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/).

A B E 160: Systematic Problem Solving and Computer Programming
(2-2) Cr. 3. F.S.
Prereq: Credit or concurrent enrollment in (MATH 143 or MATH 165)
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. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count towards graduation.

A B E 170: Engineering Graphics and Introductory Design
(2-2) Cr. 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.

A M D 131: Fashion Products and Markets
(3-0) Cr. 3. F.
Fashion industry from concept to consumer. Focus on fashion-driven consumer goods. Development and prototyping of fashion products for a target market.

A M D 165: Dress, Appearance, and Diversity in U.S. Society
(3-0) Cr. 3. F.S.
Analyze foundational concepts and theories related to dress, identity, fashion, and culture and how they intersect with sex, gender, sexuality, beauty, attractiveness, disability, religion, race, and ethnicity with heightened attention to marginalized communities in the United States. Analyze the experiences and the role of fashion, clothing, dress, and/or accessories for identity development. Critique the social justice issues within the fashion system and identify the driving forces of transformative social justice change in the fashion system. Deconstruct one's personal values and positionalities in relation to fashion, clothing, dress, and/or accessories.
Meets U.S. Diversity Requirement

ADVRT 230: Advertising Principles
(3-0) Cr. 3.
Historical, social, economic and legal aspects of advertising. Evaluations of advertising research, media, strategy and appeals. Study of the creation of advertising.

AER E 160: Aerospace Engineering Problems With Computer Applications Laboratory
(2-2) Cr. 3. F.S.
Prereq: (MATH 143 or satisfactory scores on mathematics placement examinations); credit or concurrent enrollment in MATH 165
Solving aerospace engineering problems and presenting solutions through technical reports. Significant figures and estimation. SI units. Graphing and curve fitting. Introduction to aerospace engineering and engineering design. Spreadsheet programs. History of aerospace. Systems thinking. Team projects. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count towards graduation.

AF AM 201: Introduction to African American Studies
(3-0) Cr. 3. F.S.
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. Diversity Requirement

AFAS 141: Foundations of the United States Air Force
(1-0) Cr. 1. F.
No-commitment exploratory course introducing the United States Air Force and the Air Force Reserve Officer Training Corps program. Topics include Air Force heritage and culture, professional military officership values and expectations, and future career opportunities with an emphasis on cultivating leadership and communication skills.

AGRON 120: Introduction to Renewable Resources
(Cross-listed with ENV S, NREM). (3-0) Cr. 3. F.S.
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.

AGRON 180: Global Agriculture in a Changing World
(3-0) Cr. 3. F.
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.

AGRON 206: Introduction to Weather and Climate
(Cross-listed with MTEOR). (3-0) Cr. 3. F.S.
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.

AM IN 201: Native People in American Culture
(3-0) Cr. 3. F.S.SS.
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.

AM IN 210: Introduction to American Indian Studies
(3-0) Cr. 3. F.S.SS.
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. Diversity Requirement

AN S 101: Working with Animals
(1-2) Cr. 2. F.S.SS.
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.

AN S 114: Survey of the Animal Industry
(2-0) Cr. 2. F.S.
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.

ANTHR 201: Introduction to Cultural Anthropology
(3-0) Cr. 3. F.S.SS.
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.

ANTHR 202: Human Origins
(3-0) Cr. 3. F.S.
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.

ANTHR 230: Globalization and the Human Condition
(3-0) Cr. 3. F.S.
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.

ARCH 221: Histories and Theories of Architecture to 1750
(3-0) Cr. 3. F.
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.
Meets International Perspectives Requirement.

ART H 280: History of Art I
(3-0) Cr. 3. F.
Development of the visual arts including painting, sculpture, architecture, and crafts, from the prehistoric through Gothic periods.
Meets International Perspectives Requirement.

ART H 292: Introduction to Visual Culture Studies
(3-0) Cr. 3.
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 103: Evening Star
Cr. 1. F.S.SS.
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. Students who take Astro 120 may count credit in only one of Astro 102 or 103 toward graduation.

ASTRO 120: The Sky and the Solar System

(3-0) Cr. 3. F.S.SS.

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. Students who take Astro 120 may count credit in only one of Astro 102 or 103 toward graduation.

ASTRO 150: Stars, Galaxies, and Cosmology

(3-0) Cr. 3. F.S.

