ENTRY LEVEL COURSES

Resources for Course Information

http://catalog.iastate.edu/azcourses/

http://classes.iastate.edu

Experimental course listings: courses not published in the catalog. (https://www.registrar.iastate.edu/faculty-staff/courses/explistings/)

The following courses are suitable for first year students. Course numbers that begin with 0 (e.g., CHEM 050) may incur an additional "developmental course" fee. See the Tuition and Fees web site for more information about other fees (http://www.registrar.iastate.edu/fees/othfee/).

ABE 1600: Systematic Problem Solving and Computer Programming

Credits: 3.

Prereq: Credit or enrollment in MATH 1430 or MATH 1650

Systematic problem-solving using principles of dynamics, statics, mass/energy conservation, and algorithmic thinking. Use of spreadsheet programs and computer programming language(s) to solve engineering problems. Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, CE 1600, CHE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count towards graduation. (Typically Offered: Fall, Spring)

ABE 1700: Engineering Graphics and Introductory Design

Credits: 3.

Applications of multi-view drawings and dimensioning. Techniques for visualizing, analyzing, and communicating 3-D geometries. Application of the design process including written and oral reports.

ADVRT 2300: Advertising Principles

Credits: 3. Contact Hours: Lecture 3.

Historical, social, economic and legal aspects of advertising. Evaluations of advertising research, media, strategy and appeals. Study of the creation of advertising.

AERE 1600: Aerospace Engineering Problems With Computer Applications Laboratory

Credits: 3. Contact Hours: Lecture 2, Laboratory 2.

Prereq: Credit or enrollment in MATH 1650 or satisfactory (76+) score on mathematics placement exam

Introduction to aerospace engineering and systems thinking through engineering design team projects such as flight control of Lighter Than Air (LTA) vehicles. Introduction to programming using python. Solving aerospace engineering problems while learning about significant figures, estimation, units of measure, graphing, curve fitting, and presenting solutions through technical reports. Brief history of aerospace engineering. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, BME 1600, CE 1600, CHE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count towards graduation. (Typically Offered: Fall, Spring)

AFAM 2010: Introduction to African American Studies

Credits: 3. Contact Hours: Lecture 3.

An interdisciplinary introduction to the study of African American culture. Includes history, the social sciences, literature, religion, and the arts, as well as conceptual frameworks for investigation and analysis of the African American experience. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring)

AFAS 1410: Foundations of the United States Air Force

Credits: 1. Contact Hours: Lecture 1.

Explore the core values of the Department of the Air Force through hands-on activities designed to foster personal growth. This course develops practical skills in followership, accountability, initiative, resilience, and problem-solving. Students will cultivate essential leadership traits and a growth mindset, preparing them to excel in both military and professional environments. (Typically Offered: Fall)

AGRON 1200: Introduction to Renewable Resources

(Cross-listed with NREM 1200/ ENVS 1200).

Credits: 3. Contact Hours: Lecture 3.

Overview of soil, water, plants, and animals as renewable natural resources in an ecosystem context. History and organization of resource management. Concepts of integrated resource management. (Typically Offered: Fall, Spring)

AGRON 1800: Global Agriculture in a Changing World

Credits: 3. Contact Hours: Lecture 3.

A scientific investigation of the global distribution of climate, soils and agricultural production and consumption. Physical processes that connect natural resources to agriculture and the environment. How global change drives increasing demand for agricultural production. Meets International Perspectives Requirement. (Typically Offered: Fall)

AGRON 2060: Introduction to Weather and Climate
(Cross-listed with MTEOR 2060).
Credits: 3. Contact Hours: Lecture 3.
Basic concepts in weather and climate, including atmospheric measurements, radiation, stability, precipitation, winds, fronts, forecasting, and severe weather. Applied topics include global warming, ozone depletion, world climates and weather safety. (Typically Offered: Fall, Spring)

AMIN 2010: Native People in American Culture
Credits: 3. Contact Hours: Lecture 3.
Perceptions and realities of Native people living in and responding to American society and culture. Topics include representations, contemporary Native identity, literature, the arts, history, film, and issues of diversity. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring, Summer)

AMIN 2100: Introduction to American Indian Studies
Credits: 3. Contact Hours: Lecture 3.
Introduction to the multidisciplinary aspects of American Indian Studies. Topics include the relevant events and ideas defining the contemporary American Indian experience, on and off reservation, in the United States. Sovereignty, identity, jurisdiction, taxes, economic development, education, and other issues are addressed. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring, Summer)

ANS 1010: Working with Animals
Credits: 2. Contact Hours: Lecture 1, Laboratory 2.
An introductory course in skills for proper care, handling, and management of domestic animals. Terminology and skills in working with animals, identification, life-cycle management practices, and animal health management are introduced and examined. (Typically Offered: Fall, Spring)

ANS 1140: Survey of the Animal Industry
Credits: 2. Contact Hours: Lecture 2.
Principles of management and care of domestic animals, including genetics, nutrition, and reproduction. Service of domestic animals to society in terms of food, shelter, protection, fuel and emotional well-being. Basic biology, industry structure, management practices and production systems. (Typically Offered: Fall, Spring)

ANTHR 2010: Introduction to Cultural Anthropology
Credits: 3. Contact Hours: Discussion 1, Lecture 2.
Introduction to the core concepts, theories, and methods of cultural anthropology with an emphasis on understanding human cultural diversity in global society from an anthropological perspective. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring, Summer)

ANTHR 2020: Human Origins
Credits: 3. Contact Hours: Discussion 1, Lecture 2.
Human biological and cultural evolution; survey of the evidence from fossil primates, the human fossil record and the archaeological record, as well as living primates; introduction to research methods in archaeology and biological anthropology. (Typically Offered: Fall, Spring)

ANTHR 2300: Globalization and the Human Condition
Credits: 3. Contact Hours: Lecture 3.
An introduction to understanding key global issues in the contemporary world. Focuses on social relations, cultural practices and political-economic linkages among Africa, the Americas, Asia, Europe and the Pacific. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring)

ARCH 2210: Histories and Theories of Architecture to 1750
Credits: 3. Contact Hours: Lecture 3.
Survey of architectural ideas, theories, and practices before 1750. Emphasis on the mutually formative relationship between architecture and the social, cultural, economic, and political forces, nationally and globally, in which it is produced. (Typically Offered: Fall)

ARTH 2800: History of Art I
Credits: 3. Contact Hours: Lecture 3.
Development of the visual arts including painting, sculpture, architecture, and crafts, from the prehistoric through Gothic periods. Meets International Perspectives Requirement. (Typically Offered: Fall)

ARTH 2920: Introduction to Visual Culture Studies
Credits: 3. Contact Hours: Lecture 2, Discussion 1.
An introduction to various topics in visual culture studies, including significant trends in the visual arts, mass media, scientific imagery, visual communications, and other areas related to visual literacy and visual representation in local and global contexts. Cross cultural viewpoints and issues of diversity will be presented in relation to visual culture.

ASTRO 1030: Evening Star
Credits: 1. Contact Hours: Lecture 1.
An entirely web-based course covering topics in celestial mechanics ("Rocket science!") for students with little or no previous experience. It combines the geography of the solar system with discussion of methods of traveling to the other planets. The course "lectures" are on-line, interactive units with built-in exercises, hands-on (offline) activities, and layers of help. Graded homework and quizzes are administered via Canvas. Graduation Restriction: Students who take ASTRO 1200 may count credit in only one of ASTRO 1020 or 1030 toward graduation. (Typically Offered: Fall, Spring, Summer)

ASTRO 1200: The Sky and the Solar System
Credits: 3. Contact Hours: Lecture 2, Discussion 1.
For the nonscientist. A survey of our view of the universe, and the exploration of the solar system and beyond. The sky: constellations; motions of the Sun, Moon, and planets; seasons and the calendar; eclipses. The solar system: origin and evolution; characteristics of the Sun, planets, satellites, comets, meteorites, and asteroids. The detection and characterization of other solar systems, and the search for life in the universe. Extensive use of the planetarium is included. (Typically Offered: Fall, Spring, Summer)

ASTRO 1500: Stars, Galaxies, and Cosmology
Credits: 3.
For the nonscientist. A survey of astronomy with a focus on the universe beyond our solar system. Basic observational astronomy and the history of astronomy. Stellar astronomy: motions, distances, sizes, spectra; types of stars; variability; binary systems. Stellar evolution: the birth, life, and death of stars, including supernovae, neutron stars, and black holes. The structure and evolution of the Milky Way Galaxy. Other galaxies, clusters of galaxies, quasars. Theories of the origin of the universe. (Typically Offered: Fall, Spring)

BBMB 1010: Introduction to Biochemistry
Credits: 2. Contact Hours: Lecture 2.
Foundational principles of the molecules and chemistry of life, including structure and function of biological molecules: protein, lipids, nucleic acids, and carbohydrates. Survey of modern biotechnology frontiers. (Typically Offered: Fall)

BIOL 1010: Introductory Biology
Credits: 3. Contact Hours: Lecture 3.
Life considered at cellular, organism, and population levels. Function and diversity of the living world. Presentation of basic biological principles as well as topics and issues of current human interest. Graduation Restriction: BIOL 1010 does not satisfy biology major requirements. (Typically Offered: Fall, Spring, Summer)

BIOL 1550: Human Biology
Credits: 3. Contact Hours: Lecture 3.
A survey course of human biology, including principal structures and functions of the body systems and the diseases and disorders associated with them. Designed to meet general education requirements in natural science. Not recommended for those seeking a career in the allied health professions or for students majoring in life science. Does not satisfy biology major requirements. (Typically Offered: Fall, Spring)

BIOL 1730: Environmental Biology
(Cross-listed with ENVS 1730).
Credits: 3. Contact Hours: Lecture 3.
An introduction to the structure and function of natural systems at scales from the individual to the biosphere and the complex interactions between humans and their environment. Discussions of human population growth, biodiversity, sustainability, resource use, and pollution. Does not satisfy biology major requirements. (Typically Offered: Fall, Spring)

BIOL 2110: Principles of Biology I
Credits: 3. Contact Hours: Lecture 3.
Introduction to the nature of life, including the diversity of microbial, plant, and animal life; the nature of heredity; evolution; and principles of ecology. Intended for life science majors. (Typically Offered: Fall, Spring)

BIOL 2110L: Principles of Biology Laboratory I
Credits: 1. Contact Hours: Laboratory 3.
Prereq: Credit or enrollment in BIOL 2110
Laboratory to accompany 2110. (Typically Offered: Fall, Spring)

BIOL 2120: Principles of Biology II
Credits: 3. Contact Hours: Lecture 3.
Introduction to the chemical, molecular, and cellular basis of life; form and function of microbial, plant, and animal life. Intended for life science majors. HS courses in biology and chemistry necessary. Credit or enrollment in CHEM 1630 or CHEM 1770 recommended. (Typically Offered: Fall, Spring)

BIOL 2120L: Principles of Biology Laboratory II
Credits: 1. Contact Hours: Laboratory 3.
Prereq: Credit or enrollment in BIOL 2120
Laboratory to accompany 2120. (Typically Offered: Fall, Spring)

BIOL 2550: Fundamentals of Human Anatomy
Credits: 3. Contact Hours: Lecture 3.
An introduction to human anatomy, beginning with cells and tissues, surveying all body systems, relating form to function. Systems covered include: integumentary, bones and joints, muscles, nervous, sensory, endocrine, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive. Pre-Medical students should consider BIOL 3510 for their anatomy background. Does not satisfy biology major requirements. HS courses in biology and chemistry necessary. Credit or enrollment in BIOL 1010 recommended. (Typically Offered: Fall)

BIOL 2550L: Fundamentals of Human Anatomy Laboratory
Credits: 1. Contact Hours: Laboratory 3.
Prereq: Credit or enrollment in BIOL 2550
Investigation of human anatomy using models and dissections of preserved organs and model mammals. Pre-Medical students should consider 3510 for their anatomy background. Does not satisfy biology major requirements. (Typically Offered: Fall)

