NATURAL SCIENCE (NSCI)

NSCI 102 Pre-Health Careers: Introduction and Preparation 2 Credit Hours
This course provides a comprehensive introduction to a wide range of healthcare professions and pre-health academic tracks, including medicine, dentistry, pharmacy, physician assistant, and other allied health fields. Students will explore the academic requirements, application processes, and standardized exams (such as the MCAT, DAT, GRE, and PCAT) associated with each career path. Through interactive discussions, guest speakers, and hands-on activities, students will develop essential study strategies, time management skills, and a personalized academic plan to succeed in their chosen pre-health track. The course also emphasizes professionalism, cultural competence, healthcare ethics, and research, preparing students for future challenges in the healthcare field. This is a hybrid course with in-person and asynchronous components designed to offer flexibility and engagement. (F).

NSCI 120 The Science of Life 4 Credit Hours
NSCI/BIOL 120 allows students to develop the skills, understanding and knowledge necessary to become citizen scientists. The course emphasis is on basic life processes, ecology, environmental issues, genetics and health. NSCI/BIOL 120 is complementary to but not a requirement for NSCI 121. This course fulfills DDC Natural Science requirements. Students cannot receive credit for both NSCI 120 and BIOL 120. (F, S).
Corequisite(s): NSCI 120L

NSCI 121 Matter, Energy, and Life II 4 Credit Hours
A general science course with emphasis on basic principles and their applications. Includes ecology and evolution, energy and energy technology, geology and astronomy. NSCI 121 is complementary to, but may be taken independently of, NSCI 120. Three hours lecture, three hours laboratory. (F,S).
Corequisite(s): NSCI 121L

NSCI 231 Inquiry: Physical Science 3 Credit Hours
This course develops a strong conceptual understanding of physical science. Prospective K-8 teachers will participate in the same kind of inquiry-based experiences that they will use in their own teaching. Topics will include light and color, matter, and motion. (F, W).

NSCI 232 Inquiry:Earth/Planet Science 3 Credit Hours
This course develops a strong conceptual understanding of earth and planetary science. Prospective K-8 teachers will participate in the same kind of inquiry-based experiences that they will use in their own teaching. Topics will include geology, weather, and astronomy. This course meets in-person once per week. (F, W, S).

NSCI 233 Inquiry: Life Science 3 Credit Hours
This course develops a strong conceptual understanding of Life Science. Prospective K-8 teachers will participate in the same kind of inquiry-based experiences that they will use in their own teaching. Topics will include characteristics of life, plants and animals, and ecology. This course meets in-person once per week. (F, W, S).

NSCI 290 Projects in Natural Sciences 1 to 2 Credit Hours
An opportunity for non-science and lower-division science students to carry out independent projects in the natural sciences under the supervision of a faculty member. Projects range from laboratory and field observations to the development of materials and apparatus for use in laboratory exercises and classroom demonstration. In general, one credit hour corresponds to four hours of work per week. Permission of instructor. (F,W).

NSCI 295 Topics in Natural Sciences 1 to 3 Credit Hours
An introduction to the themes of the natural sciences reflecting their interactions with one another and society. Topics vary and are announced in the current time schedule. The course may be repeated no more than once under a different topic. One to three hours lecture, seminar, or field study.

NSCI 325 Gender, Science & Engineering 3 Credit Hours
Explores some of the history of women in science and engineering, the current status of women in science and engineering, and feminist theory in research. Topics include cultural influences on women in science and engineering, careers and life balance, and a feminist approach to scientific and engineering teaching and research.

NSCI 331 Phy. Sci. & Everyday Thinking 3 Credit Hours
Full Title: Physical Science and Everyday Thinking An inquiry-based physical science course suitable for prospective or practicing elementary teachers majoring or minoring in science studies. Students will construct meaningful understanding of physics and chemistry concepts through discussion, hands-on experiences and computer simulations. Specific topics will include the application of the atomic model to the behavior of gases, physical changes, and chemical changes. A learning-cycle pedagogy will be employed that consists of elicitation of initial student ideas, development of new or modified ideas, building student consensus on final ideas, and the application of ideas to new situations (F, W, S).

