Table of Contents

ALL COURSES LISTED ARE SUBJECT TO CHANGE.

NUpath

Northeastern's academic core, known as NUpath, is built around essential, broad-based knowledge and skills—such as understanding societies and analyzing data—integrated with specific content areas and disciplines. It offers students the flexibility to integrate core learning into their individual educational journeys. NUpath is Northeastern University's set of institution-wide general education requirements for all students in all majors. You may find a list of these requirements with further details on the NU Core Curriculum webpage: https://www.northeastern.edu/core/requirements/.

Throughout this guide you will find the following abbreviations for NUpath categories. Below is a list of these NUpath categories and their accompanying codes.

NUpath Abbreviation	NUpath Attribute
ND	Engaging with the Natural and Designed World
EI	Exploring Creative Expression and Innovation
IC	Interpreting Culture
FQ	Conducting Formal and Quantitative Reasoning
SI	Understanding Societies and Institutions
AD	Analyzing and Using Data
DD	Engaging Difference and Diversity
ER	Employing Ethical Reasoning
WF	Writing in the First Year
WI	Writing Intensive in the Major

ALL COURSES LISTED ARE SUBJECT TO CHANGE.

NU Bound England

Global Learning Experience
This online seminar will focus on global citizenship and cultural difference in the twenty-first century. We will begin by defining global citizenship and examining its origins and critiques. We will then explore frameworks of intercultural learning and praxis. You will critically analyze and apply these ideas as you engage in personal reflection and team-based problem-solving, connecting issues you encounter during your own global experience in your Global Quest host site with broader dynamics of globalization, migration, positionality, power, and privilege.
NU Course: INSH 1990, Interdisciplinary Elective in Social Sciences & Humanities.

Beginner/Intermediate/Advanced French
Designed for students with very little or no prior knowledge of French. Provides a lively introduction to basic oral expression, listening comprehension, and elementary reading and writing. Each lesson incorporates helpful information about daily life in France and the varied cultures within the world of French speakers. Laboratory practice complements class work, enables students to work aloud at their own speed, reinforces their acquisition of essential structures, and acquaints them with a vast library of audio-visual resources.
NU Course Equivalent: FRNH 1101, Elementary French 1.
NOTE: Additional upper-level language classes may be available, per the host institutions placement exam

Beginner/Intermediate/Advanced Spanish
Designed for students with little or no knowledge of Spanish. Presents essentials of correct Spanish usage through acquisition of basic skills in reading, speaking, writing, and aural comprehension.
NU Course Equivalent: SPNS 1101, Elementary Spanish 1.
NOTE: Additional upper-level language classes may be available, per the host institutions placement exam

Britain and the World: Interaction and Empire
Welcome to 'Britain and the World: Interaction and Empire'. This course introduces students to the history of Britain and its interaction with the world. The course follows British history from the Roman Empire to today. The aim is to examine the Britain's relationships with other countries and cultures, exploring social, economic, and cultural developments, as well as political and diplomatic ones. As well as understanding these developments discretely, students will also be encouraged to see how they affect one another.
NU Course Equivalent: HIST 2376, Britain and the British Empire, NUpath: SI, DD.

British Drama and the London Stage
In this course students will study a range of drama from the British Isles across six centuries, with a particular emphasis on the evolving nature of theatre and performance in London. Attention is given to major playwrights, movements, styles and themes and their historical, critical and performance contexts. Throughout the course we will be considering the relationship between page and stage: between the dramatic text as it appears in written from, and its life in performance. After an overview we will proceed chronologically, from Elizabethan and Jacobean Shakespeare through to the eclectic British theatre of the twenty-first century. Lectures are highly interactive and are structured around significant playwrights, genres, movements and topics. We will use the wealth of theatres and productions happening on our doorstep in London as a resource.
NU Course Equivalent: THTR 1990, Theatre Elective, NUpath: EI, IC.

Business Statistics
Offers students an opportunity to obtain the necessary skills to collect, summarize, analyze, and interpret business-related data. Covers descriptive statistics, sampling and sampling distributions, statistical inference, relationships between variables, formulating and testing hypotheses, and regression analysis in the context of business. Use of the SPSS statistical programming package is an integral part of the course.
NU Course Equivalent: MGSC 2301, Business Statistics. NUpath: AD.

NU Bound England -- *continued*

Calculus 1 for Science and Engineering
Covers definition, calculation, and major uses of the derivative, as well as an introduction to integration. Topics include limits; the derivative as a limit; rules for differentiation; and formulas for the derivatives of algebraic, trigonometric, and exponential/logarithmic functions. Also discusses applications of derivatives to motion, density, optimization, linear approximations, and related rates. Topics on integration include the definition of the integral as a limit of sums, antidifferentiation, the fundamental theorem of calculus, and integration by substitution.
NU Course Equivalent: MATH 1341, Calculus 1 for Science and Engineering. NUpath: FQ.

