### College of Natural Science

#### Drew Freshman Seminar
- **NSC 100**
  - **Fall, 2(2-0) P:** (MTH 1825 or concurrently) or (MTH 132 or concurrently) R: Approval of college. SA: NSC 201
  - Overview of human health care professions with emphasis on academic and nonacademic undergraduate preparation, campus resources, communication and computer skills, and collaborative learning.

#### Preprofessional Freshman Seminar
- **NSC 102**
  - **Fall, Spring, 1(1-0)**
  - Introduction to scientific scholarship and academic inquiry via an intensive empirical learning experience. Discussion groups, study and computer skills, and collaborative learning.

#### Strategies for Success
- **NSC 103**
  - **Fall, Spring, 1(1-0) R:** Approval of department.
  - Development of effective academic, problem-solving, and other strategies necessary for college and career success. Discussion groups, study groups, and peer mentoring. Connections with University resources.

#### Freshman Seminar Away in Natural Sciences
- **NSC 104**
  - **Fall, 2(1-2) R:** Open to freshmen in the College of Natural Science. Approval of college.
  - Introduction to scientific scholarship and academic inquiry via an intensive empirical learning experience. Strategies for academic success in science and enhancing the college experience.

#### Preview of Biomedical Research
- **NSC 150**
  - **Spring, 1(1-0) R:** Open to freshmen in the College of Natural Science. Approval of college.
  - Review and integrate principles of ecology, fundamentals of law, and principles of economics into a conceptual model that describes interrelations among the natural system, the economy, and the state. Analyze and assess the legal-economic natural resource and environmental policies in the context of the integrated model. Relate the ecology-law-economics model to emerging paradigms of sustainable development, ecological economics, industrial ecology, and the Natural Step.

#### Environmental Issues Seminar
- **NSC 192**
  - **Fall, Spring. 1 credit.** A student may earn a maximum of 4 credits in all enrollments for this course. Interdepartmental with Agriculture and Natural Resources and Communication Arts and Sciences and Social Science. Administered by Natural Science. R: Open only to students in the College of Agriculture and Natural Resources or College of Engineering or College of Natural Science. Approval of college.
  - Environmental issues and problems explored from a variety of perspectives, including legal, scientific, historical, political, socio-economic, and technical points of view.

#### Drew Sophomore Seminar
- **NSC 200**
  - **Fall, 2(2-0) P:** NSC 100 or approval of college R: Approval of college. SA: NSC 202
  - Career exploration and preparation through service-learning experience.

### Applications in Environmental Studies
- **NSC 292**
  - **Fall, 2(1-2) Interdepartmental with Agriculture and Natural Resources and Communication Arts and Sciences and Social Science. Administered by Natural Science. P:** NSC 192 R: Open only to students in the Specialization in Environmental Studies.
  - Community engagement project. Projects vary depending on student's major and area of environmental interest.

### Special Problems
- **NSC 390**
  - **Fall, Spring, Summer. 1 to 3 credits.** A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department.
  - Faculty directed individualized study of an interdisciplinary problem.

### Ecology, Law and Economics
- **NSC 448**
  - **Spring, 3(3-0) Interdepartmental with James Madison College. Administered by Natural Science. P:** EC 201
  - Review and integrate principles of ecology, fundamentals of law, and principles of economics into a conceptual model that describes interrelations among the natural system, the economy, and the state. Analyze and assess the legal-economic natural resource and environmental policies in the context of the integrated model. Relate the ecology-law-economics model to emerging paradigms of sustainable development, ecological economics, industrial ecology, and the Natural Step.

### International Field Studies in Natural Science
- **NSC 475**
  - **Summer. 1 to 4 credits.** A student may earn a maximum of 8 credits in all enrollments for this course. R: Approval of college; application required.
  - Contemporary issues in environmental, geological, biological or human health-related sciences of a specific study abroad location.

### Natural Science Field Studies in Selected U.S.A. Locations
- **NSC 476**
  - **Summer. 1 to 4 credits.** A student may earn a maximum of 8 credits in all enrollments for this course. R: Approval of college; application required.
  - Contemporary issues in environmental, geological, biological or human health-related sciences of a selected domestic study away location.

