

NSC - Natural Sciences

Natural Sciences: NSC

Lower-Division Courses

NSC 301C. Freshman Seminar.

Restricted to first-semester freshmen. Small-group seminar involving reading, discussion, writing, and oral reports. Introduction to University resources, including libraries, computer and research facilities, and museums. Several sections are offered each semester, with various topics and instructors. Two lecture hours and one discussion hour a week for one semester.

NSC 001F. Experiential Learning.

Restricted to students in special programs in the College of Natural Sciences. Course may include research, career and networking events, student and community speakers, and other subjects related science. Emphasis on student participation. May be repeated for credit. Offered on the pass/fail basis only.

NSC 001S. Natural Sciences Seminar.

Restricted to students in special programs in the College of Natural Sciences. Seminars may include study sessions, career and networking events, student and community speakers, and other subjects related to issues for students in science. Emphasis on student participation. May be repeated for credit.

NSC 302. Texas Interdisciplinary Plan: Critical Thinking Seminar.

Restricted to students in the Texas Interdisciplinary Plan or in the Gateway Program. An examination of fundamental concepts in critical thinking, including the role of intellectual virtues, an analysis of the elements of thought, Socratic thinking, and the application of universal intellectual standards. Three lecture hours a week for one semester, with additional hours to be arranged. Liberal Arts 302 and Natural Sciences 302 may not both be counted. May not be repeated for credit.

NSC 303. Creative Communication of Scientific Research.

Same as Communication 308. Learn to communicate about science, technology, and medicine to broad audiences in order to increase understanding of the impact these fields have on human lives. Three lecture hours a week for one semester. Communication 308 and Natural Sciences 303 may not both be counted.

NSC 106, 206. Dialogue Across Difference: Identity, Power, and Privilege.

Explore frameworks, terminology, critical thinking, and empathy tools for engaging in productive conversations around difficult subjects related to diversity, equity, and inclusion (DEI). Examine DEI resources, issues, and challenges across campus. For each semester hour of credit earned, the equivalent of one lecture hour a week for one semester.

NSC 207. Diversity, Equity, and Inclusion Capstone.

Use critical, reflective thinking, and effective problem solving to: identify a diversity, equity, and inclusion (DEI) issue on campus or in the community to address and propose a solution or steps toward a solution; develop leadership in the DEI concentration; facilitate debriefs of DEI events and assist with concentration development. Two lecture hours a week for one semester. Prerequisite: Natural Sciences 106 and 110H.

NSC 107J. The Effective Health Care Professional.

Introduction to careers in the health professions. Discuss the intra- and inter- personal core competencies of the professions sought in

healthcare providers. Work on the critical reasoning skills needed to succeed on reading comprehension and situational judgment tests found on traditional professional school placement exams. One lecture hour a week for one semester.

NSC 107K. Thriving in a Collaborative Healthcare Environment.

Introduction to the collaborative relationship between the health professions. Work on the critical reasoning skills needed to succeed on reading comprehension and situational judgment tests found on traditional professional school placement exams. One lecture hour a week for one semester.

NSC 107M. Introduction to the Health Professions Action Plan.

Discuss the steps necessary to complete a competitive application to professional school including the generation of an effective application, personal statement, and the refinement of skills for a successful professional school interview. One lecture hour a week for one semester.

NSC 108, 208, 308, 408, 508, 608, 708, 808, 908. Topics in Natural Sciences.

Restrictions vary with the topic. For each semester hour of credit earned, one lecture hour a week for one semester. May be repeated for credit when the topics vary. Offered on the pass/fail basis only. Prerequisite: Varies with the topic.

Topic 1: Capstone Prospectus Seminar. Restricted to students enrolled in the Evidence and Inquiry Certificate program or in the Health Science Honors Program. Seminar to prepare students for their capstone project by helping them develop a research prospectus, identify faculty mentors, and develop a target list of journals for publication of a report on their research. For each semester hour of credit earned, one lecture hour a week for one semester. Offered on the pass/fail basis only.

Topic 2: Evidence and Inquiry Proposal Seminar. Enrollment restricted to the Evidence and Inquiry Certificate program. Development of compelling, cross-disciplinary, and academically feasible questions of interest outside student's major area of study; design a field of study around those questions; and write a field proposal for faculty review. For each semester hour of credit earned, one lecture hour a week for one semester. Offered on the pass/fail basis only.