NSCI 332 Inquiry: Mich Earth Science 3 Credit Hours
This course develops a strong conceptual understanding of earth science as it applies to the state of Michigan. Prospective K-8 teachers will participate in the same kind of inquiry-based experiences that they will use in their own teaching. Topics will include landforms, water, weather and seasons in Michigan. This is a hybrid course with weekly meetings as well as an online component. Students who do not attend the first class meeting may be requested to drop per the instructor request drop policy.
Prerequisite(s): NSCI 232 or GEOL 118
Restriction(s):
Can enroll if Class is Undergrad Certification only or Post-baccalaureate Cert only or Sophomore or Junior or Senior
Can enroll if Degree is Bachelor of Science, Bachelor of Arts
Can enroll if College is Education, Health, and Human Services or Arts, Sciences, and Letters

NSCI 333 Inquiry: PBL in Life Science 3 Credit Hours
A problem-based learning course suitable for prospective or practicing elementary and middle-school teachers who major or minor in integrated science studies. This course builds on and reinforces content learned at the introductory level by applying life science concepts to complex real-world problems presented in class. Students will work in small groups to identify and research concepts and principles they need to know in order to progress through the real-world life science problems. The case studies used will require the understanding and application of concepts in cell structure and function, genetics, animal and plant physiology, and ecology. (F).
Restriction(s):
Can enroll if Class is Undergrad Certification only or Post-baccalaureate Cert only or Sophomore or Junior or Senior
Can enroll if College is Education, Health, and Human Services or Arts, Sciences, and Letters

NSCI 390 Topics in Natural Sciences 1 to 3 Credit Hours
A course in special topics current to natural sciences. Topic and format (seminar, lecture and laboratory) for the course may vary. See current Schedule of Classes. (OC).

NSCI 390C Topics in Natural Sciences 1 Credit Hour
Topic Titile: Applied Restoration and Conservation Ecology Laboratory- This is a field based lab course that will take place in the field where students will conduct restoration, stewardship and conservation planning. Students will be exposed to and interact with professionals from a variety of organizations in southeast Michigan that are dedicated to managing and protecting the globally endangered oak-openings landscape. Some course time will be devoted to reading and discussing literature on landscape, restoration and conservation ecology. Topics and papers will emphasize local and regional ecology (lakeplain prairies, oak openings, wetlands, Great Lakes) and methods for managing, maintaining and restoring these ecological systems (e.g. fire ecology). Classroom discussion will emphasize the importance of these systems and their conservation to human health, well-being, and culture.

NSCI 490 Topics in Natural Sciences 1 to 3 Credit Hours
A course in special topics current to natural sciences. Topic and format (seminar, lecture and laboratory) may vary. See current Schedule of Classes. (OC).

NSCI 490A Topics in Natural Science 1 Credit Hour
Topic: Workshop Science Teaching in Elementary/Middle School, This course will help you identify and correct weaknesses in your scientific knowledge so that your will be prepared to successfully complete the Michigan Teacher Test for Teacher Certification General and Integrated Science.

NSCI 497 Natural Sciences Colloquium 1 Credit Hour
A series of colloquia on selected topics representing frontier areas of current research in the natural sciences. Lectures by guest speakers invited by the department constitute a major component of the course. One hour seminar. (F).

NSCI 498 Independent Study in NSCI 1 to 3 Credit Hours
Provides an opportunity for students to pursue independent library-based research or readings under the direction of a faculty member. For students who wish to study an area that is interdisciplinary rather than an area focused on a single science. The student and the faculty member must complete a contract outlining the area to be studied and the product of the research.
Restriction(s):
Can enroll if Class is Undergraduate NCFD or Undergrad Certification only or Junior or Senior
Can enroll if College is Arts, Sciences, and Letters

NSCI 499 Laboratory Research in NSCI 1 to 3 Credit Hours
Provides an opportunity for students to pursue independent laboratory-based research under the direction of a faculty member. For students who wish to study an area that is interdisciplinary rather than an area focused on a specific science. The student and the faculty member must complete a contract outlining the area to be studied and the product of the research.
Restriction(s):
Can enroll if Class is Undergraduate NCFD or Undergrad Certification only or Junior or Senior
Can enroll if College is Arts, Sciences, and Letters

*An asterisk denotes that a course may be taken concurrently.

Frequency of Offering

The following abbreviations are used to denote the frequency of offering: (F) fall term; (W) winter term; (S) summer term; (F, W) fall and winter terms; (YR) once a year; (AY) alternating years; (OC) offered occasionally