### Special Problems
- **NSC 490**
  - **Fall, Spring, Summer. 1 to 4 credits.** A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department.
  - Faculty directed individualized study of an interdisciplinary problem.

### Selected Topics
- **NSC 491**
  - **Fall, Spring, Summer. 1 to 3 credits.** A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department.
  - Selected interdisciplinary topics not normally covered in other courses.

### Capstone in Human Biology
- **NSC 495**
  - **Fall, Spring, Summer. 1 to 3 credits.** A student may earn a maximum of 6 credits in all enrollments for this course. P: Completion of Tier I writing requirement. R: Open only to seniors in the Human Biology or Lyman Briggs Human Biology major.
  - Integration of human biology disciplines with a focus on health and disease.

### Directed Study in Human Biology
- **NSC 496**
  - **Fall, Spring, Summer. 1 to 3 credits.** P: Completion of Tier I writing requirement.
  - Directed studies in human biology.

### Internship in Human Biology
- **NSC 497**
  - **Fall, Spring, Summer. 1 to 3 credits.** A student may earn a maximum of 6 credits in all enrollments for this course. P: Completion of Tier I writing requirement.
  - Practical experience applying human biology training outside the classroom setting.

### Research in Human Biology
- **NSC 498**
  - **Fall, Spring, Summer. 1 to 3 credits.** A student may earn a maximum of 6 credits in all enrollments for this course. P: Completion of Tier I writing requirement.
  - Research in faculty laboratories.

### Research
- **NSC 499**
  - **Fall, Spring, Summer. 1 to 4 credits.** A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to juniors or seniors in the College of Natural Science with a teacher certification option.
  - Research in faculty laboratories. Oral and written presentations.

### Biological Science Transmission Electron Microscopy Laboratory
- **NSC 810**
  - **Fall, Spring. 3(1-4) R:** Approval of department.

### Physical Science Transmission Electron Microscopy Laboratory
- **NSC 815**
  - **Fall, Spring. 3(1-4) R:** Approval of department.
  - Experimental methods for transmission electron microscopy in the physical sciences, including digital photography, imaging, diffraction, and microanalysis.
816  Advanced Physical Science
Transmission Electron Microscopy Laboratory
Fall, Spring. 1(1-1) A student may earn a maximum of 5 credits in all enrollments for this course. R: Approval of department.

820  Scanning Electron Microscopy; Energy Dispersive X-ray Microanalysis
Fall, Spring. 3(2-2) RB: NSC 802 or concurrently

825  Special Problems in Microscopy
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 40 credits in all enrollments for this course. RB: NSC 802 and (NSC 810 or NSC 820 or NSC 837)
Use of microscopy techniques for selected research topics.

828  Food Safety Seminar Series
Fall, Spring. 1(1-0) Interdepartmental with Agriculture and Natural Resources and Social Science and Veterinary Medicine. Administered by Veterinary Medicine. RB: Enrollment in graduate program in related discipline
Selected current topics covering the broad areas of food safety as they relate to production, processing, transport, microbiology, toxicology, and social and human dimensions.

829  Problems in Food Safety
Fall. 1(1-0) Interdepartmental with Agriculture and Natural Resources and Social Science and Veterinary Medicine. Administered by Veterinary Medicine. RB: Enrollment in graduate program in related discipline
In-depth discussion of selected problems in food safety.

830  Nature and Practice of Science
Fall, Spring. 1 credit.
Foundations of scientific inquiry. Recommended scientific best-practices including principles and practices of research integrity and professionalism. Evaluation of scientific quality and productivity.

837  Confocal Microscopy
Fall, Spring, Summer of odd years. 3(2-2)
Confocal imaging, theory and practice. Optics, lasers, light paths for transmission, florescence and reflection imaging. Advanced techniques including Fluorescence recovery after photobleaching (FRAP), Förster resonance energy transfer (FRET), spectral imaging, laser capture and two-photon microscopy.

840  Writing in the Sciences
Fall, Spring. 2(2-0) A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Arts and Letters. Administered by Natural Science.
Discussion and critique of students' writing in peer response workshop groups