BUSAD 1020: Business Learning Team Orientation
Credits: 1. Contact Hours: Lecture 1.
A required orientation for all College of Business Students involved with a Business Learning Team. Review of college and university requirements, transfer credits, academic planning, university policies and deadlines and registration procedures. Includes a consideration of various business majors and careers, tools for success in college including writing skills and presentations from employers, alumni and current students. (Typically Offered: Fall, Spring)

BUSAD 1030: Orientation
Credits: 1. Contact Hours: Lecture 1.
A required orientation for all College of Business students. Review of college and university requirements, transfer credits, academic planning, university policies and deadlines, and registration procedures. Includes group advising for course selection and registration. (Typically Offered: Fall, Spring)

CE 1600: Engineering Problems with Computational Laboratory
Credits: 3. Contact Hours: Laboratory 2, Lecture 2.
Prereq: Credit or Enrollment in MATH 1650
Engineering approach to solving problems and presenting results with applications to examples in civil, construction, and environmental engineering, such as problems in statics. Dimensions and units.
Data processing, graphing, and curve fitting. Formulating and solving fundamental and practical engineering problems with spreadsheets and a structured programming language. Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, CE 1600, CHE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count towards graduation. (Typically Offered: Fall, Spring)

CE 1700: Graphics for Civil Engineering
Credits: 2. Contact Hours: Laboratory 4.
Prereq: Credit or concurrent enrollment in MATH 1430 or MATH 1450 or MATH 1650 (or satisfactory scores on mathematics placement assessments)

Integration of fundamental graphics, computer modeling, and engineering design. Applications of multi-view drawings and dimensioning. Techniques for visualizing, analyzing, and communicating 3-D geometries. Application of the design process. Freehand and computer methods. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/. (Typically Offered: Fall, Spring)

CRP 2010: The North American Metropolis
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Examination of the evolution of American urban centers from the colonial era to the present. Considers the demographic changes and social movements underway in urban America and explores how an understanding of the history of cities provides us with knowledge that we can use to improve our cities today. (Typically Offered: Fall, Spring)

CRP 2510: Fundamentals of Geographic Information Systems
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Fundamentals of the concepts, models, functions and operations of Geographic Information Systems (GIS). Principals of spatial problems, spatial questions and hypotheses and their solutions based on spatial data, GIS tools and techniques. Integration of concepts and applications through lectures and facilitated labs. Applications from a variety of areas including design; physical, social, and human science; engineering; agriculture; business and medicine, landscape architecture, architecture, urban planning, geology, forestry, biology, and ecology. (Typically Offered: Fall)

CHE 1600: Chemical Engineering Problems with Computer Applications Laboratory

Credits: 3. Contact Hours: Lecture 2, Laboratory 2.

Prereq: (MATH 1430 or satisfactory scores on mathematics placement examinations) AND (MATH 1650 or satisfactory scores on mathematics placement examinations)

Formulation and solution of engineering problems. Significant figures. Use of SI units. Graphing and curve-fitting. Flowcharting. Introduction to material balances, engineering economics, and design. Use of spreadsheet programs to solve and present engineering problems. Solution of engineering problems using computer programming languages. Chemical Engineering examples. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/.Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, CHE 1600, CE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count towards graduation. (Typically Offered: Fall, Spring)

CHEM 1600: Chemistry in Modern Society

Credits: 3. Contact Hours: Lecture 3.

Aspects of chemistry visible to a non-scientist in our society. A survey of selected areas of chemistry with emphasis on the interface between chemistry and other fields of human activity. (Typically Offered: Fall, Spring)

CHEM 1630: College Chemistry

Credits: 4. Contact Hours: Lecture 3, Discussion 1.

Prereq: Credit or concurrent enrollment in CHEM 1630L

A general survey of chemistry with an emphasis on conceptual problems for those who are not physical and biological science or engineering majors. Nomenclature, chemical reactions, stoichiometry, atomic structure, periodic properties, chemical bonding, states of matter, solutions, thermochemistry, acid-base theory, oxidation-reduction reactions, basic chemical kinetics, and chemical equilibrium. 1 year of high school algebra and geometry and CHEM 0500 or 1 year of high school chemistry necessary.Graduation Restriction: Only one of CHEM 1630, 1670, 1770, or 2010 may count toward graduation. (Typically Offered: Fall, Spring, Summer)

CHEM 1630L: Laboratory in College Chemistry

Credits: 1. Contact Hours: Laboratory 3.

Prereq: Credit or enrollment for credit in CHEM 1630

Laboratory to accompany CHEM 1630. Must be taken with CHEM 1630. Graduation Restriction: Only one of CHEM 1630L, 1670L, and 1770L may count toward graduation. (Typically Offered: Fall, Spring, Summer)

CHEM 1670: General Chemistry for Engineering Students

Credits: 4. Contact Hours: Lecture 3, Discussion 1.

Prereq: College of Engineering Students OR Open Option Undergraduate Undeclared Students

Principles of chemistry and properties of matter explained in terms of modern chemical theory with emphasis on topics of general interest to the engineer. MATH 1400 or 2 years of high school algebra and 1 year of high school geometry and CHEM 0500 or 1 year of high school chemistry necessary. Graduation Restriction: Only one of CHEM 1630, 1670, 1770, or 2010 may count toward graduation. (Typically Offered: Fall, Spring)

CHEM 1770: General Chemistry I

Credits: 4. Contact Hours: Lecture 3, Discussion 1.

Prereq: Credit or enrollment in CHEM 1770L

The first semester of a two-semester sequence which explores chemistry at a greater depth and with more emphasis on concepts, problems, and calculations than 1630. Recommended for physical and biological science majors, chemical engineering majors, and all others intending to take 3000-level chemistry courses. Principles and quantitative relationships, stoichiometry, chemical equilibrium, acid-base chemistry, thermochemistry, rates and mechanism of reactions, changes of state, solution behavior, atomic structure, periodic relationships, chemical bonding. Chemistry and Biochemistry majors may consider taking CHEM 2010. MATH 1400 or 2 years of high school algebra and 1 year of high school geometry and CHEM 0500 or 1 year of high school chemistry necessary. Graduation Restriction: Only one of CHEM 1630, 1670, 1770, or 2010 may count toward graduation. (Typically Offered: Fall, Spring, Summer)

CHEM 1770L: Laboratory in General Chemistry I

Credits: 1. Contact Hours: Laboratory 3.

Prereq: Credit or concurrent enrollment in CHEM 1770

Laboratory to accompany 1770. 1770L must be taken with 1770. Graduation Restriction: Only one of CHEM 1630L, 1670L, and 1770L may count toward graduation. (Typically Offered: Fall, Spring, Summer)

CHEM 1770N: Laboratory in General Chemistry I

Credits: 1. Contact Hours: Laboratory 3.

Prereq: Credit or concurrent enrollment in CHEM 1770

Laboratory to accompany CHEM 1770. CHEM 1770N must be taken with CHEM 1770. For Chemistry and Biochemistry majors. Laboratory to accompany CHEM 1770. CHEM 1770N must be taken with CHEM 1770. Graduation Restriction: Only one of CHEM 1630, 1670, 1770, or 2010 may count toward graduation. (Typically Offered: Fall)

CHEM 1780: General Chemistry II
Credits: 3. Contact Hours: Lecture 2, Discussion 1.
Prereq: CHEM 1630 or CHEM 1670 or (CHEM 1770; CHEM 1770L)
Continuation of 1770. Recommended for physical or biological science majors, chemical engineering majors, and all others intending to take 3000-level chemistry courses. (Typically Offered: Fall, Spring, Summer)

CHEM 1780L: Laboratory in College Chemistry II
Credits: 1. Contact Hours: Laboratory 3.
Prereq: CHEM 1770L and (Credit or concurrent enrollment in CHEM 1780)
Laboratory to accompany 1780. 1780L is not a necessary co-requisite with 1780. (Typically Offered: Fall, Spring, Summer)

CHEM 2010: Advanced General Chemistry
Credits: 5. Contact Hours: Lecture 4, Discussion 1.
Prereq: Credit or concurrent enrollment in MATH 1650 or MATH 1660 or MATH 2650; concurrent enrollment in CHEM 2010L
A one-semester course in general chemistry designed to give students an in-depth, broad-based view of modern chemistry, and, in part, to facilitate participation in independent undergraduate research. Topics include stoichiometry, atomic and molecular structure, chemical bonding, kinetics, chemical equilibria, and thermodynamics. Discussion of current trends in various chemical disciplines, which may be given by guest experts in chemistry, biochemistry, and chemical engineering, will help the student appreciate the scope of the chemical sciences and how research is carried out. One year HS chemistry and one year HS physics, or advanced chemistry necessary. Graduation Restriction: Only one of CHEM 1630L, 1670L, and 1770L may count toward graduation. (Typically Offered: Fall)

CHIN 1010: Elementary Mandarin Chinese I
Credits: 4. Contact Hours: Lecture 4.
Introduction to spoken and written colloquial Mandarin through pinyin and simplified characters. For students whose native language is not Chinese. (Typically Offered: Fall)

CHIN 2010: Intermediate Mandarin Chinese I
Credits: 4. Contact Hours: Lecture 4.
Prereq: (CHIN 1020) OR (Score between 300 - 400 on Chinese WLC Placement Exam)
Development of speaking, writing, reading, and listening skills. Review and expansion of grammar skills, intensification of character acquisition. For students whose native language is not Chinese. Meets International Perspectives Requirement. (Typically Offered: Fall)

CJ 2400: Introduction to the U.S. Criminal Justice System
Credits: 3. Contact Hours: Lecture 3.
Provides systematic overview of law, police organization and behavior, prosecution and defense, sentencing, the judiciary, community corrections, penology, and capital punishment. The course demonstrates the role of discretion in all of these agencies as well as the sociological influences of age, race, gender, and social class on criminal justice system processes. (Typically Offered: Fall)

CLST 2730: Greek and Roman Mythology
Credits: 3. Contact Hours: Lecture 3.
Survey of the legends, myths of the classical world with emphasis on the principal gods, and heroes, and their relation to ancient social, psychological, and religious practices; some attention may be given to important modern theories. Meets International Perspectives Requirement.

COMS 1010: Orientation
Credits: Required. Contact Hours: Discussion 1, Lecture 1.
Required orientation class for all incoming students in the Computer Science major. Topics include academic planning and policies, campus resources, and supports. Opportunity to connect with other computer science peers, faculty, alumni, and employers. Offered on a satisfactory-fail basis only. (Typically Offered: Fall, Spring)

COMS 1030: Computer Literacy and Applications
Credits: 4. Contact Hours: Lecture 3, Laboratory 2.
Introduction to computer literacy and applications. Literacy: Impact of computer technology in today's societies, hardware, software, software programming, database and information systems, communication and networks, digital media technology, computer security and safety, ethics and privacy. Applications: In-depth hands-on experience with the operating systems, Microsoft word processing, spreadsheets, database management and presentation software. No prior computer experience necessary. Offered online only. (Typically Offered: Fall, Spring, Summer)

COMS 1040: Brief Introduction to Computer Programming for Non-Majors
Credits: 2. Contact Hours: Lecture 1.5, Discussion 0.5.
Offered first 8 weeks and last 8 weeks. Use of personal computer and workstation and beginning programming. Project-oriented approach to computer operation and programming, including use of tools to aid in programming. Topics from computer history, using basic Windows and MacOS tools, program structure, expression, variables, decision and logic, and iteration. No prior computer experience necessary. (Typically Offered: Fall, Spring)

COMS 1070: Windows Application Programming
Credits: 3. Contact Hours: Lecture 3.
Introduction to computer programming for non-majors using a language such as the Visual Basic language. Basics of good programming and algorithm development. Graphical user interfaces. (Typically Offered: Fall, Spring)

COMS 1130: Introduction to Spreadsheets and Databases
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Using Microsoft Excel spreadsheets and Microsoft Access databases to input, store, process, manipulate, query, and analyze data for business and industrial applications. Graduation Restriction: Credit in COMS 1130 may not be applied toward graduation in the SE and CPRE majors. (Typically Offered: Fall, Spring, Summer)