NSC 109, 209, 309. Topics in Natural Science.

Restrictions vary with the topic. For each semester hour of credit earned, one lecture hour a week for one semester. May be repeated for credit when the topics vary. Prerequisite: Varies with the topic.

Topic 3: Natural Sciences Ethics Seminar.

Topic 4: Polymathic Capstone Field Invention. Restricted to students pursuing the Evidence and Inquiry Certificate. Guidance in developing a feasible interdisciplinary field of study and consulting with faculty who are familiar with the field. Substantive writing instruction to develop a proposal that describes and justifies the interdisciplinary field of study.

Topic 5: Introduction to Applied Problem Solving. Restricted to first-year students in the TIP Scholars program. Introduction to applied problem-solving with a focus on critical thinking and ethical reasoning on issues relevant to college students.

Topic 6: Introduction to Forensic Science. A multi-disciplinary approach to the field of forensic science. Examine the application of scientific knowledge in legal matters, both criminal and civil as well as the collection, examination, and evaluation of evidence. Explore different fields in forensic science, the educational requirements of

each, and real world applications. For each semester hour of credit earned, one lecture hour a week for one semester.

NSC 209P. Topics in Calculus for Emerging Scholars.

Restricted to students in the Texas Interdisciplinary Plan Scholars Program. A workshop focusing on ideas more than computation and procedures, where students work in small groups on sets of problems designed to encourage advanced thinking about calculus. Three lecture hours a week for one semester. Mathematics 210T (Topic: Topics for Emerging Scholars) and Natural Sciences 209P may not both be counted. May be repeated for credit. Offered on the pass/fail basis only. Prerequisite: Concurrent enrollment in an approved calculus course.

NSC 110E. Internship in the Sciences.

Restricted to students in the College of Natural Sciences. Practical work experience related to the student's area of interest in natural sciences. Internships may be on or off campus, paid or unpaid, and may include work with nonprofit agencies, government offices, or private corporations. Students work in a professional environment and apply analysis, communication, and other academic skills to practical work. Individual instruction conducted on the Web. May be repeated for credit. Offered on the pass/fail basis only. Prerequisite: Completion of fifteen semester hours of coursework and consent of instructor.

NSC 110H. Topics in Natural Sciences Honors Seminar.

Restricted to students in honors programs in the College of Natural Sciences. Emphasis on student participation. Format may include student speakers, outside speakers, discussions, visits to laboratories, or other enrichment activities. The equivalent of one lecture hour a week for one semester. May be repeated for credit when the topics vary. Offered on the pass/fail basis only.

Topic 1: Dean's Scholars First-Year Seminar. Restricted to students in the Dean's Scholars Program. The equivalent of one lecture hour a week for one semester. Offered on the pass/fail basis only.

Topic 2: Health Science Scholars First-Year Seminar. Restricted to students in the Health Science Scholars Program. The equivalent of one lecture hour a week for one semester. Offered on the pass/fail basis only.

Topic 3: Polymathic Scholars First-Year Seminar. Restricted to students in the Polymathic Scholars Program. The equivalent of one lecture hour a week for one semester. Offered on the pass/fail basis only.

NSC 311. Critical Reasoning.

Restricted to students in the Texas Interdisciplinary Plan program. An examination of the fundamental concepts in critical reasoning, including the analysis of argument, application of intellectual standards, and the role of intellectual virtues. Three lecture hours a week for one semester, with additional hours to be arranged.

NSC 115. Women in Natural Sciences Seminar.

The work and lives of women scientists in a sociocultural context. One lecture hour a week for one semester.

NSC 118C, 218C, 318C. Topics in Forum Seminar Series.

Restricted to freshmen and sophomores. Lectures and discussions on various contemporary issues. Emphasis on multidisciplinary perspectives and critical discourse. For 118C, two lecture hours a week for eight weeks; for 218C, two lecture hours a week for one semester; for 318C, three lecture hours a week for one semester, or two lecture hours and one hour of supervised research a week for one semester. May be repeated for credit when the topics vary.

NSC 119, 219, 319, 419, 519, 619. Topics in International Learning Seminars.