Calculus 2 for Science and Engineering
Covers further techniques and applications of integration, infinite series, and introduction to vectors. Topics include integration by parts; numerical integration; improper integrals; separable differential equations; and areas, volumes, and work as integrals. Also discusses convergence of sequences and series of numbers, power series representations and approximations, 3D coordinates, parameterizations, vectors and dot products, tangent and normal vectors, velocity, and acceleration in space. Requires prior completion of MATH 1341 or permission of head mathematics advisor.
NU Course Equivalent: MATH 1342, Calculus 2 for Science and Engineering. NUpath: FQ.
Prerequisite: Requires prior completion of MATH 1341 or permission of head mathematics advisor.

Calculus 3 for Science and Engineering
Extends the techniques of calculus to functions of several variables; introduces vector fields and vector calculus in two and three dimensions. Topics include lines and planes, 3D graphing, partial derivatives, the gradient, tangent planes and local linearization, optimization, multiple integrals, line and surface integrals, the divergence theorem, and theorems of Green and Stokes with applications to science and engineering and several computer lab projects.
NU Course Equivalent: MATH 2321, Calculus 3 for Science and Engineering. NUpath: FQ.
Prerequisite: MATH 1342 or MATH 1252.

Calculus for Business
Calculus for Business is a calculus course intended for those studying business, economics, or other related business majors. The following topics are presented with applications in the business world: functions, graphs, limits, differentiation, integration, techniques and applications of integration, partial derivatives, optimization, and the calculus of several variables. Each textbook section has an accompanying homework set to help the student better understand the material.
NU Course Equivalent: MATH 1231, Calculus for Business and Economics. NUpath: FQ.

Criminology
Describes the nature and extent of crime, explains its causes, and examines society's responses to it. Defines the field of criminology by discussing the different types of crime and discusses different theories of crime causation. Studies the connections between systemic racism, inequalities, and crime and the role of bias in the development of the field and criminological theories. To establish the extent of crime in society, addresses measurement issues in the field of criminology.
NU Course Equivalent: CRIM 1120, Criminology. NUpath: SI.

Cultures of London
This course is about the relationship between place, people, and culture in the widest sense of the term. In this course you will encounter and study a wide range of cultural manifestations in and of London: examining how different people and different art forms have helped form an idea of the city across different time periods; and how the city has in turn influenced the people who live here and the directions art forms have taken. Wherever possible we will be studying London and its cultures first-hand. The course focuses on a wide variety of art that has been produced in, or which reflects upon, London, including in the visual arts and architecture, and with a strong emphasis on literary representations. We will study a range of poetry, prose and drama spanning more than 450 years, tracing continuities and differences in relation to historical and sociological change. Above all, the aim is for students to enhance their semester abroad by reflecting deeply on their own experiences of London as visitors from overseas, in relation to the similar experiences of overseas visitors and immigrants to London over the past five centuries.
NU Course Equivalent: INSH 1600, Cultures of London – Abroad. NUpath: IC, DD.

NU Bound England -- *continued*

Current Issues in Cities and Suburbs
Introduces students to pressing urban issues: urban sprawl, poverty, education, transportation, economic development, and housing, through an intensive analysis of the Boston metropolitan area. The course is cotaught by university faculty and practitioners in government, community, and nonprofit organizations throughout the metropolitan area. Offers students the opportunity to analyze Boston data, go on outings to see development in progress, talk with urban practitioners about what they do, and conduct research on an urban issue of their choice.
NU Course Equivalent: POLS/SOCL 2358, Current Issues in Cities and Suburbs. NUpath: DD, SI.

Developmental Psychology
Examines change throughout the life span in social relationships, emotional functioning, language, cognition, and other psychological domains, with emphasis on infancy through adolescence. Introduces major theories of development. Stresses the interaction of social and cognitive factors in development, and the interaction of the developing person with the environment. Also explores individual and cross-cultural differences in patterns of development, and research issues in developmental psychology.
NU Course Equivalent: PSYC 3404, Developmental Psychology.
Prerequisite: PSYC 1101.

Differential Equations and Linear Algebra
Studies ordinary differential equations, their applications, and techniques for solving them including numerical methods (through computer labs using MS Excel and MATLAB), Laplace transforms, and linear algebra. Topics include linear and nonlinear first- and second-order equations and applications include electrical and mechanical systems, forced oscillation, and resonance. Topics from linear algebra, such as matrices, row-reduction, vector spaces, and eigenvalues/eigenvectors, are developed and applied to systems of differential equations.
Prerequisite: MATH 1342.
NU Course Equivalent: MATH 2341, Differential Equations and Linear Algebra.

Experience and Interaction
Explores the language of interactive experience as a compelling medium to communicate meaning. Examines how variables within the environment can change how we inhabit an experience physically, conceptually, and emotionally. Studies historical and contemporary examples of art and design projects designed as exchanges or experiences. Incorporates drawing as a means to understand the present and project potential future experiences.
NU Course Equivalent: ARTF 2223, Experience and Interaction. NUpath: EI.