COMS 2070: Fundamentals of Computer Programming
Credits: 3. Contact Hours: Lecture 3, Discussion 1.
Prereq: MATH 1500 or credit or enrollment in MATH 1400 or higher
An introduction to computer programming using an object-oriented programming language. Emphasis on the basics of good programming techniques and style. Extensive practice in designing, implementing, and debugging small programs. Use of variable, if-statement, looping, method, and class. Interactive and file I/O. This course is not designed for computer science, software engineering, and computer engineering majors. Graduation Restriction: Credit may not be applied toward graduation for both COMS 2070 and COMS 2270. (Typically Offered: Fall, Spring, Summer)

COMS 2270: Object-oriented Programming
Credits: 4. Contact Hours: Lecture 3, Laboratory 2.
Prereq: Credit or concurrent enrollment in MATH 1430 or higher; (COMS 1270 or CPRE 1850 or SE 1850 or EE 2850)
Computer programming using objects as the mechanism for modularity, abstraction, and code reuse. Instance variables, methods, and encapsulation. Review of control structures for conditionals and iteration. Developing algorithms on strings, arrays, and lists. Recursion, searching, and sorting. Text parsing and file I/O. Interfaces, inheritance, polymorphism, and abstract classes. Exception handling. Tools for unit testing and debugging. Emphasis on a disciplined approach to specification, code development, and testing. Course intended for majors in computer science and related fields. Graduation Restriction: Credit may not be applied toward graduation for both COMS 2070 and 2270. (Typically Offered: Fall, Spring, Summer)

COMS 2280: Introduction to Data Structures
Credits: 3. Contact Hours: Lecture 3, Discussion 1.
Prereq: Minimum of C- in COMS 2270; credit or concurrent enrollment in MATH 1650
An object-oriented approach to data structures and algorithms. Object-oriented analysis, design, and programming, with emphasis on data abstraction, inheritance and subtype polymorphism, and generics. Abstract data type specification and correctness. Collections including lists, stacks, queues, trees, heaps, maps, hash tables, and graphs. Big-O notation and algorithm analysis. Searching and sorting. Graph search and shortest path algorithms. Emphasis on object-oriented design, writing and documenting medium-sized programs. This course is designed for majors. (Typically Offered: Fall, Spring, Summer)

COMST 1010: Introduction to Communication Studies
Credits: 3. Contact Hours: Lecture 3.
An introduction to communication theory, the development and functions of communication, and a survey of verbal, nonverbal, interpersonal, small group, organizational, and intercultural communication.

COMST 2110: Interpersonal Communication
Credits: 3. Contact Hours: Lecture 3.
Apply interpersonal communication theory and concepts to daily interactions. Develop knowledge and skills such as listening and responding, conversation management, using and interpreting nonverbals, conflict resolution, among others. Build skills leading to effective interactions in friendships, romances, families, and the workplace. .

CPRE 1850: Introduction to Computer Engineering and Problem Solving I
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Prereq: (MATH 1430 or satisfactory scores on mathematics placement examinations) OR (MATH 1650 or satisfactory scores on mathematics placement examinations)
Introduction to Computer Engineering. Project based examples from computer engineering. Individual interactive skills for small and large groups. Computer-based projects. Solving engineering problems and presenting solutions through technical reports. Solution of engineering problems using a programming language. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, BME 1600, CE 1600, CHE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count towards graduation.

DANCE 2700: Dance Appreciation
Credits: 3. Contact Hours: Lecture 3.
Introduction to the many forms and functions of dance in world cultures. Develop abilities to distinguish and analyze various dance styles. No dance experience required. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring)

DES 2300: Design Thinking
Credits: 3. Contact Hours: Lecture 3.
Introduction to design thinking processes, toolkits, and mindsets, and its interaction with art, design, and technology. Emphasis on interdisciplinary practices.

DS 2010: Introduction to Data Science
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Prereq: Satisfactory math placement test score (ALEKS, 51+)
Data Science concepts and their applications; domain case studies with applications in various fields; overview of data analysis; major components of data analysis pipelines; computing concepts for data science; descriptive data analysis; hands-on data analysis experience; communicating findings to stakeholders, and ethical issues in data science. Placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/. (Typically Offered: Fall, Spring)

DSNS 1020: Design Studio I
Credits: 4. Contact Hours: Lecture 1, Studio 6.
A foundation design studio exploring twoand three-dimensional design. Emphasis on fundamental skills and ideas shared across design disciplines. Creative processes, visual order, materials, and critical thinking are investigated through studio projects. Lectures and discussions cover the topics introduced in studios.

DSNS 1150: Design Collaborative Seminar
Credits: 1. Contact Hours: Lecture 1.
Orientation to the College of Design. Introduction to the design disciplines and studio pedagogy.

DSNS 1310: Drawing I
Credits: 4. Contact Hours: Lecture 1, Studio 6.
An introduction to methods of visual thinking and drawing through studio experiences and lectures. All design fields utilize visual communication and drawing. Focus on the use of drawing as a method for creative problem solving, design development and visual communication. Explore, from observation and imagination, the use of fast sketching and in-depth drawing, using various scales, mediums and processes.

DSNS 1830: Design in Context
Credits: 3. Contact Hours: Discussion 1, Lecture 2.
Explores designed media, objects, places, spaces, structures, and systems as products of varied and often intersecting contexts. Using historical and contemporary case studies, investigates how cultural, economic, environmental, spatial, social, and temporal contexts, among others, affect design. Explores in particular how design addresses complex and multifaceted problems.

DSNS 2320: Digital Design Communications
Credits: 3. Contact Hours: Lecture 3.
Introductory investigations of various digital design media to develop multi-dimensional problem solving, digital communication skills and perceptual sensitivity. Open to all university majors.

EE 1850: Introduction to Electrical Engineering and Problem-Solving I
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Prereq: (MATH 1430 or satisfactory scores on mathematics placement examinations) OR (MATH 1650 or satisfactory scores on mathematics placement examinations)
Project based examples from electrical engineering. Systematic thinking process for engineering problem solving. Group problem solving. Mathematical, conceptual and computer-based projects. Solving engineering problems and presenting solutions through technical reports and oral presentations. Solutions of engineering problems using computation tools and basic programming. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/.Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, BME 1600, CE 1600, CHE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count towards graduation. (Typically Offered: Fall, Spring)

ECON 1010: Principles of Microeconomics
Credits: 3. Contact Hours: Lecture 3.
Resource allocation, opportunity cost, comparative and absolute advantage. Supply and demand. Marginal analysis. Theories of production and consumption, pricing, and the market system. Perfect and imperfect competition and strategic behavior. Factor markets. Present discounted value. (Typically Offered: Fall, Spring, Summer)

ECON 1010L: Laboratory in Principles of Microeconomics
Credits: 1. Contact Hours: Laboratory 2.
Discussion of material typically covered in ECON 1010. Application of economic principles to real world problems. Economic principles and basic business management concepts applied to decision-making in agribusiness operations. (Typically Offered: Fall)

ECON 1020: Principles of Macroeconomics
Credits: 3. Contact Hours: Lecture 3.
Measurement of macro variables and general macro identities. Classical models of full employment. Production and growth. Savings and investment. Employment and unemployment. Money, inflation, and price levels. Operation of the U.S. banking system. Fiscal and monetary policy. Elements of international finance. ECON 1010 recommended. (Typically Offered: Fall, Spring, Summer)

ECON 2350: Introduction to Agricultural Markets
Credits: 3. Contact Hours: Lecture 3.
Prereq: ECON 1010
Basic concepts and economics principles related to markets for agricultural inputs and products. Overview of current marketing problems faced by farms and agribusinesses, farm and retail price behavior, structure of markets, food marketing channels, food quality and food safety, and the role of agriculture in the general economy. The implications of consumer preferences at the farm level. Introduction to hedging, futures, and other risk management tools. (Typically Offered: Fall, Spring)

EDUC 2040: Social Foundations of Education in the United States: Secondary
Credits: 3. Contact Hours: Lecture 3.
Introduction to the historical and contemporary landscape of schooling in the United States. Emphasis is placed on topics and tensions in the relationship between school and society (e.g. equity of access to education and competing purposes of education) and the implications of these topics and tensions for teaching and learning at the secondary level in public schools. For prospective teachers in an ISU Secondary Educator Preparation program; open to students who are considering teaching and/or work in education as a career path. (Typically Offered: Fall, Spring, Summer)

EDUC 2050: Social Foundations of Education in the United States: Early Childhood and Elementary Education
Credits: 3. Contact Hours: Lecture 3.
Introduction to the historical and contemporary landscape of schooling in the United States. Emphasis on topics and tensions in the relationship between school and society (e.g., equity of access to education and competing purposes of education) and the implications of these topics and tensions for teaching and learning in public schools. Student in K-12 education, or a non-education major should take EDUC 2040. (Typically Offered: Fall, Spring)

EDUC 2190: Orientation to Teacher Education: English, FCS, History, Math, Science and World Language Majors
Credits: 1. Contact Hours: Lecture 1.
Overview of English, mathematics, science, family and consumer sciences and history, and world language and cultures secondary education (grades 5-12), teacher licensure requirements in Iowa and other states. Program and career planning. Offered on a satisfactory-fail basis only. (Typically Offered: Fall, Spring)

ENGL 1010B: English for Native Speakers of Other Languages: Academic English
Credits: 3. Contact Hours: Lecture 3.
For undergraduates: Completion of ENGL 1010 requirement prepares students for ENGL 1500. For graduates: Completion of ENGL 1010 satisfies the English requirement of the Graduate College. ENGL 1010 courses are limited to students who are nonnative speakers of English. See English Requirement for International Students in Index for additional information about placement exam. Graduation Restriction: Credit from ENGL 1010 does not count toward graduation. (Typically Offered: Fall, Spring)

ENGL 1010C: English for Native Speakers of Other Languages: Academic English II--Undergraduates
Credits: 3. Contact Hours: Lecture 3.
Prereq: For students in EPT Advisory Program - [(Result of "Test attempted and course is Not Required" or "Test attempted and course was Waived" on EPT for ENGL 1010B OR Credit in ENGL 1010B) AND (Undergraduate Student)]

For undergraduates: Completion of ENGL 1010 requirement prepares students for ENGL 1500. For graduates: Completion of ENGL 1010 satisfies the English requirement of the Graduate College. ENGL 1010 courses are limited to students who are nonnative speakers of English. See English Requirement for International Students in Index for additional information about placement exam. Graduation Restriction: Credit from ENGL 1010 does not count toward graduation. (Typically Offered: Fall, Spring)

ENGL 1500: Critical Thinking and Communication
Credits: 3. Contact Hours: Lecture 3.
Prereq: For students in EPT Advisory Program - [(Status of "Satisfied" for ENGL 1010C)]
Application of critical reading and thinking abilities to topics of civic and cultural importance. Introduction of basic oral, visual, and electronic communication principles to support writing development. Initiation of communication portfolio. Concurrent enrollment in LIB 1600 is recommended. (Typically Offered: Fall, Spring, Summer)

ENGL 2010: Introduction to Literature
Credits: 3. Contact Hours: Lecture 3.
Prereq: Credit or concurrent enrollment in ENGL 1500
Introduction to the diversity of literary texts. Students will explore work across different genres (drama, poetry, short fiction, the novel) and traditions (Indigenous, postcolonial, global, British, American). Recommended for nonmajors.

ENGL 2140: Introduction to Technical Communication
Credits: 3. Contact Hours: Lecture 3.
Prereq: ENGL 1500.
A broad introduction to the culture of professional work as a technical communicator, with particular emphasis on principles and best practices for developing and managing technical information and digital media. Examination of user-centered design, the history of the discipline, cross-cultural communication, and the ethics of communicating complex information to lay audiences. Study and practice of team-based collaboration, project management, and technical editing. (Typically Offered: Fall)

ENGL 2250: Survey of British Literature to 1800
Credits: 3. Contact Hours: Lecture 3.
Prereq: ENGL 2500
Survey of British Literature from its beginnings to 1800. Representative works studied in their historical, cultural, and literary contexts that span nearly 900 years of shifts in religious, political, ethnic, and philosophical cultures.