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.

BBMB 101: Introduction to Biochemistry

(1-0) Cr. 1. F.

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. For students majoring in Biochemistry or Biophysics or considering one of these majors.

BIOL 101: Introductory Biology

(3-0) Cr. 3. F.S.SS.

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. Does not satisfy biology major requirements.

BIOL 155: Human Biology

(3-0) Cr. 3. F.S.

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.

BIOL 173: Environmental Biology

(Cross-listed with ENV S). (3-0) Cr. 3. F.S.

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.

BIOL 211: Principles of Biology I

(3-0) Cr. 3. F.S.

Prereq: High school biology

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.

BIOL 211L: Principles of Biology Laboratory I

(0-3) Cr. 1. F.S.

Prereq: Credit or concurrent enrollment in BIOL 211

Laboratory to accompany 211.

BIOL 212: Principles of Biology II

(3-0) Cr. 3. F.S.

Prereq: High School Biology; High School Chemistry or credit or enrollment in CHEM 163 o CHEM 177

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 163 or CHEM 177 recommended.

BIOL 212L: Principles of Biology Laboratory II

(0-3) Cr. 1. F.S.

Prereq: Credit or concurrent enrollment in BIOL 212

Laboratory to accompany 212.

BIOL 255: Fundamentals of Human Anatomy

(3-0) Cr. 3. F.

Prereq: High School Biology and Chemistry or BIOL 101

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 351 for their anatomy background. Does not satisfy biology major requirements. HS courses in biology and chemistry necessary. Credit or enrollment in BIOL 101 recommended.

BIOL 255L: Fundamentals of Human Anatomy Laboratory
(0-3) Cr. 1. F.
Prereq: Credit or concurrent enrollment in BIOL 255
Investigation of human anatomy using models and dissections of preserved organs and model mammals. Pre-Medical students should consider 351 for their anatomy background. Does not satisfy biology major requirements.

BUSAD 102: Business Learning Team Orientation
(1-0) Cr. 1. F.S.
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. Only one of BusAd 102 or BusAd 103 may be counted towards graduation.

BUSAD 103: Orientation
(1-0) Cr. 1. F.S.
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. Only one of BUSAD 102 or BUSAD 103 may be counted toward graduation.

C E 160: Engineering Problems with Computational Laboratory
(2-2) Cr. 3. F.S.
Prereq: Credit or concurrent enrollment in MATH 165
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. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count towards graduation.

C E 170: Graphics for Civil Engineering
(0-4) Cr. 2. F.S.
Prereq: Credit or concurrent enrollment in MATH 143 or MATH 145 (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. Freehand and computer methods. Satisfactory placement scores can be found at: https://math.iastate.edu/academics/undergraduate/aleks/placement/.

C R P 201: The North American Metropolis
(3-0) Cr. 3. F.S.
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.

C R P 251: Fundamentals of Geographic Information Systems
Cr. 3. F.
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.

CH E 160: Chemical Engineering Problems with Computer Applications Laboratory
(2-2) Cr. 3. F.S.
Prereq: (MATH 143 or satisfactory scores on mathematics placement examinations); credit or concurrent enrollment in MATH 165
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/. Only one of ENGR 160, A B E 160, AER E 160, CH E 160, C E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count towards graduation.

CHEM 050: Preparation for College Chemistry
(3-0) Cr. 0. F.S.
An in-depth active learning experience designed to impart the fundamental concepts and principles of chemistry, with an emphasis on mathematics skills and logical thinking. For students intending to enroll in general chemistry and who have not taken high school chemistry or who have not had a high school college preparatory chemistry course who need a review of chemical problem solving and chemical concepts. 1 year high school algebra recommended. Credit for Chem 50 does not count toward graduation.

CHEM 160: Chemistry in Modern Society
(3-0) Cr. 3. F.S.
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.

CHEM 163: College Chemistry
(4-0) Cr. 4. F.S.SS.
Prereq: Credit or concurrent enrollment in CHEM 163L
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 50 or 1 year of high school chemistry necessary. Only one of Chem 163, 167, 177, or 201 may count toward graduation.