Financial Accounting and Reporting
Covers the basic concepts underlying financial statements and the accounting principles followed in the preparation of the balance sheet, the income statement, and the statement of cash flows. Offers students an opportunity to become familiar with accounting terminology and methods designed to enable them to interpret, analyze, and evaluate published corporate financial reports. Wherever appropriate, the course relates current economic, business, and global events to accounting issues. Analyzes how financial reporting concepts affect the behavior of investors, creditors, and other external users. Emphasizes the importance of ethics in financial reporting. Requires second-semester-freshman standing or above.
NU Course Equivalent: ACCT 1201, Financial Accounting and Reporting.

First-Year Writing Studio
The goal of this course is to help students learn how to participate in an academic community, in part by helping students to become aware of the ways information and communication function within all sorts of different cultural groups. Students will learn how to assess a variety of communication situations, and how to make choices that will help them participate effectively in those situations. This course aims to help students negotiate writing goals and audience expectations regarding conventions of genre, medium, and situation; formulate and articulate a stance through writing; revise writing using responses from others, including peers and teachers; effectively use and appropriately cite sources in your writing; use multiple forms of evidence to support your claims, ideas, and arguments; practice critical reading strategies; provide revision-based response to your peers; and self-assess as writers.
NU Course Equivalent: ENGW 1111, First Year Writing. NUpath: WF.

NU Bound England -- *continued*

Foundations of Psychology
This course provides an introductory insight into psychology. It surveys fundamental principles, concepts, and issues in the major areas of contemporary scientific psychology. The goal of this course is for you to gain an understanding of multiple major areas of psychology including biological, behavioral, cognitive, and social factors that influence and regulate learning and motivation; personality dynamics; psychopathology and its treatment; life-span development; sensory and perceptual processes; and communication and social behaviors. We will be able to see how psychology is applied to explain individual differences in behaviors, attitudes and feelings. You will learn how psychological experiments are conducted and what famous psychological studies have revealed about human behavior.
NU Course Equivalent: PSYC 1101, Foundations of Psychology, NUpath: ND, SI.

General Biology 2 with Lab
Continues BIOL 1111. Examines the evolution of structural and functional diversity of organisms; the integrative biology of multicellular organisms; and ecological relationships at the population, community, and ecosystem levels.
Prerequisite: BIOL 1101, BIOL 1107, BIOL 1111, or BIOL 1115.
NU Course Equivalent: BIOL 1113/1114, General Biology 2 with Lab. NUpath: ND, AD.

General Chemistry for Science Majors with Lab
Introduces the principles of chemistry, focusing on the particulate nature of matter and its interactions and reactions that form the basis for the underlying molecular dynamics of living systems. Presents basic concepts of chemical bonding and intermolecular interactions for molecules and molecules' behavior in aqueous solutions with examples from biologically relevant molecules. Introduces kinetics and chemical thermodynamics with examples from biological systems. Offers students an opportunity to obtain a framework for understanding the chemical basis for different methods for separating and purifying biological compounds.
NU Course Equivalent: CHEM 1161/1162/1163, General Chemistry for Science Majors with Lab. NUpath: ND.

Global and Intercultural Communication
Focuses on theories of and approaches to the study of intercultural communication. Emphasizes the importance of being able to negotiate cultural differences and of understanding intercultural contact in societies and institutions. Stresses the benefits and complexities of cultural diversity in global, local, and organizational contexts.
NU Course Equivalent: COMM 2303, Global and Intercultural Communication. NUpath: SI, DD.

Global Markets and Local Culture
Examines selected topics in the socioeconomic transformation of other cultures, including urbanization, industrialization, globalization, commodity production, and international labor migration. Focuses on the impact of global capitalist development on contemporary developing and postcolonial societies as well as local responses and/or resistances to those changes.
NU Course Equivalent: ANTH 2305, Global Markets and Local Culture. NUpath: IC.

Intermediate Programming with Data with Lab
Offers intermediate to advanced Python programming for data science. Covers object-oriented design patterns using Python, including encapsulation, composition, and inheritance. Advanced programming skills cover software architecture, recursion, profiling, unit testing and debugging, lineage and data provenance, using advanced integrated development environments, and software control systems. Uses case studies to survey key concepts in data science with an emphasis on machine-learning (classification, clustering, deep learning); data visualization; and natural language processing. Additional assigned readings survey topics in ethics, model bias, and data privacy pertinent to today's big data world. Offers students an opportunity to prepare for more advanced courses in data science and to enable practical contributions to software development and data science projects in a commercial setting.
Prerequisite: DS 2000.
NU Course Equivalent: DS 2500/2501, Intermediate Programming with Data with Lab. NUpath: AD.