ENGL 2260: Survey of British Literature since 1800
Credits: 3. Contact Hours: Lecture 3.
Prereq: ENGL 2500
Representative works studied in their historical, cultural, and literary contexts, including attention to the impact and legacy of the British empire on its former colonies, i.e., postcolonial literature.

ENGL 2370: Survey of Film History
Credits: 3. Contact Hours: Lecture 3.
Prereq: Credit in or enrollment in ENGL 1500 or 2500
Survey of U.S. and international film history from its beginnings in the late nineteenth century to the present.

ENGL 2400: Introduction to American Indian Literature
(Cross-listed with AMIN 2400).
Credits: 3. Contact Hours: Lecture 3.
Prereq: Credit in or enrollment in ENGL 1500 or 2500
Survey of American Indian Literature of varying genres, including fiction, non-fiction, poetry, film, drama, and media. Focuses on interdisciplinary approaches to American Indian cultural, social, and environmental issues. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall)

ENGL 2500: Written, Oral, Visual, and Electronic Composition
Credits: 3. Contact Hours: Lecture 3.
Prereq: For students in EPT Advisory Program - [(Status of "Satisfied" for ENGL 1010C) AND (Credit or enrollment in LIB 1600) AND (Credit or exemption from ENGL 1500)] OR For students not in EPT Advisory Program: [(Credit or exemption from ENGL 1500) AND (Credit or enrollment in LIB 1600)]
Analyzing, composing, and reflecting on written, oral, visual, and electronic (WOVE) discourse within academic, civic, and cultural contexts. Emphasis on supporting a claim and using primary and secondary sources. Continued development of communication portfolio. Graduation Restriction: The University requires a minimum grade of C in ENGL 2500 to meet the Communication Proficiency graduation requirement; some majors/degree programs may set higher standards. (Typically Offered: Fall, Spring, Summer)

ENGL 2750: Analysis of Popular Culture Texts
(Cross-listed with SPCM 2750).
Credits: 3. Contact Hours: Lecture 3.
Prereq: Credit or concurrent enrollment in ENGL 2500
Analysis of how information and entertainment forms persuade and manipulate audiences. Study of several forms that may include newspapers, speeches, television, film, advertising, fiction, and magazines. Special attention to verbal and visual devices. (Typically Offered: Fall, Spring)

ENGR 1600: Engineering Problems with Computer Applications Laboratory
Credits: 3.
Prereq: MATH 1430 or satisfactory score of 76 on mathematics placement exam
Solving engineering problems and presenting solutions through technical reports. Significant figures. Use of SI units. Graphing and curve-fitting. Flowcharting. Introduction to mechanics, statistics and engineering economics. Use of spreadsheet programs to solve and present engineering problems. Solution of engineering problems using computer programming languages. (The honors section includes application of programming to mobile robotics). Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, CE 1600, CHE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count towards graduation. (Typically Offered: Fall, Spring, Summer)

ENT 2010: Introduction to Insects
Credits: 1. Contact Hours: Lecture 2.7.
Biological and ecological aspects of insects. Offered online only. 5 weeks. (Typically Offered: Fall, Spring)

ENT 2110: Insects and Society
Credits: 2. Contact Hours: Lecture 2.7.
The importance of insects in human well-being. Insect-human interactions. Primarily for non-science and non-agriculture majors. Offered online only. 11 weeks. (Typically Offered: Fall, Spring)

ENT 2140: Insects in Forensic Science
Credits: 3. Contact Hours: Lecture 3.
Introduction to the use of insects as evidence in court and how they can assist in solving crimes. Topics covered include basic insect biology, systematics, behavior, with emphasis on applications of forensic entomology. Offered even-numbered years. (Typically Offered: Fall)

ENVS 1010: Environmental Geology: Earth in Crisis
(Cross-listed with GEOL 1010).
Credits: 3. Contact Hours: Lecture 3.
Exploration of the interactions between humans and the geologic environment, and the consequences of those interactions, on local to global scales. Discussion of water, soil, mineral, and energy resources, pollution, climate change, and natural hazards such as earthquakes, volcanism, mass wasting, and flooding. (Typically Offered: Fall, Spring, Summer)

ENVS 1200: Introduction to Renewable Resources
(Cross-listed with AGRON 1200/ NREM 1200).
Credits: 3. Contact Hours: Lecture 3.
Overview of soil, water, plants, and animals as renewable natural resources in an ecosystem context. History and organization of resource management. Concepts of integrated resource management. (Typically Offered: Fall, Spring)

ENVS 1730: Environmental Biology
(Cross-listed with BIOL 1730).
Credits: 3. Contact Hours: Lecture 3.
An introduction to the structure and function of natural systems at scales from the individual to the biosphere and the complex interactions between humans and their environment. Discussions of human population growth, biodiversity, sustainability, resource use, and pollution. Does not satisfy biology major requirements. (Typically Offered: Fall, Spring)

ENVS 2010: Introduction to Environmental Issues
(Cross-listed with BIOL 2010/ ENSCI 2010).
Credits: 2. Contact Hours: Lecture 2.
Discussion of current and emerging environmental issues such as human population growth, energy use, loss of biodiversity, water resources, and climate change. (Typically Offered: Fall)

EVENT 1710: Introduction to Event Management
Credits: 3. Contact Hours: Lecture 3.
Overview of the event management industries. Techniques and procedures required for designing and implementing successful events. (Typically Offered: Fall, Spring, Summer)

FRNCH 1010: Elementary French I
Credits: 4. Contact Hours: Lecture 4.
Beginning level development of reading, writing, listening comprehension, and speaking in French, within the context of French culture. (Typically Offered: Fall, Summer)

FRNCH 2010: Intermediate French I
Credits: 4. Contact Hours: Lecture 4.
Prereq: (FRNCH 1020) OR (Score between 250 - 350 on French WLC Placement Exam)
Intermediate level development of reading, writing, listening comprehension, and speaking in French within the context of French culture. Meets International Perspectives Requirement. (Typically Offered: Fall)

FSHN 1010: Food and the Consumer
Credits: 3. Contact Hours: Lecture 3.
The food system from point of harvest to the consumption of the food by the consumer. Properties of food constituents. Protection of food against deterioration and microbial contamination. Introduction of foods into the marketplace. Processes for making various foods. Government regulations. Use of food additives. Current and controversial topics. High school biology and chemistry or 3 credits of college level biology and chemistry recommended. (Typically Offered: Fall, Spring, Summer)

FSHN 1670: Introductory Human Nutrition and Health
Credits: 3. Contact Hours: Lecture 3.
Understanding and implementing present day knowledge of nutrition. The role of nutrition in the health and well being of the individual and family. High school biology or 3 credits of biology recommended. (Typically Offered: Fall, Spring, Summer)

FSHN 2200: American Food and Culture
Credits: 3. Contact Hours: Lecture 3.
American cuisine reflects the history of the U.S. It is the unique blend of diverse groups of people from around the world, including indigenous Native American Indians, Africans, Asians, Europeans, Pacific Islanders, and South Americans. Explore factors that impact the American Cuisine of today including diverse ethnic and cultural group influences, historical events related to food diversity in the U.S., and agriculture and industrial impacts on food production. Practical knowledge and basic food preparation techniques related to the U.S. food system and trends. Class sessions will include lectures, class discussions and Tasting Immersion activities. (Typically Offered: Fall, Spring)

GEOL 1000: How the Earth Works
Credits: 3. Contact Hours: Lecture 3.
How does the earth work, what is it made of, and how does it change through time? Plate tectonics, Earth materials, landforms, structures, climate, and natural resources. Emphasis on the observations and hypotheses used to interpret earth system processes. Students may also enroll in GEOL 1000L. (Typically Offered: Fall, Spring, Summer)

GEOL 1000L: How the Earth Works: Laboratory
Credits: 1. Contact Hours: Laboratory 2.
Students will gain understanding of how Earth processes affect their lives and how they affect the Earth, and of the complex nature of the Earth and its processes. They will gain a deep knowledge of the methods used to understand the time scales and rates of Earth processes also through an applied research experience on groundwater and surface water. (Typically Offered: Fall, Spring)

GEOL 1010: Environmental Geology: Earth in Crisis
(Cross-listed with ENVS 1010).
Credits: 3. Contact Hours: Lecture 3.
Exploration of the interactions between humans and the geologic environment, and the consequences of those interactions, on local to global scales. Discussion of water, soil, mineral, and energy resources, pollution, climate change, and natural hazards such as earthquakes, volcanism, mass wasting, and flooding. (Typically Offered: Fall, Spring, Summer)

GEOL 1050: Gems and Gemstones
Credits: 1. Contact Hours: Lecture 1.
Offered in second half of the semester. Introduction to gems and gemstones, physical and optical properties of gems and gemstones, explanation of where gems come from and how they are found, how to distinguish between synthetic and naturally occurring gems, how the value of gems are determined, and the history of famous gems. (Typically Offered: Fall)

GEOL 1110: Geological Disasters
(Cross-listed with ENVS 1110).
Credits: 1. Contact Hours: Lecture 1.
Introduction to the catastrophic geologic processes with the potential to devastate human populations that continue to expand into regions at greatest risk from geologic hazards. Selected case studies and discussion of plate tectonics, climate, and earth processes explain the driving forces behind natural hazards such as earthquakes, tsunamis, volcanic eruptions, landslides, and floods. (Typically Offered: Fall, Spring, Summer)

GEOL 2010: Geology for Engineers and Environmental Scientists
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Introduction to Earth materials and processes with emphasis on engineering and environmental applications. (Typically Offered: Fall)

GER 1010: Elementary German I
Credits: 4. Contact Hours: Lecture 4.
Beginning level development of reading, writing, listening comprehension, and speaking in German within the context of German culture. For beginning-level learners who have little or no prior exposure to German. (Typically Offered: Fall, Summer)

GER 2010: Intermediate German I
Credits: 4. Contact Hours: Lecture 4.
Prereq: (GER 1020) OR (Score between 250 - 350 on German WLC Placement Exam)
Intermediate level development of reading, writing, listening comprehension, and speaking in German within the context of German culture. Intensive review of basic grammar covered in the first-year German class (or equivalent high school courses) while exploring cultural topics and themes. Meets International Perspectives Requirement. (Typically Offered: Fall)

GLOBE 2010: Introduction to Global Resource Systems
Credits: 3. Contact Hours: Lecture 3.
A systematic analysis of natural, physical, and socio-economic resources. Examine ways communities prioritize, save, use, and invest in community resources to address their needs and wants in a sustainable way, and the global implications of resource systems decisions. Assessed service-learning component. (Typically Offered: Fall, Spring)

HS 1050: First Aid and Emergency Care
Credits: 2.
Discussion and application of the basic techniques of utilizing bloodborne pathogen safety measures, administering first aid and cardiopulmonary resuscitation. ARC layperson certification available. (Typically Offered: Fall, Spring, Summer)

HS 1100: Personal and Consumer Health
Credits: 3. Contact Hours: Lecture 3.
Physical, mental, emotional and social aspects of health as a basis for understanding and promoting health, and preventing poor health conditions. Study of personal responsibility on the long-term benefits of maintaining a high level of wellness and health. Identification and mitigation of negative lifestyle habits. (Typically Offered: Fall, Spring)

HDFS 1020: Human Development
Credits: 3. Contact Hours: Lecture 3.
Overview of life-span developmental tasks (physical, cognitive, language, social, emotional) examined from various theoretical perspectives. Discussion of topics related to individual/family health and well-being and reciprocal relationships as affected by external factors. (Typically Offered: Fall, Spring, Summer)