CHEM 163L: Laboratory in College Chemistry
(0-3) Cr. 1. F.S.SS.
Prereq: Credit or concurrent enrollment in CHEM 163
Laboratory to accompany CHEM 163. Must be taken with CHEM 163. Only one of Chem 163L, CHEM 167L, and CHEM 177L may count toward graduation.

CHEM 167: General Chemistry for Engineering Students
(4-0) Cr. 4. F.S.
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 140 or 2 years of high school algebra and 1 year of high school geometry and CHEM 50 or 1 year of high school chemistry necessary. Only one of Chem 163, 167, 177, or 201 may count toward graduation.

CHEM 177: General Chemistry I
(4-0) Cr. 4. F.S.SS.
Prereq: Credit or concurrent enrollment in CHEM 177L
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 163. Recommended for physical and biological science majors, chemical engineering majors, and all others intending to take 300-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 201. MATH 140 or 2 years of high school algebra and 1 year of high school geometry and CHEM 50 or 1 year of high school chemistry necessary. Only one of Chem 163, 167, 177, or 201 may count toward graduation.

CHEM 177L: Laboratory in General Chemistry I
(0-3) Cr. 1. F.S.SS.
Prereq: Credit or concurrent enrollment in CHEM 177
Laboratory to accompany 177. 177L must be taken with 177. Only one of Chem 163L, 167L, and 177L may count toward graduation.

CHEM 177N: Laboratory in General Chemistry I
(0-3) Cr. 1. F.
Prereq: Credit or concurrent enrollment in CHEM 177
Laboratory to accompany CHEM 177. CHEM 177N must be taken with CHEM 177. For Chemistry and Biochemistry majors. Laboratory to accompany CHEM 177. CHEM 177N must be taken with CHEM 177. Only one of CHEM 163L, CHEM 167L, and CHEM 177N may count toward graduation.

CHEM 178: General Chemistry II
(3-0) Cr. 3. F.S.SS.
Prereq: CHEM 163 or CHEM 167 or (CHEM 177; CHEM 177L)
Continuation of 177. Recommended for physical or biological science majors, chemical engineering majors, and all others intending to take 300-level chemistry courses.

CHEM 178L: Laboratory in College Chemistry II
(0-3) Cr. 1. F.S.SS.
Prereq: CHEM 177L; credit or concurrent enrollment in CHEM 178
Laboratory to accompany 178. 178L is not a necessary co-requisite with 178.

CHEM 201: Advanced General Chemistry
(5-0) Cr. 5. F.
Prereq: Credit or concurrent enrollment in MATH 165 or MATH 166 or MATH 265; concurrent enrollment in CHEM 201L
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. Only one of CHEM 163, 167, 177, or 201 may count toward graduation.

CHIN 101: Elementary Mandarin Chinese I
(4-0) Cr. 4. F.
Introduction to spoken and written colloquial Mandarin through pinyin and simplified characters. For students whose native language is not Chinese.

CHIN 201: Intermediate Mandarin Chinese I
(4-0) Cr. 4. F.
Prereq: CHIN 102
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.

C J 240: Introduction to the U.S. Criminal Justice System
(3-0) Cr. 3. F.
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.

CL ST 273: Greek and Roman Mythology
(3-0) Cr. 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.

COM S 101: Orientation
Cr. R. F.S.
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.

COM S 103: Computer Literacy and Applications
Cr. 4. F.S.SS.
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.

COM S 104: Brief Introduction to Computer Programming for Non-Majors
(1.5-1) Cr. 2. F.S.
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.

COM S 107: Windows Application Programming
(3-0) Cr. 3. F.S.
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.

COM S 113: Introduction to Spreadsheets and Databases
(2-2) Cr. 3. F.S.SS.
Using Microsoft Excel spreadsheets and Microsoft Access databases to input, store, process, manipulate, query, and analyze data for business and industrial applications. Credit in Com S 113 may not be applied toward graduation in the S E and CPR E majors.

COM S 207: Fundamentals of Computer Programming
(3-1) Cr. 3. F.S.SS.
Prereq: MATH 150 or placement into MATH 140 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. Credit may not be applied toward graduation for both COM S 207 and COM S 227.

COM S 227: Object-oriented Programming
(3-2) Cr. 4. F.S.SS.
Prereq: Credit or concurrent enrollment in MATH 143 or higher; (COM S 127 or CPR E 185 or S E 185 or E E 285)
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. Credit may not be applied toward graduation for both Com S 207 and 227.