NU Bound England -- *continued*

International Business and Global Responsibility
The emphasis of this course is on the cultural, economic, strategic, and political aspects of national business environments and their impact on international business operations. Students are exposed to a variety of key international business concepts, ranging from strategic planning in the global arena, to managing behavior and interpersonal relations. Additional topics include free trade agreements, national trade policies, foreign market analysis, and international strategic management. Outside of the classroom we will visit some British Museum galleries, which is intended to support students' understanding of global cultural business environments around the world.
NU Course Equivalent: INTB 1203, International Business and Global Social Responsibility. NUpath: IC, ER.

International Relations: Theory and Practice
The study of international relations (IR) helps us understand the circumstances under which conflict and cooperation occur in the world. If we can determine the causes of these events, we might learn to control them. This course is designed as an introduction to the only academic discipline that is specifically concerned with the study of "The International". It offers a broad introduction to international relations and assumes no prior knowledge. It is structured to provide a balance between empirical applications and theoretical underpinnings. The course covers several mainstream and critical theories that help to explain recurring patterns in international relations, including realism, liberalism, Marxism, constructivism, and feminism. Along with these theories, we will explore basic concepts used by IR scholars, such as the "state," the "nation," "anarchy," and "power." We will then study the different ways in which to analyse fundamental problems of international relations— conflict or cooperation—whether by studying the "big picture,", the international system, or the inner workings of the state. Throughout the course you will be given the opportunity to apply complex and fast-changing scholarship to "real world" world problems, including state failure, climate change and security, international development, and humanitarian crises, which will enhance your critical thinking skills and help you to situate current international events in complex empirical and theoretical frameworks.
NU Course Equivalent: POLS 1160, International Relations. NUpath: SI.

Introduction to Marketing
Shifting forces and major consumption trends impacting markets in the digital age compete to create customer value, engagement and loyal relationships. Through real-world and engaging methods, this course provides an introduction to global marketing and what are considered effective marketing strategies, encouraging learners to recognize how customer value may be created and captured. Learning outcomes will enable a broader appreciation of basic marketing concepts, case-study strategies and Twenty-First century practices.
NU Course Equivalent: MKTG 2201, Introduction to Marketing.

Introduction to Sociology
Explores diverse social phenomena, from how people try to look their best in face-to-face interactions; to how race, gender, and class shape identities and social conditions; to how industrial capitalism came to dominate the world. Offers students an opportunity to gain a grasp of key sociological theories and empirical research on topics such as social order, social conflict, and social change, as well as learn to identify social forces that shape human behavior, explain how these forces affect individuals and social groups, and make valid predictions about how they may shape future behavior or events.
NU Course Equivalent: SOCL 1101, Introduction to Sociology. NUpath: SI, DD.

Introduction to Technology and Human Values
As long as here have been humans, there has been technology. Technology so permeates our form of life that some have characterized human beings as the technological animal. But while a relationship with technology is given, the nature of that relationship is not. Both human history and the contemporary world are replete with diverse and sometimes contradictory ways of conceiving of how people and technology interact. This course is oriented around these general questions: (1) What is the proper way to understand the relationship between humanity and technology? (2) What critical perspectives and tools can we use to evaluate the social, ethical, and to political dimensions of technology? (3) How can we make good decisions about incorporating emerging technologies into our society and lives?
NU Course Equivalent: PHIL 1145, Technology and Human Values, NUpath: SI, ER.

Organic Chemistry 1 with Lab
Introduces nomenclature, preparation, properties, stereochemistry, and reactions of common organic compounds. Presents correlations between the structure of organic compounds and their physical and chemical properties, and mechanistic interpretation of organic reactions. Includes chemistry of hydrocarbons and their functional derivatives.
Prerequisite: CHEM 1151, CHEM 1214, CHEM 1220, or CHEM 1161.
NU Course Equivalent: CHEM 2311/2312, Organic Chemistry 1 with Lab.

NU Bound England -- *continued*

People and Cultures
Surveys basic concepts in cultural anthropology by looking at a range of societies and the issues they face in a globalizing world. Examines the manner in which cultures adapt to, reject, or modify all of the changes they face. These changes impact everything from traditional family structure, to religion, gender, all the way to patterns of joking and concepts of beauty the world over.
NU Course Equivalent: ANTH 1101, Peoples and Cultures. NUpath: IC.

Physics for Engineering 1 with Lab and Interactive Learning Seminar
Covers calculus-based physics. Offers the first semester of a two-semester integrated lecture and laboratory sequence intended primarily for engineering students. Covers Newtonian mechanics and fluids. Stresses the balance between understanding the basic concepts and solving specific problems. Includes topics such as one-dimensional and three-dimensional motion, Newton's laws, dynamics friction, drag, work, energy and power, momentum and collisions, rotational dynamics, forces, torque and static equilibrium, pressure, fluids, and gravity.
NU Course Equivalent: PHYS 1151/1152/1153, Physics for Engineering 1 with Lab and ILS. NUpath: ND, AD.
Prerequisite: MATH 1241, 1251, 1340, 1341*, 1342* or 2321*.*May be taken concurrently.*

Physics for Engineering 2 with Lab
Continues PHYS 1151. Offers integrated lecture and laboratory. Covers electrostatics; capacitors; resistors and direct-current circuits; magnetism and magnetic induction; RC, LR, and LRC circuits; waves; electromagnetic waves; and radiation.
Prerequisite: PHYS 1151, PHYS 1161, or PHYS 1171; MATH 1252, MATH 1342, or MATH 2321 (may be taken concurrently).
NU Course Equivalent: PHYS 1155/1156/1157, Physics for Engineering 2 with Lab. NUpath: ND, AD.

