0250 Political Ecology
- GARP0325 Food Sys. Planning
- GARP/ENVS 0236 Env. Anal. II
- Applied Ind. Study or internship

Climate Change

Climate Change is the most pressing environmental issue of the 21st century and a global reflection of human impact on the environment.

- GARP 0230 Meteorology
- GARP 0206 Climate Change
- GARP 0345 Green Sust. Cities
- GARP/ENVS 0245 Sust. Energy
- GARP/ENVS 0236 Env. Anal. II
- ENVS 0210 Env Chemistry
- ENVS 0311 Env. Monitoring
- Applied Independent Study

Env. / Wilderness Leadership (Minor)

Students interested in careers as outdoor guides often minor in Wilderness Leadership.

- ENVS 0225 Nat. Resource Mgmt
- MOVV 0199 Wilderness Exp.
- MOVV 0245 Adv. Challenge Inst.
- MOVV0250 Tech. Wild. Leaders.
- MOVV XXX Wild. First Resp.
- EDUC 0312 Outdoor Education
- Courses to complete WL Minor