COM S 228: Introduction to Data Structures
(3-1) Cr. 3. F.S.SS.
Prereq: Minimum of C- in COM S 227; credit or concurrent enrollment in MATH 165
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.

COMST 101: Introduction to Communication Studies
(3-0) Cr. 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 211: Interpersonal Communication
(3-0) Cr. 3.
Application of major principles related to interpersonal communication theories, concepts, and research. Emphasis on using interpersonal communication skills effectively.

CPR E 131: Introduction to Computer Security Literacy
(Cross-listed with CYBSC). (1-0) Cr. 1.
Basic concepts of practical computer and Internet security: passwords, firewalls, antivirus software, malware, social networking, surfing the Internet, phishing, and wireless networks. This class is intended for students with little or no background in information technology or security. Basic knowledge of word processing required. Offered on a satisfactory-fail basis only.

CPR E 185: Introduction to Computer Engineering and Problem Solving I
(2-2) Cr. 3.
Prereq: (MATH 143 or satisfactory scores on mathematics placement examinations); credit or concurrent enrollment in MATH 165
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/. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count towards graduation.

DANCE 270: Dance Appreciation
(3-0) Cr. 3. F.S.
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.

DES 230: Design Thinking
(3-0) Cr. 3.
Introduction to design thinking processes, toolkits, and mindsets, and its interaction with art, design, and technology. Emphasis on interdisciplinary practices.

DS 201: Introduction to Data Science
Cr. 3. F.S.Alt. SS., offered irregularly.
Prereq: Placement into MATH 143
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/.

DSN S 102: Design Studio I
(1-6) Cr. 4.
A foundation design studio exploring two and 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.

DSN S 115: Design Collaborative Seminar
(1-0) Cr. 1.
Prereq: Member of Design Collaborative Learning Community
Orientation to the College of Design. Introduction to the design disciplines and studio pedagogy.

DSN S 131: Drawing I
(1-6) Cr. 4.
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.

DSN S 183: Design in Context
(3-0) Cr. 3.
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.

DSN S 232: Digital Design Communications
(3-0) Cr. 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.

E E 185: Introduction to Electrical Engineering and Problem-Solving I
(2-2) Cr. 3. F.S.
Prereq: (MATH 143 or satisfactory scores on mathematics placement examinations); credit or concurrent enrollment in MATH 165
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/. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count towards graduation.

ECON 101: Principles of Microeconomics
(3-0) Cr. 3. F.S.SS.
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.

ECON 101L: Laboratory in Principles of Microeconomics
(0-2) Cr. 1. F.
Prereq: Concurrent enrollment in the appropriate section of ECON 101
Discussion of material typically covered in Econ 101. Application of economic principles to real world problems. Economic principles and basic business management concepts applied to decision-making in agribusiness operations.

ECON 102: Principles of Macroeconomics
(3-0) Cr. 3. F.S.SS.
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 101 recommended.

ECON 235: Introduction to Agricultural Markets
(3-0) Cr. 3. F.S.
Prereq: ECON 101
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.

EDUC 204: Social Foundations of Education in the United States: Secondary
(3-0) Cr. 3. F.S.SS.
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.

EDUC 205: Social Foundations of Education in the United States: Early Childhood and Elementary Education
Cr. 3. F.S.
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. Students in K-12 education, secondary, education, or a non-education major should take EDUC 204.

EDUC 219: Orientation to Teacher Education: FCS, History, Math, Science and World Language and Cultures Majors
Cr. 1. F.S.
Prereq: Students seeking teacher licensure in Family and Consumer Sciences, History, Mathematics, Science and World Language and Cultures in grades 5-12.
Overview of 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.

ENGL 099S: Strategies for Nonnative Speakers of English: Academic Speaking and Pronunciation
Cr. 0. F.S.
Open to all interested international students.

ENGL 101B: English for Native Speakers of Other Languages: Academic English
(3-0) Cr. 3. F.S.
Prereq: Completion of placement exam
For undergraduates: Completion of ENGL 101 requirement prepares students for ENGL 150. For graduates: Completion of ENGL 101 satisfies the English requirement of the Graduate College. ENGL 101 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. Credit from ENGL 101 does not count toward graduation.