Principles of Macroeconomics
Introduces macroeconomic analysis. Topics include the flow of national income, economics growth and fluctuation, the role of money and banking, and monetary and fiscal policies. Emphasizes the development of conceptual tools to analyze the economic problems facing modern society.
NU Course Equivalent: ECON 1115, Principles of Macroeconomics. NUpath: SI, AD.

Principles of Microeconomics
This course teaches the fundamentals of microeconomics, providing a solid foundation for economic analysis and thinking. This course begins with an introduction to supply and demand and the basic forces that determine an equilibrium in a market economy. It introduces a framework for learning about consumer behavior and analyzing consumer decisions. The course will explore consumers and their decision-making process as well as firms and their decisions about optimal production. In addition, the course covers the impact of different market structures on firms' behavior and further includes two guest lectures by economic scholars. By the end of the course, you will be able to understand introductory microeconomic theory, solve basic microeconomic problems, and use these techniques to think about a number of policy questions relevant to the operation of the real economy.
NU Course Equivalent: ECON 1116, Principles of Microeconomics. NUpath: SI, AD.

Public Speaking
Develops skills in public communication. Topics include choosing and researching a topic, organizing and delivering a speech, handling speech anxiety, listening critically, and adapting language to an audience. Offers the opportunity for students to present a series of speeches and receive advice and criticism from an audience.
NU Course Equivalent: COMM 1112, Public Speaking. NUpath: EI.

The World Since 1945
Examines the political, economic, social, and cultural relationship between the developed and developing world since the end of World War II. Topics include the Cold War, independence and national movements in developing countries, the globalization of the world economy, scientific and technological innovations, wealth and poverty, the eradication of some diseases and the spread of others, the fall of the Soviet Union, Middle East turmoil, and the enduring conflict between Israel and Palestine.
NU Course Equivalent: HIST 2211, The World Since 1945. NUpath: SI, DD.

NU Bound England -- *continued*

The Writer's Craft
The Writer's Craft Gives the developing writer an opportunity to practice writing various forms of both poetry and prose. Features in-class discussion of student work.
NU Course Equivalent: ENGL 2700, Creative Writing. NUpath: EI.

Topics in Design History
Explores various design history topics through pioneering designers whose work has influenced contemporary design culture. Instructor determines format and content.
NU Course Equivalent: ARTH 2200, Topics in Design History.

N.U.in Greece

Advanced College English Skills
This course offers students the opportunity to move across texts and genres, thus focusing on the basics of compositions and the use of metaphor, organization, selection, gaps and silences, tone, and point of view. Through a series of sequenced assignments, students read fiction and non-fiction texts of some complexity, make the critical interpretation of these texts the occasion for their own writing, write the expository prose that makes use of a variety of rhetorical strategies, conduct library research when appropriate, reflect on and assess their writing, and refine their documentation skills. Requires students to write multiple drafts and emphasizes the writing process as well as the quality of the finished product. Students keep a portfolio of their work.
NU Course Equivalent: ENGW 1111, First-Year Writing. NUpath: WF.

Anatomy and Physiology II
This course is the second part of a two-part Anatomy & Physiology Course. It is designed to provide an understanding of the anatomical structures, function and regulation of cardiovascular, respiratory, digestive, urinary, and immune systems. This course aims to provide students with knowledge of normal function of the organ systems and thereby provide the information base for interpreting data relating to health and disease. For those in health fields, this information will serve as the foundation for most of your courses.
Prerequisite: BIOL 1117 or BIOL 2217.
NU Course Equivalent: BIOL 2219/2220, Anatomy and Physiology 2 with lab. NUpath: ND.

Ancient Greek History
This course presents a survey of ancient Greek history from the Minoan through the Hellenistic period. The course follows a broad chronological account, but at the same time strongly emphasizes thematic trends and various aspects of social, economic and ideological history, including such institutions and values as political ideas, drama, city states, scientific and philosophical inquiry, trade, colonies, daily life, and gender. A variety of primary and secondary source materials will be employed to explore better who the ancient Greeks were and what their legacies have been.
NU Course Equivalent: HIST 1270, Ancient Greece.

Art Appreciation – Principles of Design
The purpose of this course is to introduce students to the general principles of design, that is, to the formal elements in any work of visual art (painting, sculpture, photography, film, contemporary installation art, etc.). The course will be thematic and topical and will consider examples from all periods of Western and non-Western Art. Included in the formal course work will be visits to local museums and galleries to examine firsthand artworks illustrating the different principles studied.
NU Course Equivalent: ARTH 1200, Visual Intelligence.

