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Bachelor of Science – Environmental Biology/Plant Biology

Department of Plant Biology, Michigan State University

120 Credits required for graduation (credits per course in parentheses)

University Requirements

20 credits - ISS/IAH courses must be in at least two different Diversity Designations (N, I, D)

- WRA 101/195H OR Lyman Briggs (LB) 133 (4 credits)
- ISS 200-level AND ISS 300-level (8 credits)
- IAH 201-210 AND IAH 211 or greater (8 credits)

Major/College Requirements

Physics - One of the following groups (8 credits):

- PHY 221, 222 – Physics for Life Scientists
- PHY 241, 242 – Physics for Cellular and Molecular Biologists
- PHY 231, 251, 232, 252 (Online: PHY 231C/232C)
- PHY 183, 184 (Online: PHY 183B/PHY 184B)
- LB 273, 274

Mathematics

- One of the following calculus courses (3-4 credits):
  - MTH 124, MTH 132, MTH 152H or LB 118
- One of the following statistics courses (3 credits):
  - STT 231 or STT 224

Chemistry

- **General** – One of the following groups (8-10 credits):
  - CEM 141/142 OR 151/152 AND 161
  - LB 171, 172 AND 171L
  - CEM 181H, 182H, AND 185H
- **Organic** – One of the following groups (4-6 credits):
  - CEM 251 AND CEM 252 (6)
  - CEM 143 (4)

Biological Sciences - One of the following groups (9-10 credits):

- BS 161, 162, 171, 172 (10 credits)
- BS 181H, BS 182H, 191H, 192H (10 credits)
- LB 144, 145 (9 credits)

Environmental Biology/Plant Biology Core Requirements

All of the following courses (36-38 credits):

- CSS 210 Fundamentals of Soil Science (3)
- GEO 221 Introduction to Geographic Information (3)
- FW 417 Wetland Ecology & Mgmt (3)
- IBIO 355/355L Ecology and Ecology Lab (4)
- PLB 203 Biology of Plants (4)
- PLB 415 Plant Physiology (3)
- PLB 418 Plant Systematics (3)
- PLB 498 Undergraduate Research (3) or PLB 495 Internship in Plant Biology
- PLB 499 Senior Seminar (1)

One of the following:

- ENT 404 Fundamentals of Entomology (4)
- PLP 405 Plant Pathology (3)
- PLP 407 Diseases & Insects of Forest & Shade Trees (3)

Genetics – One of the following:

- CSS 350 (3) OR IBIO 341 (4)

One of the following:

- FW 410 Upland Ecology Management (3)
- FW 444 Conservation Biology (3)

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Pick **two** 300-400 level courses approved by the department (6-8 Credits)

- Computational Math, Science, Engineering (CMSE):
  - 410 Bioinformatics & Computational Biology (3)

- Community Sustainability (CSUS):
  - 320 Environmental Planning & Mgmt (3)
  - 343 Community Food & Agric Systems (3)
  - 425 Environmental & Natural Resource Law (3)
  - 433 Grant Writing and Fund Development (3)
  - 465 Environmental & Natural Resource Law (3)

- Crop & Soil Sciences (CSS):
  - 442 Agricultural Ecology (3)
  - 360 Soil Biology (3)
  - 441 Plant Breeding & Biotechnology (3)
  - 451 Biotech Appl Plant Breeding & Genetics (3)
  - 455 Pollutants in Soil & Water (3)
  - 467 Bioenergy Feedstock Production (3)
  - 470 Soil Resources (3)

- Forestry (FOR):
  - 330 Human Dimensions of Forests (3)
  - 340 Forestry Ecology (3)
  - 360 Forest Ecosystems, Carbon & Climate Change (3)
  - 364 Ecological Problem Solving (3)
  - 372 Ecological Monitoring & Data Analysis (3)
  - 419 Applications GIS Natural Resources (3)
  - 405 Forest Ecosystem Serv (prereq EC 201) (3)
  - 466 Natural Resources Policy (3)

- Fisheries & Wildlife (FW):
  - 410 Upland Ecosystem Management (3)
  - 417 Wetland Ecology & Management (3)
  - 439 Conservation Ethics (3)
  - 444 Conservation Biology (3)
  - 445 Biodiv Conservation Policy & Practice (3)
  - 446 Innovations for Conservation (4)

- Geography (GEO):
  - 401 Global Plant Geography (3)

- Horticulture (HRT):
  - 415 Natural Landscapes, Native Plants & Landscape Restoration (3)
  - 486 Biotechnology in Agriculture: Applications & Ethical Issues (3)

- Integrative Biology (IBIO):
  - 357 Global Change Biology (3)
  - 440 Field Ecology & Evolution (4)
  - 446 Environmental Issues and Public Policy (3)
  - 485 Tropical Biology (3)

- Microbiology & Molecular Genetics (MMG):
  - 301 Introduction to Microbiology (3)
  - 409 Eukaryotic Cell biology (3)
  - 425 Microbial Ecology (3)
  - 431 Microbial Genetics (3)

- Plant Biology (PLB):
  - 402 Biology of Fungi (4)
  - 424 Algal Biology (3)
  - 434 Plant Structure & Function (4)
  - 441 Plant Ecology (3)
  - 443 Restoration Ecology (3)
  - 480 Epigenetics (3)

- Plant Pathology (PLP):
  - 405 Plant Pathology (3)
  - 407 Diseases & Insects of Forest & Shade Trees (4)

- Statistics (STT)
  - 464 Statistics for Biologists (3)

- Writing, Rhet, & American Culture (WRA):
  - 491 Grant Writing for Science and Natural Resource Professional

Courses offered at the Kellogg Biological Station (KBS) during the summer session:

- Launch your Major: BS 162 (3), BS 172 (2) and STT 224 (3)
- FW 417 (3)
- FOR 419 (4)
- IBIO 355 (3) / 355L (1)
- PLB 418 (3)

If not used for major requirements, these courses are approved selectives.