Environmental Science Major Advisement Form (2019-2020)

Name ___________________________ Year of Grad. ___________ Adviser ____________________________

The Environmental Science Major consists of 54-60 credits, depending on advising and the interests of the student. All students must take at least 21 credit hours from the list below at Westfield State University.

**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 ( ) BIOL0102 Env. Biology
- ENVS0225 Natural Resources Cons. And Mgmt. OR ( ) BIOL0202 Conservation
- ENVS0233 Environmental Legislation OR GARP 0225 Legal Issue in Zoning and Planning
- ENVS0330 Environmental Data Analysis OR ( ) GARP0246 Quantitative Methods
- ENVS0240 Writing for Environmental Science OR ENVS0392 Business and Technical Writing
- 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 General Biology II

**Electives - Choose one from each category, plus one additional course (12 – 16 credits)**

<table>
<thead>
<tr>
<th>Natural</th>
<th>Human</th>
<th>Methods/Technology</th>
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<tbody>
<tr>
<td>ENVS0209 Wildlife Biology</td>
<td>ENVS0215 Env. Ed and Comm</td>
<td>ENVS0230 Est. Wildlife Pop</td>
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<tr>
<td>ENVS 0217 Restoration Ecol.</td>
<td>ENVS0238 Env. Impact Anal.</td>
<td>ENVS0236 Env. Anal II</td>
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<td>ENVS0220 Surf. &amp; Gndwater</td>
<td>ENVS0251 Water Resources</td>
<td>ENVS0311 Env. Monitoring</td>
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<td>ENVS0255 Soil Science</td>
<td>ENVS0352 Green Sus. Cities</td>
<td>ENVS0317 Ecol. Restoration</td>
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<td>ENVS0300 Wetland Analysis</td>
<td>GARP0216 The Unjust City</td>
<td>BIOL0204 GIS Nat. Sci.</td>
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<tr>
<td>ENVS0309 Wildlife Cons</td>
<td>GARP0217 Global Issues</td>
<td>GARP0243 Remote Sens</td>
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<tr>
<td>BIOL0201 Ecology</td>
<td>GARP0219 Land Use &amp; Res.</td>
<td>GARP0244 Intro. GIS</td>
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<tr>
<td>BIOL0202 Conservation</td>
<td>GARP0222 Site Plan. Studio</td>
<td>GARP0246 Quant. Methods</td>
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<tr>
<td>BIOL0208 Marine Biology</td>
<td>GARP 0225 Legal Issues</td>
<td>GARP0340 Data Col &amp; Anal</td>
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<tr>
<td>BIOL0211 Plant Biology</td>
<td>GARP0245 Sustain. Energy</td>
<td>GARP0344 Adv. GIS</td>
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<tr>
<td>BIOL0216 Flora of Mass</td>
<td>GARP0250 Political Ecology</td>
<td>CHEM0201 Org. Chem I</td>
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<tr>
<td>BIOL0219 Aquatic Biology</td>
<td>GARP0325 Food Sys Planning</td>
<td>CHEM0203 Org. Chem II</td>
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<tr>
<td>BIOL0223 Microbiology</td>
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<tr>
<td>BIOL0334 Animal Behavior</td>
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<td>BIOL0325 Ecosystems</td>
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<td>BIOL0340 Forest Ecology</td>
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<tr>
<td>GARP0206 Climate Change</td>
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<tr>
<td>GARP0230 Meteorology</td>
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<td>GARP0331 Sev. &amp; Un Weather</td>
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**300 Level Course Requirement - You must take at least two 300-level courses from the list below. These may simultaneously fulfill other requirements in the major (6-8 credits)**

- 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
( ) ENVS0317 Ecological Restoration

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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 a total of 20-21 hours of coursework.
( ) ENVS0225 Nat. Resource Cons. and Management
( ) ENV0309 Wildlife Ecology and Management
( ) ENV0230 Est. Wild Pop. or BIOL0128 Org. Ecol, Evol. Biol
( ) MATH0123 Math Meth Nat Sci. or BIOL0278 Biostatistics

Wetlands Planning and Management Minor
There is a strong demand among consulting firms, state and federal agencies, and not-for-profit organizations for persons with knowledge and experience relevant to wetland resource management.

The minor requires a total of 21 hours of coursework.
( ) ENV0105 Natural History and Field Techniques
( ) ENV0210 Env. Chemistry, Toxicology and Pollution
( ) ENV0300 Wetlands Assessment and Planning
( ) ENV0255 Environmental Soil Science
( ) GARP0244 Intro. GIS OR BIOL0204 GIS Nat. Sci.
( ) ENV0220 Surf. & Gr. Hydrology
OR ENV0251 Water Res. Plan. & Manage.

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

Environmental Policy
From environmental law to working in government or environmental consulting, understanding the legal aspects of solving environmental issues is critical.
( ) BIOL0233 Env. Legislation
( ) GARP 0225 Legal Issues Planning
( ) GARP 0215 The Unjust City
( ) ENV0238 Impact Analysis
( ) ENV0215 Env. Ed & Comm
( ) Political science courses or minor

Environmental Planning
Graduates with environmental planning skills often work for state and local government or nonprofit agencies.
( ) ENVS major
( ) Regional Planning Major

Water Resources Management
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.
( ) ENVS0251 Water Resources
( ) BIOL0219 Aquatic Biology
( ) BIOL0208 Marine Biology
( ) ENV0251 Surf. & GW Hydrol
( ) GARP 0244 Intro to GIS
( ) Internship

Environmental Chemistry
Graduates with expertise in Chemistry are in high demand at Analytical Labs
( ) CHEM 0109
( ) CHEM 0111
( ) ENV0210 Env Chemistry
( ) ENV0311 Env. Monitoring
( ) Internship at Analytical Lab
( ) Independent study, chemistry

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
( ) GIS Independent Study
( ) GIS Internship

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 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!
( ) ENVS0215 Env Ed & Comm
( ) ENVS 240 Writing for Env. Sci.
( ) ENV Major
( ) Minor in ENGL or COMM

Environmental Activism
Environmental activists combine an understanding of environmental issues with knowledge of human institutions in order to effect positive change.
( ) BIOL 0233 Env. Leg
( ) ENVS0215 Env Ed & Comm
( ) GARP 0215 Unjust City
( ) GARP0250 Political Ecology
( ) Applied Ind. Study or internship

Environmental Education
( ) ENVS0225 Nat. Resource Mgmt
( ) GARP 0345 Green Sust. Cities
( ) GARP/ENVS 0245 Sust. Energy
( ) ENVS 0238 Env. Impact Anal.
( ) BIOL0233 Env. Leg
( ) ENVS 0215 Env. Ed & Comm

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
( ) 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
( ) MOPV 0199 Wilderness Exp.
( ) MOPV 0250 Tech. Wild. Leaders.
( ) MOPV XXX Wild. First Resp.
( ) EDUC 0312 Outdoor Education
( ) Courses to complete WL Minor

Ecological Restoration
Understanding how to restore landscapes and communities.
( ) ENVS0217 Restoration Ecology
( ) ENVS0225 Natural Resources
( ) ENVS0233 Environmental Leg.
( ) ENVS0255 Soil Science
( ) ENVS 0317 Ecological Restoration
( ) GARP0244 Intro GIS

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