N.U.in Greece -- *continued*

Bio Statistics (with R)
This course is an introduction to descriptive and inferential statistical methods with a focus on biological applications. It covers concepts and techniques concerning exploratory data analysis, frequency distributions, confidence intervals and hypothesis testing, correlation and regression, central tendency and variation, probability principles, sampling distribution and statistical inference. Students will be exposed to these topics and will examine how each applies to and can be used in biological applications. Students will master problem solving using both manual computations and the open-source R-programming environment. The course will be balanced between classic text-oriented resources and relevant computer software. It intends to help students develop their critical thinking and problem-solving ability. Students are expected to have read assignments prior to class attendance.
NU Course Equivalent: ENVR 2500 / 2501: Biostatistics with Lab. NUpath: FQ, AD.

Biological Inquiries
During the course, we will investigate the biology of stress responses to environmental factors, like extreme temperature, pollutants, and pathogens, examine the involved mechanisms at different levels of biological organization and discuss the effects of these exposures for an organism and a population. Many different areas related to the topic will be surveyed, including biochemistry, regulation of gene expression, metabolism, cell signaling, physiology, and population dynamics.
Prerequisite: BIOL 1101, 1107 or 1111.
NU Course Equivalent: BIOL 2299: Inquiries in Cell and Molecular Biology. NUpath: ND.

Business/Professional Communication
The course focuses on professional reading writing and speaking skills and provides instruction in drafting and revising various forms of business and professional communication such as emails, proposals and reports. Through class discussions and other oral activities, students will have the opportunity to enhance their public speaking skills. The course covers all fundamental principles of professional writing, including a focus on appropriate grammar, mechanics and usage. Course readings/samples of professional writing are provided to generate topics and to study as models for structure and style in professional writing.
NU Course Equivalent: ENGW 1111, First-Year Writing. NUpath: WF.

Calculus I for Science and Engineering
This course covers definition, calculation, and major uses of the derivative, as well as an introduction to integration. Topics include limits; the derivative as a limit; rules for differentiation; and formulas for the derivatives of algebraic, trigonometric, and exponential/logarithmic functions. This course also discusses applications of derivatives to motion, density, optimization, linear approximations, and related rates. Topics on integration include the definition of the integral as a limit of sums, anti-differentiation, the fundamental theorem of calculus, and integration by substitution.
NU Course Equivalent: MATH 1341, Calculus 1 for Science and Engineering. NUpath: FQ.

Calculus II for Science and Engineering
The purpose of this course is to give a solid foundation in Calculus concepts, tools and techniques for the student entering Science and Engineering fields. This course is a continuation to Calculus I for Science and Engineering where the student mastered: limits, differentiation, anti-differentiation and basic integration skills of 2D functions as well as basic introduction to parameterized curves and motion. This course will cover techniques and applications of integration, infinite series, and introduction to vectors, among other topics.
NU Course Equivalent: MATH 1342, Calculus 2 for Science and Engineering. NUpath: FQ.
Prerequisite: Requires prior completion of MATH 1341 or permission of head mathematics advisor.

Calculus III for Science and Engineering
Extends the techniques of calculus to functions of several variables; introduces vector fields and vector calculus in two and three dimensions. Topics include lines and planes, 3D graphing, partial derivatives, the gradient, tangent planes and local linearization, optimization, multiple integrals, line and surface integrals, the divergence theorem, and theorems of Green and Stokes with applications to science and engineering and several computer lab projects.
NU Course Equivalent: MATH 2321, Calculus 3 for Science and Engineering. NUpath: FQ.
Prerequisite: Requires prior completion of MATH 1342 or MATH 1252.

N.U.in Greece -- *continued*

Clinical Psychology I: Psychopathology
This course will help students gain a thorough and critical understanding of clinical issues and specifically, mental health and illness, definition of psychopathology, diagnosis and various factors that should be taken into account in the process of identifying several psychological disorders. As mental health professionals need to be aware of all the important issues and ethics in the clinical field, students need to be acquainted with the main psychological disorders and critically apply theoretical information to case studies and real life examples from professional practice. Therefore, focus will be given to assessment, causation, risk factors and effects of the main psychological disorders but also students will be introduced to the basic principles of treatment and prevention strategies. Moreover, they will be acquainted with issues of stigma and social exclusion so that they are aware of diversity issues and their implication on clinical practice.
Prerequisite: PSYC 1101, Foundations of Psychology.
NU Course Equivalent: PSYC 3406, Abnormal Psychology.