Restricted to students participating in a May Term Education Abroad program. Discussion of various issues related to the academic, cultural, and personal aspects of completing academic work in international locations. For each semester hour of credit earned, one lecture hour a week for one semester. Natural Sciences 119, 219, 319, 419, 519, 619 and Undergraduate Studies 119 may not both be counted unless the topics vary. May be repeated for credit when the topics vary. Offered on the letter-grade basis only. Prerequisite: Varies with the topic.

NSC 119S, 219S, 319S, 419S, 519S, 619S, 719S, 819S, 919S. Topics in Natural Science.

To record credit earned while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad advisor in the College of Natural Science. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studied program. May be repeated for credit when the topics vary.

Upper-Division Courses

NSC 120E. Internship in the Sciences.

Restricted to students in the College of Natural Sciences. Practical work experience related to the student's area of interest in Natural Sciences. Internships may be on or off campus, paid or unpaid, and may include work with nonprofit agencies, government offices, or private corporations. Students work in a professional environment and apply analysis, communication, and other academic skills to practical work. Individual instruction conducted on the Web. May be repeated for credit. Offered on the pass/fail basis only. Prerequisite: Upper-division standing and consent of instructor.

NSC 321. Introduction to Peer Mentoring and Leadership.

Restricted to students in the College of Natural Sciences. Explores current theory and research related to peer mentoring and leadership within higher education. Includes interactive lectures; and the opportunity for students to identify and work through ethical choices as peer leaders; to study leadership concepts such as conflict resolution, diversity, and group dynamics; to work collaboratively; and to conduct independent research. Three lecture hours a week for one semester. May be repeated for credit. Prerequisite: Consent of instructor.

NSC 122, 222, 322, 422, 522, 622, 722, 822, 922. Natural Science Topics.

Restrictions vary with the topic. For each semester hour of credit earned, one lecture hour a week for one semester. May be repeated for credit when the topics vary. Offered on the pass/fail basis only. Prerequisite: Upper-division standing; additional prerequisites vary with the topic.

NSC 123, 223, 323, 423, 523, 623, 723, 823, 923. Natural Sciences Topics.

Restrictions vary with the topic. For each semester hour of credit earned, one lecture hour a week for one semester. May be repeated for credit when the topics vary. Prerequisite: Upper-division standing; additional prerequisites vary with the topic.

Topic 1: Polymathic Capstone Thesis Preparation Seminar. Restricted to students pursuing the Evidence and Inquiry Certificate. Supports the research process to identify a faculty mentor, define appropriate thesis topics, develop an annotated bibliography, draft a thesis proposal, and develop an initial plan for drafting thesis. Additional prerequisite: Natural Sciences 109 (Topic 4).

NSC 124, 224, 324, 424, 524, 624, 724, 824, 924. Natural Sciences Topics.

Restrictions vary with the topic. For each semester hour of credit earned, one lecture hour a week for one semester. May be repeated for credit when the topics vary. Offered on the letter-grade basis only. Prerequisite: Upper-division standing.

NSC 325. Topics in Inventors Program Practicum.

Design, research, prototype, and test a STEM-related product or solution. Three lecture hours a week for one semester. May be repeated for credit when the topics vary.

NSC 326. Introduction to Scientific Programming.

Introduction to programming using both the C and Fortran (95/2003) languages, with applications to basic scientific problems. Discuss common data types and structures, control structures, algorithms, performance measurement, and interoperability. Three lecture hours a week for one semester. Only one of the following may be counted: Natural Sciences 326, Statistics and Data Sciences 222, 322, Statistics and Scientific Computation 222, 322. Prerequisite: Credit or registration for Mathematics 408C, 408K, or 408N.

NSC 129, 229, 329, 429, 529, 629. Topics in International Learning Seminars.

Restricted to students participating in a May Term Education Abroad program. Discussion of various issues related to the academic, cultural, and personal aspects of completing academic work in international locations. For each semester hour of credit earned, one lecture hour a week for one semester. Natural Sciences 129, 229, 329, 429, 529, 629 and Undergraduate Studies 119 may not both be counted unless the topics vary. May be repeated for credit when the topics vary. Offered on the letter-grade basis only. Prerequisite: Varies with the topic.

NSC 129S, 229S, 329S, 429S, 529S, 629S, 729S, 829S, 929S. Topics in Natural Science.

Used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad advisor in the College of Natural Science. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program. May be repeated for credit when the topics vary.