HDFS 1830: Financial Literacy for Life
Credits: 1. Contact Hours: Lecture 1.
Introduction to basic concepts and budgeting practices for management of resources and prevention of financial problems commonly associated with college, including credit and student loans. Offered on a satisfactory-fail basis only. (Typically Offered: Fall, Spring, Summer)

HDFS 2230: Child Development and Health
Credits: 3. Contact Hours: Lecture 3.
Typical and atypical development of children prenatal through middle childhood. Examination of healthy development and potential impact of health issues in children. Discussion of influence of the family and society on development. Graduation Restriction: Either HDFS 2230 or HDFS 2240, but not both, may be applied toward graduation. (Typically Offered: Spring)

HDFS 2390: Consumer Issues
Credits: 3. Contact Hours: Lecture 3.
Introduction to factors affecting consumer decisions of individuals and families, including housing, healthcare, and personal finances. Emphasis on accessibility and affordability, community contexts for families; and consumer protection, legislation and regulation, and consumer fraud. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring)

HDFS 2400: Children's Literature
Credits: 3. Contact Hours: Lecture 3.
Evaluation of literature for children with emphasis on diversity and inclusion. Role of literature in the development of children across contexts. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring)

HDFS 2760: Human Sexuality
Credits: 3. Contact Hours: Lecture 3.
Behavioral, biological, and psychological aspects of human sexuality within the social context of family, culture, and society. Role of sexuality in human development. Critical analysis of media and research. Communication and decision-making skills relating to sexuality issues and relationships. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring, Summer)

HIST 2010: Introduction to Western Civilization I
Credits: 3. Contact Hours: Lecture 3.
Western civilization from ancient Mediterranean world to 1500. Social and cultural developments; economic and political ideas and institutions; problems of historical change and continuity. Meets International Perspectives Requirement. (Typically Offered: Fall)

HIST 2070: Chinese Civilization
Credits: 3. Contact Hours: Lecture 3.
Origins, development, decline and transformation of China from earliest times to 1911. Meets International Perspectives Requirement.

HIST 2110: Ancient Empires: From Sargon to Caesar
Credits: 3. Contact Hours: Lecture 2, Discussion 1.
Development of empires in the Near East and Mediterranean from the Akkadians to the fall of Rome. Discussion of the Hittites, Assyrians, Persians, Athenians, Macedonians (including the conquests of Alexander the Great), Carthaginians, and Romans; examination of imperialism as well as the social, cultural, and economic consequences of empire. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring)

HIST 2210: Survey of United States History I
Credits: 3. Contact Hours: Lecture 3.
Colonial foundations: revolution, confederation, and constitution; nationalism and democracy; sectional disunity, Civil War, and reunion. (Typically Offered: Fall)

HIST 2800: Introduction to History of Science I
Credits: 3. Contact Hours: Lecture 3.
Ideas of nature from ancient Greece to the seventeenth-century scientific revolution. Meets International Perspectives Requirement.

HORT 1210: Home Horticulture
Credits: 3. Contact Hours: Discussion 1, Lecture 2.
Growing plants in and around the home including requirements for growing indoor plants, plant propagation, landscape design, and maintaining trees, lawns, flower, fruit, and vegetable gardens. Recitation includes demonstrations and hands-on activities that illustrate principles of designing, growing and maintaining plants for both indoor and outdoor gardens. (Typically Offered: Fall, Spring)

HSPM 1010: Introduction to the Hospitality Industry
Credits: 3. Contact Hours: Lecture 3.
Introduction to the foodservice, lodging, and tourism components of the hospitality industry. Background information, current issues, and future challenges in various segments of the industry. (Typically Offered: Fall, Spring)

INTST 2350: Introduction to International Studies
Credits: 3. Contact Hours: Lecture 3.
Overview of international studies, emphasizing cultural, geographic, economic, and political characteristics of major world areas and nations. Meets International Perspectives Requirement. (Typically Offered: Fall, Summer)

ITAL 1070: Intensive Beginning Italian
Credits: 4. Contact Hours: Lecture 4.
A communicative approach to grammar and vocabulary within the context of Italian culture for students whose native language is not Italian. Taught in Italian. (Typically Offered: Fall, Spring)

JLMC 1010: Mass Media and Society
Credits: 3. Contact Hours: Lecture 3.
Communication theory models and their application to the mass media; the mass communication process; organization, characteristics and responsibilities of the mass media; media literacy process. (Typically Offered: Fall, Spring, Summer)

JLMC 1100: Orientation to Journalism and Communication
Credits: 1. Contact Hours: Lecture 1.
Orientation to curriculum requirements in the Greenlee School and introduction to careers related to Greenlee majors. Introduction to professional and preprofessional opportunities. Offered on a satisfactory/fail basis only. Offered on a satisfactory-fail basis only. (Typically Offered: Fall, Spring)

JLMC 2400: Principles of Journalism
Credits: 3. Contact Hours: Lecture 3.
Analysis of the journalism industry and specific audiences served by traditional media, including print and broadcast, as well as digital and emerging media. Introduction to core values of journalism in a democratic society and guiding principles that encompass a free press, media literacy, ethics, law, history, the economy and cultural and societal implications. (Typically Offered: Fall, Spring)

JLMC 2420: Visual Principles for Mass Communicators
Credits: 3. Contact Hours: Lecture 3.
Understanding and analysis of the visual message. Visual perception, visual communication theory, design syntax, design elements and how they are applied in mass communication. (Typically Offered: Fall, Spring)

KIN 2520: Introduction to the Discipline of Kinesiology
Credits: 1. Contact Hours: Lecture 1.
Relevant societal issues and research within the discipline of Kinesiology (the study of movement) are addressed. (Typically Offered: Fall, Spring)

KIN 2530: Orientation and Learning Community in Kinesiology and Health
Credits: 1. Contact Hours: Lecture 1.
Overview of ISU policies and procedures, academic advising operations, degree requirements, program of study planning, and campus resources. Students will have out-of-class activities and work with faculty, staff and mentors to explore careers in Kinesiology and complete assignments related to identification & development of their skills and interests. Department of Kinesiology students only. Offered on a satisfactory-fail basis only. (Typically Offered: Fall, Spring)

LLS 1120: Foundations of Learning and Productive Team Membership
Credits: 2. Contact Hours: Lecture 2.
Introduction to developing intentional learners and worthy team members. Learning as the foundation of human enterprise; intellectual curiosity; ethics as a personal responsibility; everyday leadership; effective team and community interactions including team learning and the effects on individuals; and growth through understanding self, demonstrating ownership of own learning, and internalizing commitment to helping others. Intentional mental processing as a means of enhancing learning. Interconnectedness of the individual, the community, and the world. (Typically Offered: Fall)

LAS 1010: Orientation
Credits: 1. Contact Hours: Lecture 1.
Prereq: Major in the College of Liberal Arts and Sciences (LAS)
For first-year LAS students. Introduction to university policies and deadlines, campus resources and services, academic success strategies, degree planning, and registration procedures. Assists with a successful academic transition to the university. Introduction to career resources. . Offered on a satisfactory-fail basis only. (Typically Offered: Fall)

LATIN 1010: Elementary Latin I
Credits: 3. Contact Hours: Lecture 3.
Grammar and vocabulary of classical Latin, within the context of Roman culture; reading knowledge through texts adapted from classical authors. (Typically Offered: Fall)

LDST 1220: Leading with Purpose
Credits: 1. Contact Hours: Lecture 1.
Designed for emerging student leaders. Basic leadership skills covering personal skills development, goal achievement, values-based behaviors and mission statement development. (Typically Offered: Fall, Spring)

LDST 2700: Campus Leadership Development
Credits: 3. Contact Hours: Lecture 3.
Introduce effective leadership practices for emerging leaders. Engage in experiential campus leadership opportunities. (Typically Offered: Fall, Spring, Summer)

LIB 1600: Introduction to College Level Research
Credits: 1. Contact Hours: Lecture 1.
Eight-week course required for undergraduate degree. Provides a foundation for college level research. Students will develop the critical thinking skills necessary to successfully navigate the research process: developing a research question, searching strategically, evaluating sources, and using information ethically. To be taken as early as possible in the student's undergraduate career. See course descriptions of ENGL 1500 and ENGL 2500 for requirements related to LIB 1600. (Typically Offered: Fall, Spring, Summer)

LING 1190: Introduction to World Languages
(Cross-listed with WLC 1190).
Credits: 3. Contact Hours: Lecture 3.
Study of language diversity and the personal, social and political effects of diversity. Language families, attitudes toward language and language use, language and culture, multilingualism, foreign language learning, written codes, official languages, and language policy. Meets International Perspectives Requirement.

LING 1200: Computers and Language
(Cross-listed with ENGL 1200).
Credits: 3. Contact Hours: Lecture 3.
Introduction to the use of linguistic knowledge in computer applications today and the basic computational techniques used in such applications. The development of these techniques throughout the history of computational linguistics. How the study of language has contributed to the advancement of technology and how certain computational problems have influenced the way linguists study language.

ME 1600: Mechanical Engineering Problem Solving with Computer Applications
Credits: 3.
Prereq: Mechanical Engineering majors only. Credit or enrollment in MATH 1650, MATH 1660, MATH 2650, or MATH 2670
Introduction to the field of Mechanical Engineering through problem-solving in a range of topics including statics, mechanics of materials and thermo-fluids. Techniques to professionally present and communicate solutions. Use of Python computer programming to aid problem solving, including curve fitting and graphing. Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, CE 1600, CHE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count toward graduation. (Typically Offered: Fall, Spring)

ME 1700: Engineering Graphics and Introductory Design
Credits: 3.
Prereq: Credit or concurrent enrollment in MATH 1430 or MATH 1450 or MATH 1650 (or satisfactory scores on mathematics placement assessments)

Integration of fundamental graphics, computer modeling, and engineering design. Applications of multiview drawings and dimensioning. Techniques for visualizing, analyzing, and communicating 3-D geometries. Application of the design process including written and oral reports. Freehand and computer methods. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/. (Typically Offered: Fall, Spring)

MS 1010: Introduction to Military Science
Credits: 1. Contact Hours: Lecture 1.
Prereq: Concurrent enrollment in MS 1010L required
Examines the role of a Cadet in the Army Reserve Officer Training Corps and a Lieutenant in the United States Army. The course explores a military culture whose ultimate success is determined by the character and proficiency of its' leaders. Instruction introduces students to the cultural heritage and history of the U.S. Army. Students will begin to understand the structure of the U.S. Army and how it functions as an organization and institution. The curriculum promotes the development of students' communication skills to enhance their ability to transmit ideas. The class examines how the Army's cultural values drive the development of leadership in the Officer Corps. Hands-on activities enable students to gain insight on the skills and abilities required of cadets and officers interacting with civilians and soldiers. (Typically Offered: Fall)

MS 1010L: Basic Leadership Laboratory I
Credits: 1. Contact Hours: Laboratory 2.
Prereq: Concurrent enrollment in MS 1010 required
Uses basic military training, missions and scenarios to provide a hands-on method of developing confidence and leadership skills. Students observe and participate in the rotation through various levels of leadership positions at the platoon and squad level within the Army command structure. This concept provides a constant learning environment as they learn to communicate effectively and work as a team while assigned to positions at various levels within the organization. Marching, rifle firing, and tactical patrolling; students gain confidence through rappelling and construction/use of rope bridges; and increase professional knowledge in areas such as first aid, water survival, personal physical fitness, and land navigation. Teaching locations include the ISU Armory, Camp Dodge (National Guard Facility), Pammel Woods (ISU campus), and ISU fitness centers. Full participation in all events will be determined based on students' physical and medical eligibility. (Typically Offered: Fall)

MS 1500: Army Physical Readiness
Credits: 1. Contact Hours: Laboratory 3.
Repeatable.
This lab is designed to use basic military skills and instruction to develop confidence, leadership, and physical fitness. The team approach is utilized in the instruction and application of Army physical fitness requirements. Students will learn various Army physical fitness techniques as well as how to conduct physical fitness sessions. Teaching locations include Lied Recreation Center, Beyer Hall, State Gym as well as around campus. Full participation in all events will be determined based on students physical and medical eligibility. (Typically Offered: Fall, Spring)