Developmental Psychology
This module will focus on research and applications in the field of human development. Human development is the study of how people change and remain the same across the lifespan. The aim is to provide a review of the progression through the initial developmental stages (prenatal development and early years) and to further expand the students' knowledge of understanding on human development from school years through late adulthood. Areas such as biological, motor, cognitive, emotional, and social domains will be covered and these processes will be described within a theoretical and empirical framework. Students are encouraged to assess critically the contribution and applicability of psychological research to daily life through class discussions, presentations and written assignments.
Prerequisite: PSYC 1101
NU Course Equivalent: PSYC 3404: Developmental Psychology

Differential Equations and Linear Algebra
This course presents an overview of the methods to setup and solve such equations, called ordinary differential equations (ODE). In parallel, and motivated by systems of linear differential equations, the course will cover the core concepts of Linear Algebra. Following the completion of the course students are expected to have mastered the following topics: First Order Differential Equations; Higher Order Linear Differential Equations; Laplace Transforms; Numerical Methods; Boundary Value and Initial Value Problems; Applications to the Sciences; Systems of Equations and Matrices; Linear Transformations and Eigenvalues.
Prerequisite: MATH 1342, Calculus 2 for Science and Engineering.
NU Course Equivalent: MATH 2341, Differential Equations and Linear Algebra.

General Biology II with Lab
Examines the evolution of structural and functional diversity of organisms; the integrative biology of multicellular organisms; and ecological relationships at the population, community, and ecosystem levels.
Prerequisite: BIOL 1101, 1107, 1111 or 1115.
NU Course Equivalent: BIOL 1113/1114, General Biology 2 with Lab. NUpath: ND.

General Chemistry for the Biological Sciences
This course is designed to introduce biology students to the fundamental principles of chemistry. Topics to be covered include atomic structure, chemical equations, the periodic table, chemical bonding and intermolecular interactions, thermochemistry, reaction spontaneity, reaction rates, chemical equilibria, acid base chemistry and reactions in aqueous systems. Emphasis will be given to applications of chemical principles in biological systems.
NU Course Equivalent: CHEM 1161/1162/1163, General Chemistry for the Biological Sciences with Lab and Recitation. NUpath: ND.

Genetics and Molecular Biology
This course focuses on mechanisms of inheritance, gene-genome structure and function, and developmental genetics and evolution. Examples are drawn from the broad spectrum of plants, animals, fungi, bacteria, and viruses. Topics and analytical approaches include transmission genetics, molecular biology and gene regulation, DNA molecular methods, quantitative and population genetics, bioinformatics, genomics, and proteomics.
Prerequisite: (BIOL 1103, 1113, 1115, 2297, 2299, EEMB 1105, 2290, ENVR 2400 or EEMB 2400) and (CHEM 1211, 1217, 1151 or 1161).
NU Course Equivalent: BIOL 2301/2302, Genetics and Molecular Biology with Lab. NUpath: ND.

N.U.in Greece -- *continued*

Geographies of Globalization, Culture, and Identity
This course will examine the social, cultural, and political aspects of global geography. Students will become acquainted with key geographical concepts, and then explore issues of population and migration, culture, language, religion, globalization, nationalism, and cosmopolitanism. The course will use case studies to move from the broadly global to the local, giving students the opportunity to better understand Thessaloniki, Greece, and the Mediterranean both in the context of larger global issues and in relation to their own relationships to critical global geographies.
NU Course Equivalent: POLS 1990, Political Science Elective.

Intercultural Understanding and Communication
This Course aims to introduce students to a rounded understanding of how interactions between people from different cultural backgrounds takes place and the influences that affect such processes. In today's globalized world this seems to be central to our existence as empathic, sympathetic and adaptable persons, colleagues or citizens, among others. Drawing on case studies from diverse social and cultural contexts (such as the workplace or interpersonal relationships), we will develop knowledge and skills for more effective intercultural communication practices.
NU Course Equivalent: COMM 2303, Intercultural and Global Communication. NUpath: DD, SI.

Introduction to International Relations
The course studies and compares politics across states, by exploring several questions through research on similarities and differences among countries and within and between political systems. In the process, students will discover various ways in which institutional and non-institutional variables determine the answers to complicated questions like why nations thrive or fail, how culture affects governance quality, or what drives change within states and across borders. Country cases will be drawn from different regions of the world to ground students in the set of tools of comparative analysis, so that they may use these tools to further examine and link facts to the larger questions of international relations. The course will thus enhance student capacities to explain political phenomena, and eventually make predictions, using the comparative method.
NU Course Equivalent: POLS 1160, International Relations. NUpath: SI.

Introduction to Marketing
This course familiarizes students with the primary principles of Marketing and in the process develop their abilities in analyzing market situations and contribute to the formulation of a marketing strategy.
Prerequisite: ECON 1116, Principles of Microeconomics.
NU Course Equivalent: MKTG 2201, Introduction to Marketing.

Introduction to Mathematical Reasoning
This course covers the basics of mathematical reasoning and problem solving to prepare incoming math majors for more challenging mathematical courses at Northeastern. Focuses on learning to write logically sound mathematical arguments and to analyze such arguments appearing in mathematical books and courses. Includes fundamental mathematical concepts such as sets, relations, and functions.
NU Course Equivalent: MATH 1365: Introduction to Mathematical Reasoning

Microbiology
The goal of this course is to introduce foundational concepts in microbiology and their connection with all the health care fields. The course subjects include the identification of microbes, mechanisms of pathogenicity and microbial disease, structure and response of the host immune system, and prevention against the spread of infectious disease.
NU Course Equivalent: BIOL 2221/2222, Foundations of Microbiology.