ENGL 101C: English for Native Speakers of Other Languages: Academic English II--Undergraduates
(3-0) Cr. 3. F.S.
Prereq: Completion of placement exam.
For undergraduates: Completion of ENGL 101 requirement prepares students for ENGL 150. For graduates: Completion of ENGL 101 satisfies the English requirement of the Graduate College. ENGL 101 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. Credit from ENGL 101 does not count toward graduation.

ENGL 150: Critical Thinking and Communication
(3-0) Cr. 3. F.S.SS.
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 160 is recommended.

ENGL 201: Introduction to Literature
(3-0) Cr. 3.
Prereq: Credit or concurrent enrollment in ENGL 150
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 214: Introduction to Technical Communication
Cr. 3. F.
Prereq: ENGL 150
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.

ENGL 225: Survey of British Literature to 1800
(3-0) Cr. 3.
Prereq: ENGL 250
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 226: Survey of British Literature since 1800
(3-0) Cr. 3.
Prereq: ENGL 250
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 237: Survey of Film History
(2-3) Cr. 3. F.
Prereq: Credit or concurrent enrollment in ENGL 150
Survey of U.S. and international film history from its beginnings in the late nineteenth century to the present. Class meets for two hours per week for lecture and discussion. Lab meets for up to three hours per week for film screenings.

ENGL 240: Introduction to American Indian Literature
(Cross-listed with AM IN). (3-0) Cr. 3. F.
Prereq: Credit or concurrent enrollment in ENGL 150
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.

ENGL 250: Written, Oral, Visual, and Electronic Composition
(3-0) Cr. 3. F.S.SS.
Prereq: ENGL 150; credit or concurrently enrollment in LIB 160; Sophomore classification or above
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. The University requires a minimum grade of C in ENGL 250 to meet the Communication Proficiency graduation requirement; some majors/degree programs may set higher standards.

ENGL 275: Analysis of Popular Culture Texts
(Cross-listed with SP CM). (3-0) Cr. 3. F.S.
Prereq: Credit or concurrent enrollment in ENGL 250
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.

ENGR 160: Engineering Problems with Computer Applications Laboratory
(2-2) Cr. 3. F.S.SS.
Prereq: MATH 143 or satisfactory scores on mathematics placement examinations
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/. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count towards graduation.

ENT 201: Introduction to Insects
(2.7-0) Cr. 1. F.S.SS.
Biological and ecological aspects of insects. Offered online only. 5 weeks.

ENT 211: Insects and Society
(2.7-0) Cr. 2. F.S.
Prereq: ENT 201
The importance of insects in human well-being. Insect-human interactions. Primarily for non-science and non-agriculture majors. Offered online only. 11 weeks.

ENT 214: Insects in Forensic Science
(3-0) Cr. 3. Alt. F., offered even-numbered years.
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.

ENT 220: Introduction to Forensic Science
(Cross-listed with C J). (3-0) Cr. 3. S.
Study of fundamental forensic science techniques and procedures covering types of physical, chemical, and biological evidence and how this information is used in the legal system. Assessment of crime scenes and various forensic specialties will be introduced.

ENV S 101: Environmental Geology: Earth in Crisis
(Cross-listed with GEOL). (3-0) Cr. 3. F.S.SS.
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.

ENV S 120: Introduction to Renewable Resources
(Cross-listed with AGRON, NREM). (3-0) Cr. 3. F.S.
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.

ENV S 173: Environmental Biology
(Cross-listed with BIOL). (3-0) Cr. 3. F.S.
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.

ENV S 201: Introduction to Environmental Issues
(Cross-listed with BIOL, ENSCI). (2-0) Cr. 2. F.
Discussion of current and emerging environmental issues such as human population growth, energy use, loss of biodiversity, water resources, and climate change.

EVENT 171: Introduction to Event Management
(3-0) Cr. 3. F.S.
Overview of the event management industries. Techniques and procedures required for designing and implementing successful events.

FRNCH 101: Elementary French I
(4-0) Cr. 4. F.SS.
Beginning level development of reading, writing, listening comprehension, and speaking in French, within the context of French culture.

FRNCH 201: Intermediate French I
(4-0) Cr. 4. F.
Prereq: FRNCH 102
Intermediate level development of reading, writing, listening comprehension, and speaking in French within the context of French culture.
Meets International Perspectives Requirement.