MATH 1010: Orientation in Mathematics
Credits: 1. Contact Hours: Lecture 1.
A required orientation for all first-year and transfer students in mathematics. Provides information about campus resources and opportunities available to students, assists with transition to the University, and academic planning. Offered on a satisfactory/fail basis only. Offered on a satisfactory-fail basis only. (Typically Offered: Fall)

MATH 1040: Introduction to Probability
Credits: 3. Contact Hours: Lecture 3.
Prereq: Satisfactory math placement test score (ALEKS 15+)
Permutations, combinations, probability, expected value, and applications. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. (Typically Offered: Fall, Spring, Summer)

MATH 1050: Introduction to Mathematical Ideas
Credits: 3. Contact Hours: Lecture 3.
Prereq: Satisfactory math placement test score (ALEKS 15+)
Introduction to the use of basic mathematics to solve real-world problems in the areas of voting issues, measuring power in situations where people have different numbers of votes, apportionment, fair division, and elementary game theory. No prior background in politics or history is necessary for this course. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. (Typically Offered: Fall, Spring, Summer)

MATH 1400: College Algebra
Credits: 3. Contact Hours: Lecture 2, Discussion 1.
Prereq: Satisfactory math placement test score (ALEKS, 39+) or (concurrent enrollment in MATH 1390 and ALEKS 15+)
Coordinate geometry, quadratic and polynomial equations, functions, graphing, rational functions, exponential and logarithmic functions, inverse functions, quadratic inequalities, systems of linear equations. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/Credits earned in MATH 1400 cannot be applied toward graduation by Math majors. (Typically Offered: Fall, Spring, Summer)

MATH 1430: Preparation for Calculus
Credits: 4. Contact Hours: Lecture 2, Discussion 2.
Prereq: Satisfactory performance on placement assessment or MATH 1400
Preparation for MATH 1600 or MATH 1650. Functions, graphing, basic trigonometry, logarithms, exponentials. Emphasis on co-variational reasoning. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Only one of MATH 1430 and MATH 1450 may count toward graduation. (Typically Offered: Fall, Spring)

MATH 1450: Applied Trigonometry
Credits: 3. Contact Hours: Lecture 2, Discussion 1.
Prereq: Satisfactory performance on placement assessment or MATH 1400
Mathematical ideas regarding the conception of space. General trigonometry, with an emphasis on the calculation of lengths, areas, and angles. The Law of Sines and the Law of Cosines. Polar, cylindrical, and spherical coordinate systems. Conic sections and quadric surfaces. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Only one of MATH 1430 and MATH 1450 may count toward graduation. (Typically Offered: Fall, Spring)

MATH 1500: Discrete Mathematics for Business and Social Sciences
Credits: 3. Contact Hours: Lecture 3.
Prereq: ALEKS 39+ OR (Concurrent enrollment in MATH 1490 AND ALEKS 15+)

Linear equations and inequalities, matrix algebra, linear programming, discrete probability. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. (Typically Offered: Fall, Spring, Summer)

MATH 1600: Survey of Calculus
Credits: 4. Contact Hours: Lecture 4.
Prereq: Satisfactory performance on placement assessment or minimum of C- in (MATH 1400 or MATH 1430)
Analytic geometry, derivatives and integrals of elementary functions, simple differential equations, and applications. Will not serve as a prerequisite for MATH 2650 or MATH 2660. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Only one of MATH 1510, MATH 1600, or the sequence MATH 1650-MATH 1660 may be counted towards graduation. (Typically Offered: Fall, Spring)

MATH 1650: Calculus I
Credits: 4. Contact Hours: Lecture 3, Discussion 1.
Prereq: Minimum C- in MATH 1430 or satisfactory score on placement exam
Differential calculus, applications of the derivative, introduction to integral calculus. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/.Graduation Restriction: Only one of MATH 1510, MATH 1600, or the sequence MATH 1650-MATH 1660 may be counted towards graduation. (Typically Offered: Fall, Spring, Summer)

MATH 1660: Calculus II
Credits: 4. Contact Hours: Lecture 3, Discussion 1.
Prereq: Minimum C- in MATH 1650 or satisfactory placement on ALEKS (80+) and Canvas Calculus II placement exam
Integral calculus, applications of the integral, parametric curves and polar coordinates, power series and Taylor series. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Only one of MATH 1510, MATH 1600, or the sequence MATH 1650-MATH 1660 may be counted towards graduation. (Typically Offered: Fall, Spring, Summer)

MATH 1950: Mathematics for Elementary Education I
Credits: 3.
Prereq: Satisfactory performance on placement assessment; Early or Elementary Education major
Whole number operations through analysis of properties, theoretical and hands-on models, mathematical analysis of elementary students' thinking; standard and non-standard algorithms; structure of the decimal system; linear measurement; two- and three-dimensional measurement, shapes and spatial sense; number theory; algebra as it relates to elementary curricula/teaching profession. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Students in the College of Liberal Arts and Sciences may not count MATH 1950 toward General Education Requirements. (Typically Offered: Fall, Spring)

MATH 2650: Calculus III
Credits: 4. Contact Hours: Lecture 3, Discussion 1.
Prereq: Minimum of C- in MATH 1660 or MATH 1660H
Geometry of space and vectors, multivariable differential calculus, multivariable integral calculus, vector calculus. (Typically Offered: Fall, Spring, Summer)

MATH 2670: Elementary Differential Equations and Laplace Transforms
Credits: 4. Contact Hours: Lecture 3, Discussion 1.
Prereq: Minimum of C- in MATH 1660 or MATH 1660H
Same as MATH 2660 but also including Laplace transforms and power series solutions to ordinary differential equations. Graduation Restriction: Credit for either MATH 2670 or the MATH 2660, 2680 pair of courses, but not both, may be applied toward graduation. Credit for only one of the following courses may be applied toward graduation: MATH 2670, MATH 2660, MATH 2690. (Typically Offered: Fall, Spring, Summer)

MICRO 1010: Microbial World
Credits: 3. Contact Hours: Lecture 3.
Introduction to the importance of viruses, bacteria, fungi, archaea and parasites both to humans and to the biosphere. Topics include past and present microbial impact on humans and society, ecology and diversity of microbes, biotechnology and microbial impact on the biosphere. Recommended: High School Biology. (Typically Offered: Fall)

MICRO 2010: Introduction to Microbiology
Credits: 2. Contact Hours: Lecture 2.
Prereq: One BIOL course except BIOL 1100, BIOL 1110, BIOL 1120, BIOL 1730, BIOL 2010, BIOL 3070
Selected topics in microbiology with emphasis on the relationship of microorganisms to human and animal health, agricultural technology, and the environment. With written petition to the chair of the supervisory committee, students who obtain a grade of B or better may substitute 2010 for MICRO 3020 in advanced courses. (Typically Offered: Fall, Spring)

MICRO 2010L: Introductory Microbiology Laboratory
Credits: 1. Contact Hours: Laboratory 3.
Prereq: Credit or concurrent enrollment in MICRO 2010 or MICRO 3020
Basic microbiology laboratory techniques for non-microbiology majors. Graduation Restriction: Credit for either MICRO 2010L or 3020L, but not both, may be applied toward graduation. (Typically Offered: Fall, Spring)

MTEOR 1070: Severe and Hazardous Weather
Credits: 1. Contact Hours: Lecture 1.
Understanding of atmospheric processes that play a role in creating severe and hazardous weather. Focus on thunderstorms, tornadoes, hurricanes, floods, blizzards, ice storms, and temperature extremes. Impacts on lives and property. (Typically Offered: Fall)

MTEOR 1400: Climate and Society
(Cross-listed with AGRON 1400/ ENVS 1400/ GEOL 1400/ CLSCI 1400).
Credits: 3. Contact Hours: Lecture 3.
The climate system of our planet. How nature and our actions alter the existing energy balance leading to climate change. Past climates on our planet. The influence of climate on society and resource availability during the Holocene (~ 11,000 years ago to present) with focus on changes post industrial revolution. Significant climate events that have altered our way of life in the past. Projected changes in future climate and potential impacts on society, environment and resources. Adaption to and mitigation of climate change. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring)

MTEOR 2060: Introduction to Weather and Climate
(Cross-listed with AGRON 2060).
Credits: 3. Contact Hours: Lecture 3.
Basic concepts in weather and climate, including atmospheric measurements, radiation, stability, precipitation, winds, fronts, forecasting, and severe weather. Applied topics include global warming, ozone depletion, world climates and weather safety. (Typically Offered: Fall, Spring)

MUSIC 1010: Fundamentals of Music
Credits: 2.
Notation, recognition, execution and analysis of scales, intervals, triads, and rhythm; key signatures; time signatures; transposition. Open to non-majors only. Ability to read elementary musical notation required. (Typically Offered: Fall, Spring)

MUSIC 1020: Introduction to Music Listening
Credits: 3. Contact Hours: Lecture 3.
Expansion of the music listening experiences for the general student through greater awareness of differences in techniques of listening, performance media, and materials of the art. The course focuses on the elements of music: rhythm, melody, harmony, form, and style, and how these elements are used in musics of different cultures and time periods. Ability to read or perform music not required. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring, Summer)

MUSIC 1110: Wind Ensemble
Credits: 1. Contact Hours: Laboratory 3.
Repeatable.
Emphasis on significant extended compositions for wind and percussion instruments. Performances include formal concerts on campus and the annual tour. Open to all students by audition. (Typically Offered: Fall, Spring)

MUSIC 1120: Concert Band
Credits: 1. Contact Hours: Laboratory 2.
Repeatable.
Repertoire includes the broad spectrum of band music. Two concerts are presented each semester. Open to students who have performed on a wind or percussion instrument in high school band or orchestra. (Typically Offered: Fall, Spring)

MUSIC 1130: Jazz Ensemble
Credits: 1. Contact Hours: Laboratory 2.
Repeatable.
Designed to explore various styles and trends in contemporary jazz. Open to all students by audition. (Typically Offered: Fall, Spring)

MUSIC 1140A: Marching and Pep Bands: Marching Band
Credits: 1. Contact Hours: Laboratory 5.
Repeatable.
Membership determined by audition and band application. Auditions held for woodwind, brass, percussion, flag, and twirler positions. Presentation of pre-game and half time shows at each home football game; additional performances are also scheduled on and off campus. Audition information is listed on the band website (www.cyclonemarchingband.iastate.edu). Students may not be concurrently enrolled in MUSIC 1140A and 1140C. (Typically Offered: Fall)

MUSIC 1150: Symphonic Band
Credits: 1. Contact Hours: Laboratory 3.
Repeatable.
Stresses high quality wind literature. Performances include formal concerts on campus. Open to all students by audition. (Typically Offered: Fall, Spring)

MUSIC 1410: Lyrica Ensemble
Credits: 1. Contact Hours: Laboratory 2.
Repeatable.
Large chorus; emphasis on wide variety of literature and singing sounds from around the world. Includes fundamental voice and choral skills. Campus concerts each semester. Open to all treble voice students by audition. (Typically Offered: Fall, Spring)

MUSIC 1510A: University Chorus: Cantamus Women's Choir
Credits: 1. Contact Hours: Laboratory 3.
Repeatable.
Large chorus; emphasis on adventurous, contemporary programming. Advanced skills required. Campus concerts each semester, some in conjunction with orchestra. Open to all treble voice students by audition. (Typically Offered: Fall, Spring)

MUSIC 1510B: University Chorus: Statesmen Men's Choir
Credits: 1. Contact Hours: Laboratory 3.
Repeatable.
Advanced skills required, high quality literature. Campus concerts each semester, some concerts in conjunction with orchestras. Men's and women's choirs separately and in combination. Open to all students by audition. (Typically Offered: Fall, Spring)

MUSIC 1610: Iowa State Singers
Credits: 1. Contact Hours: Laboratory 5.
Repeatable.
Concert choir specializing in performance of advanced music literature, Renaissance through contemporary. Campus concerts, annual spring tour. Open to all students by audition. (Typically Offered: Fall, Spring)

MUSIC 1810: Symphony Orchestra
Credits: 1. Contact Hours: Laboratory 4.
Repeatable.
Reading, preparation, and performance of standard repertoire. Five or six concerts annually plus occasional off-campus appearances. Open to all students by audition. (Typically Offered: Fall, Spring)

NS 1110: Introduction to Naval Science
Credits: 3. Contact Hours: Lecture 3, Laboratory 3.
Introduction to the organization, regulations, and capabilities of the US Navy, with emphasis on mission and principal warfare components. (Typically Offered: Fall)

NREM 1200: Introduction to Renewable Resources
(Cross-listed with AGRON 1200/ ENVS 1200).
Credits: 3. Contact Hours: Lecture 3.
Overview of soil, water, plants, and animals as renewable natural resources in an ecosystem context. History and organization of resource management. Concepts of integrated resource management. (Typically Offered: Fall, Spring)

PR 2200: Principles of Public Relations
Credits: 3. Contact Hours: Lecture 3.
Introduction to public relations in business, government and non-profit organizations; functions, processes, and management; ethics, public opinion and theory.