NSC 335. Scientific and Technical Computing.

Introduction to computing techniques and methods applicable to many scientific disciplines and technical applications. Discuss computer hardware and operating systems, systems software and tools, code development, numerical methods and math libraries, and basic visualization and data analysis tools. Three lecture hours a week for one semester. Only one of the following may be counted: Natural Sciences 335, Statistics and Data Sciences 335, Statistics and Scientific Computation 335. Prerequisite: Mathematics 408D or 408M, and prior programming experience.

NSC 371. Capstone Thesis Seminar.

Directed reading, research, and discussion followed by the writing of a substantial thesis. Three lecture hours a week for one semester. Prerequisite: Natural Sciences 323 with a grade of at least B- and consent of instructor.

Graduate Courses

NSC 088C. Science Communications Seminar.

Same as Communication 088C. Restricted to students in the Moody College of Communication and the College of Natural Sciences.

Professional development supplemental to primary studies. Designed to develop skills in the effective communication of scientific concepts. Hours to be arranged. Communication 088C and Natural Sciences 088C may not both be counted. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 088D. Science Communications Practicum.

Same as Communication 088D. Restricted to students in the Moody College of Communication and the College of Natural Sciences. Professional development supplemental to primary studies. May be taking concurrently with the Science Communication Seminar. Opportunities to focus on skill development while receiving constructive assessment and evaluation. Hours to be arranged. Communication 088D and Natural Sciences 088D may not both be counted. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 088E. Professional Ethics and Social Responsibility in Research.

Hours to be arranged. May be repeated for credit. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 088G. Concentration on Science in Public Policy.

Hours to be arranged. May be repeated for credit. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 088J. Concentration in Science in Public Policy.

Identify and articulate the relevance of scientific scholarship to public policy. Hours to be arranged. May be repeated for credit. Prerequisite: Graduate standing.

NSC 088L. Introduction to Evidence-Based Teaching.

Designed for graduate students interested in learning to teach science and mathematics effectively in their own courses, rather than as Teaching Assistants. Subjects include defining learning objectives, designing learning tasks, observing classrooms to identify effective teaching strategies, and practice teaching. Intended for graduate students in the College of Natural Sciences. Hours to be arranged. Professional development supplemental to primary studies. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 088M. Mentoring Undergraduate Researchers.

Aims to develop graduate students' skills in mentoring undergraduates and other junior participants in STEM research. Explores how to define suitable projects, establish appropriate relationships, set expectations, encourage communication, balance guidance with independence, and address diversity and ethical issues in mentoring. Hours to be arranged. Professional development supplemental to primary studies. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 088P. Leading People and Organizations.

Restricted to students in the College of Natural Sciences. Professional development supplemental to primary studies. Designed for graduate students in STEM disciplines. Explores the knowledge and skills necessary for scientists to manage and lead effectively within organizations. Hours to be arranged. Prerequisite: Graduate standing.

NSC 088S. Strategic Management.

Restricted to students in the College of Natural Sciences. Professional development supplemental to primary studies. Designed to help students develop general management skills such as managing change strategically, implementing strategy, and addressing long-term health of an organization. Hours to be arranged. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 088T. Mentored Teaching.

Designed for graduate students who have completed NSC-088L Introduction to Evidence-Based Teaching, or its equivalent. Each student will design, teach, and conduct assessment of an instructional unit (~3 hours of class time) in an undergraduate CNS course, working in collaboration with the faculty member acting as instructor of record. Intended for graduate students in the College of Natural Sciences. Hours to be arranged. Professional development supplemental to primary studies. May be repeated with consent of instructor. May be repeated for credit. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 088V. STEM Professional Development.

Hours to be arranged. May be repeated for credit. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

NSC 098D. Investigating Career Options for STEM Advanced Degrees.

Hours to be arranged. May be repeated for credit. Offered on the credit/no credit basis only. Prerequisite: Graduate standing.

Professional Courses**NSC 180, 280, 380, 480, 580, 680. Topics in Research for Independent Study.**

Produce group and individual projects in research design, research methodologies, and research execution. Practice in a professional position under supervision. For each semester hour of credit earned, the equivalent of one lecture hour a week for one semester. May be repeated for credit when the topics vary. Prerequisite: Graduate standing and consent of instructor.