Organic Chem I + Lab
The course introduces students to the fundamental principles of chemistry of carbon-containing compounds, including three dimensional structures, chemical properties and methods of structural identification, reactions, and syntheses. Topics to be covered include, stereochemistry, and functional group characteristics of alkanes, alkenes, alkynes, alkyl halides, alcohols, and ethers, with an emphasis on reaction mechanisms and multi-step syntheses.
Prerequisite: CHEM 1151, 1214, 1220 or 1161.
NU Course Equivalent: CHEM 2311/2312, Organic Chemistry 1 + Lab.

N.U.in Greece -- *continued*

Physics I for Science and Engineering with Lab
This course is designed to introduce students to the fundamental principles of Mechanics. Topics to be covered include Dynamics, Work, Kinetic and Potential Energy, Systems of Particles, Momentum, Collisions, Rotation, Torque and Angular Momentum, Statics. As far as specific Systems and Force Laws we will look at Fluids, Oscillations, and Gravity.
NU Course Equivalent: PHYS 1151/1152/1153 Physics for Engineering 1 with Lab with ILS. NUpath: ND, AD.
Prerequisite: MATH 1241, 1251, 1340, 1341*, 1342* or 2321*.*May be taken concurrently.*

Principles of Biology
This course is designed to introduce the basic principles of modern biology, the framework within which new discoveries are interpreted, and the relations among various branches of biological research. The goal of this course is to provide first-year college students with a firm grasp of the major concepts underlying biological processes. Students who are interested in careers in biological sciences, biomedical sciences, and biotechnology should find that the course provides a firm grasp on an understanding of the concepts that will serve them well in their academic track that lies ahead. The materials covered include the structural and functional aspects at the molecular and cellular level of the following: cell structure and function, cell organelles, cellular reproduction, cellular respiration, photosynthetic pathways, Mendelian inheritance, DNA structure, replication, gene structure, gene function and expression/control, evolution.
NU Course Equivalent: BIOL 1111/1112, General Biology 1 with Lab, NUpath: ND, AD.

Principles of Microeconomics
This course is a continuation of the introduction to modern economic analysis concentrating on the factors affecting behavior and decision-making by households, business firms, and institutions operating under a mixed socioeconomic system. It also considers the issues of market failures and introduces basic concepts of international economics.
NU Course Equivalent: ECON 1116, Principles of Microeconomics. NUpath: SI, AD

Religions of the World
This course will expose students to a comparative study of five of the world's main religious traditions, exploring those traditions through their literatures, while focusing also on origins, cultural contexts, histories, beliefs, and practices. Through reading, discussion, and visual appreciation of artistic renditions of religious world-views, students will gain valuable understanding of traditions other than their own, contributing to their broadened and deepened awareness of the world.
NU Course Equivalent: PHIL 1111, Introduction to World Religions. NUpath: DD, ER.

Topics in Mythology and Religion of the Classical World
The course provides a systematic in-depth study of the major mythological characters, deities and myths of (mostly) the Greeks and the Romans through the use of both primary and secondary source material, visual and literary. The approach will be thematic and we will explore the nature and scope of mythology as well as its relation to religion, history and art. Comparisons with associated mythologies of the ancient Mediterranean world will be in place in order to demonstrate the broader historical and cultural framework. The myths and religion will also be studied in terms of their endurance and relevance in the western world as well as in popular culture. Finally, they will function as a setting for the discussion of matters of spirituality in the contemporary world.
NU Course Equivalent: PHIL 1990, Philosophy Elective

Understanding Greek Life and Culture
The course provides an understanding of contemporary Greek life and what it means to be Greek. It does so by examining the practices and creations of Greek culture, as well as by identifying and understanding the main figures of Greek life and the political scene through time. In addition, it develops students' intercultural and communicative competency so that they can interact both locally in Greece and in the global community.
NU Course Equivalent: LITR 1990, Literature Elective. NUpath: IC.

University Physics II for Science and Engineering
Covers calculus-based physics. Offers the first semester of a two-semester integrated lecture and laboratory sequence intended primarily for engineering students. Covers Newtonian mechanics and fluids. Stresses the balance between understanding the basic concepts and solving specific problems. Includes topics such as one-dimensional and three-dimensional motion, Newton's laws, dynamics friction, drag, work, energy and power, momentum and collisions, rotational dynamics, forces, torque and static equilibrium, pressure, fluids, and gravity.
NU Course Equivalent: PHYS 1155/1156/1157, Physics for Engineering 2 with Lab and ILS. NUpath: ND, AD.
Prerequisite(s): PHYS 1151, PHYS 1161, or PHYS 1171; MATH 1252, MATH 1342, or MATH 2321 (may be taken concurrently)