PHIL 2010: Introduction to Philosophy
Credits: 3. Contact Hours: Lecture 3.
It has been rumored that the unexamined life is not worth living. Philosophy is an attempt to begin examining life by considering such questions as: What makes us human? What is the world ultimately like? How should we relate to other people? Is there a god? How can we know anything about these questions? Understanding questions of this kind and proposed answers to them is what this course is all about. (Typically Offered: Fall, Spring, Summer)

PHIL 2060: Introduction to Logic and Scientific Reasoning
Credits: 3. Contact Hours: Lecture 3.
Basic principles of critical reasoning and argument evaluation. A consideration of basic forms of argumentation in science and everyday life. Application to contemporary issues and controversies. (Typically Offered: Fall)

PHIL 2070: Introduction to Symbolic Logic
(Cross-listed with LING 2070).
Credits: 3. Contact Hours: Lecture 3.
Introduction to fundamental logical concepts and logical symbolism. Development of natural deduction through first order predicate logic with identity. Applications to arguments in ordinary English and to philosophical issues. Linguistics majors should take LING/PHIL 2070 as early as possible. (Typically Offered: Fall, Spring)

PHIL 2300: Moral Theory and Practice
Credits: 3. Contact Hours: Lecture 3.
Investigation of moral issues in the context of major ethical theories of value and obligation; e.g., punishment, abortion, economic justice, job discrimination, world hunger, and sexual morality. Emphasis on critical reasoning and argument analysis. (Typically Offered: Fall, Spring, Summer)

PHIL 2350: Ethical Issues in a Diverse Society
Credits: 3. Contact Hours: Lecture 3.
This course will examine a range of arguments on diversity issues. Topics will include: the social status of women, the moral status of sexuality and homosexuality, the nature and role of racism in contemporary society, the relationship between biology, gender roles and social status, and various proposals for change from a variety of political perspectives. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring)

PHYS 1010: Physics for the Nonscientist
Credits: 3. Contact Hours: Lecture 3.
Survey of the principal areas of both classical and modern physics. Emphasis on the nature of the physical universe and the application of physical principles to life in the modern world. (Typically Offered: Fall, Spring, Summer)

PHYS 1150: Physics for the Life Sciences
Credits: 4. Contact Hours: Lecture 3, Discussion 1.
Emphasis on basic physics principles applied to biological problems. Topics include mechanics, fluids, thermodynamics, heat, light, sound, electricity and magnetism. A coordinated laboratory, PHYS 1150L laboratory is available. 1.5 yr. HS algebra, 1 yr. HS geometry, 1 semester HS trigonometry recommended. (Typically Offered: Fall, Spring)

PHYS 1310: General Physics I
Credits: 4. Contact Hours: Lecture 3, Discussion 1.
General background in physical concepts, principles, and methods for those who do not plan advanced study in physics or engineering. Mechanics, fluids, heat and thermodynamics, vibrations, waves, sound. 1.5 yr. HS algebra, 1 yr. HS geometry, 1 semester HS trigonometry recommended. (Typically Offered: Fall, Spring, Summer)

PHYS 1310L: General Physics I Laboratory
Credits: 1. Contact Hours: Laboratory 2.
Prereq: Credit or enrollment in PHYS 1310
Laboratory experiments in elementary kinematics, work and energy, conservation laws, rotational motion, waves and fluids. 1.5 yr. HS algebra, 1 yr. HS geometry, 1 semester HS trigonometry recommended. (Typically Offered: Fall, Spring, Summer)

PHYS 1320: General Physics II
Credits: 4. Contact Hours: Lecture 3, Discussion 1.
Prereq: PHYS 1310 or PHYS 2310
General background in physical concepts, principles, and methods for those who do not plan advanced study in physics or engineering. Electricity and magnetism, ray and wave optics, topics in modern physics. (Typically Offered: Fall, Spring, Summer)

PHYS 1320L: General Physics II Laboratory
Credits: 1. Contact Hours: Laboratory 2.
Prereq: Credit or enrollment in PHYS 1320
Laboratory experiments in Electricity and Magnetism, Wave and Optics. (Typically Offered: Fall, Spring, Summer)

PHYS 2310: Introduction to Classical Physics I
Credits: 4. Contact Hours: Discussion 1, Lecture 3.
Prereq: [MATH 1650 OR (MATH 1630X AND 1640X)] AND Credit or concurrent enrollment in MATH 1660
Tailored toward engineering majors (For a broader set of physics topics consider PHYS 2410). 3 hours of lecture each week plus 1 recitation each week. Review of basic vector manipulation, elementary mechanics including kinematics and dynamics of particles, work and energy, linear andangular momentum, conservation laws, rotational motion, oscillations, gravitation. . (Typically Offered: Fall, Spring, Summer)

PHYS 2310L: Introduction to Classical Physics I Laboratory
Credits: 1. Contact Hours: Laboratory 2.
Prereq: MATH 1650 AND (credit or enrollment in MATH 1660) AND (credit or concurrent enrollment in PHYS 2310 or PHYS 2410)
Laboratory experiments in elementary kinematics, work and energy, conservation laws, and rotational motion. Proficiency in algebra, trigonometry, vector manipulation required. (Typically Offered: Fall, Spring, Summer)

PHYS 2320: Introduction to Classical Physics II
Credits: 4. Contact Hours: Discussion 1, Lecture 3.
Prereq: MATH 1660; PHYS 2310 or PHYS 2410
3 hours of lecture each week plus 1 recitation each week. Electric forces and fields; Electrical currents; DC circuits; Magnetic forces and fields; LR, LC, LCR circuits; AC circuits. (Typically Offered: Fall, Spring, Summer)

PHYS 2320L: Introduction to Classical Physics II Laboratory
Credits: 1. Contact Hours: Laboratory 2.
Prereq: MATH 1660 AND (Credit or concurrent enrollment in PHYS 2320 or PHYS 2420)
Laboratory experiments in fluid dynamics, electric forces and fields, electrical currents, DC circuits, magnetic forces and fields, and wave optics. (Typically Offered: Fall, Spring, Summer)

PHYS 2410: Principles and Symmetries in Classical Physics I
Credits: 5. Contact Hours: Lecture 3, Discussion 1.5, Laboratory 1.
Prereq: MATH 1650; credit or concurrent enrollment in MATH 1660
Covers all of mechanics; kinematics and dynamics of particles, work and energy, linear and angular momentum, conservation laws, rotational motion, oscillations, gravitation, and extremum principles. Topics in kinetic theory, thermodynamics, waves and sound. Proficiency in algebra, trigonometry, vector manipulation required. (Typically Offered: Fall)

POLS 1110: Introduction to American Government
Credits: 3. Contact Hours: Lecture 3.
Fundamentals of American democracy; constitutionalism; federalism; rights and duties of citizens; executive, legislative, and judicial branches of government; elections, public opinion, interest groups, and political parties. (Typically Offered: Fall, Spring)

POLS 1210: Introduction to International Politics
Credits: 3. Contact Hours: Lecture 3.
Dynamics of interstate relations pertaining to nationalism, the nation state; peace and war; foreign policy making; the national interest; military capability and strategy; case studies of transnational issues, such as population, food, energy, and terrorism. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring)

POLS 1250: Democracy and Dictatorship: Introduction to Comparative Politics
Credits: 3. Contact Hours: Lecture 3.
Interactions between governments and citizens in countries outside the US. Causes of democracy, dictatorship, and economic and social development. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring)

PSYCH 1010: Introduction to Psychology
Credits: 3. Contact Hours: Lecture 2, Discussion 1.
Fundamental psychological concepts derived from the application of the scientific method to the study of behavior and mental processes. Applications of psychology. (Typically Offered: Fall, Spring, Summer)

PSYCH 1020: Laboratory in Introductory Psychology
Credits: 1. Contact Hours: Laboratory 2.
Prereq: Credit or concurrent enrollment in PSYCH 1010
Laboratory to accompany 1010. (Typically Offered: Fall, Spring)

PSYCH 1110: Orientation to Psychology
Credits: 1. Contact Hours: Lecture 1.
Program requirements and degree/career options. Required of psychology majors. (Typically Offered: Fall, Spring)

PSYCH 1310: Academic Learning Skills
Credits: 1. Contact Hours: Lecture 1.
Evidence-based approach to learning and applying academic skills such as time management, note-taking, reading, test preparation, goal setting and motivation, and well-being. Hybrid course structured in a team-based learning format. (Typically Offered: Fall, Spring)

PSYCH 2300: Developmental Psychology
Credits: 3. Contact Hours: Lecture 3.
Life-span development of physical traits, cognition, intelligence, language, social and emotional behavior, personality, and adjustment. (Typically Offered: Fall, Spring, Summer)

PSYCH 2500: Psychology of the Workplace
Credits: 3. Contact Hours: Lecture 3.
Survey of theories and research methods of psychology applied to the workplace. Consideration of employee selection, training, performance evaluation, leadership, work groups, employee motivation, job attitudes and behaviors, organizational culture, organizational development, human factors, and job design from the scientist-practitioner approach.

PSYCH 2800: Social Psychology
Credits: 3. Contact Hours: Lecture 3.
Individual human behavior in social contexts. Emphasis on social judgments and decisions, attitudes, perceptions of others, social influence, aggression, stereotypes, and helping. (Typically Offered: Fall, Spring, Summer)

RELIG 2050: World Religions
(Cross-listed with WLC 2050).
Credits: 3. Contact Hours: Lecture 3.
An introduction to religious studies - the academic study of religion. Religions from around the world will be discussed, including their myths, rituals, beliefs, values, and social forms. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring, Summer)

RELIG 2100: Religion in America
Credits: 3. Contact Hours: Lecture 3.
Introductory study of the major beliefs, practices, and institutions of American Judaism, Catholicism, Protestantism, and Islam with emphasis on the diversity of religion in America, and attention to issues of gender, race, and class. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring, Summer)

RELIG 3320: Catholicism
Credits: 3. Contact Hours: Lecture 3.
Examination of the history and theology of Catholicism from an academic perspective. Attention to Catholic doctrine, diverse experiences of lay Catholics, and Catholicism's influence on politics, culture, and art. (Typically Offered: Fall)

RUS 1010: Introduction to Russian Language and Culture I
Credits: 4. Contact Hours: Lecture 4.
Introduction to the Russian language (focusing on the development of speaking, listening, reading and writing skills) and Russian culture. (Typically Offered: Fall)

RUS 2010: Intermediate Russian I
Credits: 4. Contact Hours: Lecture 4.
Prereq: (RUS 1020) OR (Score between 300 - 400 on Russian WLC Placement Exam)
Thorough review of grammar and growth of vocabulary. Selected readings. Continued use of the four basic skills. Meets International Perspectives Requirement. (Typically Offered: Fall)

SE 1010: Software Engineering Orientation
Credits: Required. Contact Hours: Lecture 1.
Introduction to the procedures, policies, and resources of Iowa State University and the Software Engineering Program. Offered on a satisfactory-fail basis only.

