

Environmental Science Major Advisement Form 2020-2021

Name _____ Year of Grad. _____ Adviser _____

The Environmental Science Major consists of 53-68 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** ENVS0241 Rest. Ecol. **OR** BIOL0202 Conservation
- ENVS0233 Environmental Legislation **OR** GARP0225 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
- ENVS0241 Restoration Ecol.
- ENVS0220 Surf. & Grndwater
- ENVS0255 Soil Science
- ENVS0300 Wetland Analysis
- ENVS0309 Wildlife Cons
- BIOL0201 Ecology
- BIOL0202 Conservation
- BIOL0208 Marine Biology
- BIOL0211 Plant Biology
- BIOL0219 Aquatic Biology
- BIOL0223 Microbiology
- BIOL0334 Animal Behavior
- BIOL0325 Ecosystems
- BIOL0340 Forest Ecology
- GARP0230 Meteorology
- GARP0331 Sev. & Un Weather
- GEOL0205 Env. Geology

Human

- ENVS0215 Env. Ed and Com
- ENVS0238 Env. Impact Anal.
- ENVS0251 Water Resources
- ECON0320 Env. Economics
- ECON0321 Natural Res. Econ.
- 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
- GARP0352 Green Sus. Cities
- HIST0258 US Env. History

Methods/Technology

- ENVS0230 Est. Wildlife Pop
- ENVS0236 Env. Anal II
- ENVS0311 Env. Monitoring
- ENVS0341 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
- ENVS0317 Special Topics
- ENVS0330 Env. Data Analysis
- ENVS0341 Ecological Restoration
- ENVS0350 Internship (Note: 3.0 GPA required)
- ENVS0352 Planning Green Sustainable Cities
- ENVS0399 Independent Research
- GARP0344 Adv. GIS
- BIOL0325 Ecosystems
- BIOL0340 Forest Ecology

For more information or to visit, contact:

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Common Minors for Environmental Science

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.

Restoration Ecology Minor (NEW FALL 2020)

Restoration ecology is the scientific study supporting the practice of ecological restoration. Restoration ecologists restore and remediate degraded, damaged, or destroyed ecosystems. Common goals include providing habitat for wildlife, protecting water and soil resources, and increasing and/or conserving biodiversity.

The minor requires a total of 21-22 hours of coursework.

- ENVS0105 Nat. Hst. Field Tech **OR** BIOL0202 Cons. Biol.
- BIOL0204 GIS App. Nat. Sci. or GARP0244 Intro. GIS
- ENVS0241 Restoration Ecology
- ENVS0341 Ecological Restoration
- ENVS0342 Restoration Ecology Capstone Experience

And one of:

- BIOL0219 Aquatic Biology
- ENVS 0220 Surface and Groundwater Hydrology
- ENVS 0255 Environmental Soil Science
- ENVS 0300 Wetlands Assessment and Planning

Environmental Science Minor

The minor in Environmental Science is designed to allow students who are interested in environmental science to tailor the minor to meet their interests, career goals, and future plans. (Not available to students majoring in ENVS, BIOL, or REPL)

The minor requires a minimum of 18 hours of coursework.

- ENVS0101 Prin. Env. Sci. **OR** BIOL0102 Env. Biol
- One Natural Dimensions Course
- One Human Dimensions Course
- One Methods/Technology Dimensions Courses
- Other ENVS courses for a total of at least 18 hours ENVS course work

Geographic Information Systems

Geographic information system (GIS) is a geospatial technology that visualizes, analyzes and transforms data into geographic knowledge. It is used to model population growth and distributions, manage wildlife habitats, map crime, perform market demographic analyses, develop distribution networks and evacuation plans for community preparedness.

The minor requires a total of 18 hours of coursework.

- GARP0243 Remote Sensing
- GARP0244 Intro. to GIS
- GARP0344 Adv. GIS

And one of:

- BIOL 0278 Biostatistics
- CRJU0313 Statistics in Criminal Justice
- ECON0305 Intro to Econometric Methods
- FINC0305 Intro to Econometric Methods
- ENVS 0330 Env. Data Analysis
- MGMT0250 Quantitative Apprch. To Business Decisions
- GARP0246 Quantitative Meth. For Social and Phys. Sci.

Plus two of the following:

- BIOL0204 GIS Applications for Natural Sci.
- CAIS 0117 Intro to Comp. Prog.
- CAIS0212 Visual Prog. Concepts
- CRJU 0328 Comp. App. In Crime Analysis
- CRJU0359 GIS App. In Crime Anal.
- GARP 0241 Cart. & Data Visualization
- GARP0317 Special Topics in Geog. And Plan.
- GARP 0343 Adv. Remote Sense
- GARO 0347 Cloud GIS
- GARP 0350 Internship in Reg. and Env. Planning
- GARP0365 Geoprocessing
- GARP0399 Ind. Study

THE WESTFIELD EXPERIENCE

Though not required for the degree, we **HIGHLY RECOMMENDED** that each student participate in **THE WESTFIELD EXPERIENCE** and seek opportunities for high-impact learning including: Environmental Internships, Environmental Summer Jobs, the National Student Exchange, the Study Abroad Program, Independent Research, the Honors Program, and short term Study Abroad Programs such as the ENVS Costa Rica Trip.

For more information or to visit, contact:

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