

# 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)**

#### Natural

- ENVS0209 Wildlife Biology
- ENVS 0217 Restoration Ecol.
- ENVS0220 Surf. & Gndwater
- ENVS0255 Soil Science
- ENVS0300 Wetland Analysis
- ENVS0309 Wildlife Cons
- BIOL0201 Ecology
- BIOL0202 Conservation
- BIOL0208 Marine Biology
- BIOL0211 Plant Biology
- BIOL0216 Flora of Mass
- BIOL0219 Aquatic Biology
- BIOL0223 Microbiology
- BIOL0334 Animal Behavior
- BIOL0325 Ecosystems
- BIOL0340 Forest Ecology
- GARP0206 Climate Change
- GARP0230 Meteorology
- GARP0331 Sev.& Un Weather

#### Human

- ENVS0215 Env. Ed and Com
- ENVS0238 Env. Impact Anal.
- ENVS0251 Water Resources
- ENVS0352 Green Sus. Cities
- GARP0216 The Unjust City
- GARP0217 Global Issues
- GARP0219 Land Use & Res.
- GARP0222 Site Plan. Studio
- GARP 0225 Legal Issues
- GARP0245 Sustain. Energy
- GARP0250 Political Ecology
- GARP0325 Food Sys Planning

#### Methods/Technology

- ENVS0230 Est. Wildlife Pop
- ENVS0236 Env. Anal II
- ENVS0311 Env. Monitoring
- ENVS0317 Ecol. Restoration
- BIOL0204 GIS Nat. Sci.
- GARP0243 Remote Sens
- GARP0244 Intro. GIS
- GARP0246 Quant. Methods
- GARP0340 Data Col & Anal
- GARP0344 Adv. GIS
- CHEM0201 Org. Chem I
- CHEM0203 Org. Chem II

### **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

## 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.

- ENVS 0105 Natural History and Field Techniques
- ENVS 0209 Wildlife Biology
- ENVS0225 Nat. Resource Cons. and Management
- ENVS0309 Wildlife Ecology and Management
- ENVS0230 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.

- ENVS 0105 Natural History and Field Techniques
- ENVS 0210 Env. Chemistry, Toxicology and Pollution
- ENVS 0300 Wetlands Assessment and Planning
- ENVS0255 Environmental Soil Science
- GARP0244 Intro. GIS **OR** BIOL0204 GIS Nat. Sci.
- ENVS0220 Surf. & Gr. Hydrology  
OR ENVS0251 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.

- 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 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.

- ENVS 0251 Water Resources
- BIOL 0219 Aquatic Biology
- BIOL 0208 Marine Biology
- ENVS 0251 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
- ENVS 0210 Env Chemistry
- ENVS 0311 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!

- ENVS 0215 Env Ed & Comm
- ENVS 240 Writing for Env. Sci.
- ENVS 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
- ENVS 0215 Env. Ed & Comm
- GARP 0215 Unjust City
- GARP0250 Political Ecology
- Applied Ind. Study or internship

#### Environmental Education

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

#### Climate Change

Climate Change is the most pressing environmental issue of the 21<sup>st</sup> 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
- MOVV 0199 Wilderness Exp.
- MOVV 0245 Adv. Challenge Inst.
- MOVV 0250 Tech. Wild. Leaders.
- MOVV XXX Wild. First Resp.
- EDUC 0312 Outdoor Education
- Courses to complete WL Minor

#### Ecological Restoration

Understanding how to restore landscapes and communities.

- ENVS 0217 Restoration Ecology
- ENVS 0225 Natural Resources
- ENVS 0233 Environmental Leg.
- ENVS 0255 Soil Science
- ENVS 0317 Ecological Restoration
- GARP 0244 Intro GIS