SE 1850: Problem Solving in Software Engineering
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Prereq: Credit or concurrent enrollment in MATH 1430 (or satisfactory scores on mathematics placement examinations)
Introduction to software engineering and computer programming. Systematic thinking process for problem solving in the context of software engineering. Group problem solving. Solving software engineering problems and presenting solutions through computer programs, written documents and oral presentations. Introduction to principles of programming, software design, and extensive practice in design, writing, running, debugging, and reasoning about programs. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/. Graduation Restriction: Only one of ENGR 1600, ABE 1600, AERE 1600, BME 1600, CE 1600, CHE 1600, CPRE 1850, EE 1850, IE 1480, ME 1600, and SE 1850 may count towards graduation.

SOC 1150: Orientation to Sociology
Credits: 1. Contact Hours: Lecture 1.
Orientation to sociology. A familiarization with University and LAS College requirements and procedures. Occupational tracks and career options open to sociology; introduction to career planning. Recommended during first semester of freshman year, or as soon as possible after transfer into the department. Offered on a satisfactory-fail basis only. (Typically Offered: Fall, Spring)

SOC 1340: Introduction to Sociology
Credits: 3. Contact Hours: Lecture 3.
Overview of sociological thought and research on the sociological imagination, socialization, social control, stratification, institutions, and the forces of social change. Individual lives are placed in social and historical context to better understand our place in the world and our time in history. (Typically Offered: Fall, Spring, Summer)

SOC 2190: Families and Intimate Relationships
Credits: 3. Contact Hours: Lecture 3.
Exploration of families and intimate relationships using a sociological perspective, with the goal to help students make informed and intentional choices in their relationships across the life course. Topics covered include family definitions and theories, sexuality, singlehood, dating, cohabitation, marriage, parenting, divorce, stepfamilies, and aging. Relationship quality, communication, conflict, and work-life balance will also be examined, as well as differences in family dynamics by gender, race and ethnicity, and class. (Typically Offered: Fall, Spring)

SOC 2350: Social Problems and American Values
Credits: 3. Contact Hours: Lecture 3.
Explores relationship between contemporary social problems and American values. Explores how contradictory values impede political consensus while complicating our ability to define and solve social problems. Discussion may focus upon: working conditions, income and wealth, poverty and welfare, impacts of technology on society, criminal justice and victimization, reproductive rights and gender, child rearing and education, immigration and race, guns and violence, and environment and climate change. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring)

SPCM 1100: Listening
Credits: 3. Contact Hours: Lecture 3.
Theory, principles, and competency development in comprehensive, therapeutic, critical, consumer, and appreciative listening. The impact of listening in relationships and partnerships. (Typically Offered: Fall, Spring)

SPCM 2120: Fundamentals of Public Speaking
Credits: 3. Contact Hours: Lecture 3.
Prereq: For students in EPT Advisory Program - [(Result of "Test attempted and course is Not Required" or "Test attempted and course was Waived" on EPT for ENGL 0990S OR Credit in ENGL 0990S)]
Theory and practice of basic speech communication principles applied to public speaking. Practice in the preparation and delivery of extemporaneous speeches. (Typically Offered: Fall, Spring, Summer)

SPCM 2160: America Speaks: Great Speakers and Speeches in US History
Credits: 3. Contact Hours: Lecture 3.
Survey of great speeches examined within their political and cultural contexts. Analysis of the rhetorical strategies of diverse speakers with an emphasis on texts from social movements in the United States. Meets U.S. Cultures and Communities Requirement.

SPCM 2750: Analysis of Popular Culture Texts
(Cross-listed with ENGL 2750).
Credits: 3. Contact Hours: Lecture 3.
Prereq: Credit or concurrent enrollment in ENGL 2500
Analysis of how information and entertainment forms persuade and manipulate audiences. Study of several forms that may include newspapers, speeches, television, film, advertising, fiction, and magazines. Special attention to verbal and visual devices. (Typically Offered: Fall, Spring)

SPED 2500: Education of the Exceptional Learner
Credits: 3. Contact Hours: Lecture 3.
An overview of students with diverse learning needs, including students with disabilities, English Learners, students who are at risk, and gifted learners. Emphasis is on early identification; educational programming and implications; and legal foundations. Includes Individual Education Programs, Least Restrictive Environment, Functional Behavioral Assessment, and Behavior Intervention Plans. (Typically Offered: Fall, Spring)

SPAN 1010: Elementary Spanish I
Credits: 4. Contact Hours: Lecture 4.
A communicative approach to grammar and vocabulary within the context of Hispanic culture. For students whose native language is not Spanish. Students Who Have Completed One Or More Years Of High School Spanish May Not Enroll In 101. Testout Not Available If Also Registered. (Typically Offered: Fall, Summer)

SPAN 1020: Elementary Spanish II
Credits: 4. Contact Hours: Lecture 4.
Prereq: (SPAN 1010) OR (SPAN 1970) OR (Score between 270 - 350 on Spanish WLC Placement Exam)
Continuation of Spanish 1010. A communicative approach to grammar and vocabulary within the context of Hispanic culture. For students whose native language is not Spanish. Meets International Perspectives Requirement. (Typically Offered: Spring, Summer)

SPAN 2010: Intermediate Spanish I
Credits: 4. Contact Hours: Lecture 4.
Prereq: (SPAN 1020) OR (Score between 350 - 430 on Spanish WLC Placement Exam)
Intensive review of basic grammar and conversation. For students whose native language is not Spanish. Practice in oral and written communication. Development of fluency with idiomatic expressions. Selected readings on culture and literature. Meets International Perspectives Requirement. (Typically Offered: Fall)

SPAN 2970: Intensive Intermediate Spanish
Credits: 4. Contact Hours: Lecture 4.
Prereq: (SPAN 2010) OR (Score between 430 - 500 on Spanish WLC Placement Exam)
Bridge course between 2000- and 3000-level Spanish courses that focuses on application of advanced grammatical concepts within the context of Hispanic culture. Accelerated review of SPAN 2010 and SPAN 2020 designed for students who want to continue at the 3000 level. Taught in Spanish for students whose native language is not Spanish. Meets International Perspectives Requirement. (Typically Offered: Fall, Spring)

STAT 1010: Principles of Statistics
Credits: 4. Contact Hours: Lecture 3, Laboratory 2.
Statistical concepts in modern society; descriptive statistics and graphical displays of data; the normal distribution; data collection (sampling and designing experiments); elementary probability; elements of statistical inference; confidence intervals and hypothesis testing; linear regression and correlation; contingency tables. 1 1/2 years of high school algebra required. Graduation Restriction: Credit for only one of the following courses may be applied toward graduation: STAT 1010, STAT 1040, STAT 2010, or STAT 2260. (Typically Offered: Fall, Spring, Summer)

STAT 1040: Introduction to Statistics
Credits: 3. Contact Hours: Lecture 2, Laboratory 2.
Statistical concepts and their use in science; collecting, organizing and drawing conclusions from data; elementary probability; binomial and normal distributions; regression; confidence intervals and hypothesis testing. For students in the agricultural and biological sciences. 1 1/2 years of high school algebra required. Graduation Restriction: Credit for only one of the following courses may be applied toward graduation: STAT 1010, STAT 1040, STAT 2010, or STAT 2260. (Typically Offered: Fall, Spring, Summer)

THTRE 1060: Introduction to the Performing Arts
Credits: 3. Contact Hours: Lecture 3.
An audience oriented, broad-based, survey of the performing arts which emphasizes theatre and includes segments on television, radio and podcasts, film, dance, music, and video games. (Typically Offered: Fall, Spring)

THTRE 1100: Theatre and Society
Credits: 3. Contact Hours: Lecture 3.
An introduction to Theatre focusing on its relationship with society throughout history. (Typically Offered: Fall, Spring)

THTRE 2510: Acting Foundations
Credits: 3. Contact Hours: Lecture 3.
Theory and practice in fundamentals of acting. (Typically Offered: Fall, Spring)

TSM 1150: Solving Technology Problems
Credits: 3.
Prereq: Credit or enrollment for credit in MATH 1400 or higher
Solving technology problems using modern hardware and software tools for data-driven solutions. Problem solving cycle, unit conversion, unit factor method, SI and engineering units, significant figures, data collecting and cleaning, error analysis, data visualization, curve fitting, and computer coding fundamentals (data types, flow control, I/O handling, visualization, debugging). Strong emphasis on critical thinking, systematic problem solving, and effective communication. (Typically Offered: Fall, Spring)

TSM 1160: Introduction to Design in Technology
Credits: 3.
Use of parametric solid modeling software to create three dimensional solid models and document parts and assemblies. Includes national and international standards for documentation, design projects, and teamwork. Rapid prototyping design creation, 3D printing, assemblies, rendering, and detailing technical drawings. (Typically Offered: Fall, Spring)

USLS 2110: Introduction to U.S. Latino/a Studies
Credits: 3. Contact Hours: Lecture 3.
History and current lives of the Latino/a peoples in the United States, including Mexican, Cuban, Puerto Rican, Dominican, and South and Central Americans, as well as information specific to Iowa Latino/as, will be covered. Through readings, class discussions, writing assignments, and guest speakers, students will acquire accurate information and a solid understanding of the US Latino/a population and cultural perspectives. Elements of Latino/a culture to be covered include historical, sociological, educational, psychological, economic, and political facets. Meets U.S. Cultures and Communities Requirement. (Typically Offered: Fall, Spring)

WGS 1600: Gender Justice
Credits: 1. Contact Hours: Lecture 0.5, Discussion 0.5.
Half semester course. Examines the socialization process in the United States and how our perspectives are formed. An introduction to patriarchy, sexism, and ally development are explored. Skills to enhance communication and understanding among women and men will be developed. Offered on a satisfactory-fail basis only. (Typically Offered: Fall, Spring)

WGS 2010: Introduction to Women's and Gender Studies
Credits: 3. Contact Hours: Lecture 3.
Introduction to the interdisciplinary field of Women's and Gender Studies. Contemporary status of women in the U.S. and worldwide from social, economic, historical, political, philosophical and literary perspectives. Analysis of intersection of gender, race, class, and sexuality. Subject matter includes work, health, sexuality, and violence. Foundation for the other courses in the program. Meets U.S. Cultures and Communities Requirement.

WFS 2780: Introduction to Global Film
Credits: 3. Contact Hours: Lecture 3.
Introduction to the cinema of non-English speaking regions and cultures of the world through representative subtitled films, lectures, and readings. Topics vary according to faculty interest. Emphasis on selected national cinemas and film as a mode of cultural expression as well as on diverse cultural contexts of cinema. Meets International Perspectives Requirement. (Typically Offered: Fall)

Credits

The academic value of each course is stated in semester credits. Each credit is normally earned by attending one (50-minute) hour of lecture or recitation per week for the entire semester, or by attending a laboratory or studio period of two or three hours per week. As a guideline, undergraduate students typically will be expected to spend two hours in preparation outside of class for each lecture or recitation hour; additional outside work may be required for laboratory or studio classes.

Contact Hours

Each course states the number of semester credits assigned to the course, preceded in parentheses by the number of hours in class (contact hours) expected of the student. The first of the two contact-hour numbers indicates the number of lecture or recitation class hours per week for the semester. The second is the number of laboratory or studio hours required per week. Laboratory and studio hours may include some time devoted to lectures and recitations. For example, COMS 2270 Introduction to Object-oriented Programming is listed as (3-2) Cr. 4. In that case, the course is 4 semester credits, 3 hours of lecture and two hours of laboratory each week.

Semester Offering

The expected term a course is to be offered is indicated by the abbreviations F (Fall) S (Spring) SS (Summer). The notations are for planning purposes and *do not* guarantee a course will be offered in a particular term. Always check the Schedule of Classes (http://classes.iastate.edu) for availability and specific offering times.