FS HN 101: Food and the Consumer
(3-0) Cr. 3. F.S.SS.
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.

FS HN 167: Introductory Human Nutrition and Health
(3-0) Cr. 3. F.S.SS.
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.

FS HN 220: American Food and Culture
(3-0) Cr. 3. F.S.
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.

GEOL 100: How the Earth Works
(3-0) Cr. 3. F.S.SS.
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 100L.

GEOL 100L: How the Earth Works: Laboratory
(0-2) Cr. 1. F.S.
Prereq: GEOL 100
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.

GEOL 101: Environmental Geology: Earth in Crisis
(Cross-listed with ENV S). (3-0) Cr. 3. F.S.SS.
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.

GEOL 105: Gems and Gemstones
(2-0) Cr. 1. F.
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.

GEOL 108: Introduction to Oceanography
(Cross-listed with ENV S). (3-0) Cr. 3. F.
Introduction to the study of oceans and the processes that helped shape them. A major focus is on how the oceans work, with special attention on geological, chemical, and biological processes. Ocean circulation and its influence on climate. Life of the oceans. Use and misuse of ocean resources. Anthropogenic impacts on the oceanic environment.

GEOL 111: Geological Disasters
(Cross-listed with ENV S). (1-0) Cr. 1. F.S.SS.
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.

GEOL 201: Geology for Engineers and Environmental Scientists
(2-2) Cr. 3. F.
Introduction to Earth materials and processes with emphasis on engineering and environmental applications.

GER 101: Elementary German I
(4-0) Cr. 4. F.SS.
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.

GER 201: Intermediate German I
(4-0) Cr. 4. F.
Prereq: GER 102
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.

GLOBE 201: Introduction to Global Resource Systems
(3-0) Cr. 3. F.S.
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.

H S 105: First Aid and Emergency Care
(1-2) Cr. 2. F.S.SS.
Discussion and application of the basic techniques of utilizing bloodborne pathogen safety measures, administering first aid and cardiopulmonary resuscitation. ARC layperson certification available.

H S 110: Personal and Consumer Health
(3-0) Cr. 3. F.S.
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.

H SCI 110: Orientation and Human Sciences Career Exploration
(2-0) Cr. 2. F.S.
Orientation and adjustment to the university and college; review of policies and procedures; academic resources; and course selection and planning. Comprehensive approach to career development; intensive self-analysis; and in-depth examination of majors in Human Sciences. Required for all students declared as an Undecided major in the College of Human Sciences.

H SCI 150: Dialogues on Diversity
(1-0) Cr. 1. F.S.
An exploration of diversity within the context of the Iowa State University community through understanding human relations issues.

HD FS 102: Human Development
(3-0) Cr. 3. F.S.SS.
Overview of life-span developmental tasks (physical, cognitive, language, social, emotional) examined from various theoretical perspectives. Discussion of topics related to family diversity, individual/family health and well-being and reciprocal relationships as affected by external factors.

HD FS 183: Personal Finance in Early Adulthood
(1-0) Cr. 1. F.S.SS.
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.

HD FS 223: Child Development and Health
(3-0) Cr. 3. S.
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. Either HD FS 223 or HD FS 224, but not both, may be applied toward graduation.

HD FS 239: Consumer Issues
(3-0) Cr. 3. F.S.
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. Diversity Requirement

HD FS 240: Literature for Children
(3-0) Cr. 3. F.S.
Evaluation of literature for children, including an emphasis on diversity and inclusion; cultural competence. Roles of literature in the overall development of children. Literature selection and use in the home and educational settings.

HD FS 276: Human Sexuality
(3-0) Cr. 3. F.S.SS.
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. Diversity Requirement

HIST 201: Introduction to Western Civilization I
(3-0) Cr. 3. F.
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.

HIST 207: Chinese Civilization
(3-0) Cr. 3.
Origins, development, decline and transformation of China from earliest times to 1911.
Meets International Perspectives Requirement.

HIST 211: Ancient Empires: From Sargon to Caesar
Cr. 3. F.S.
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.

HIST 221: Survey of United States History I
(3-0) Cr. 3. F.
Colonial foundations: revolution, confederation, and constitution; nationalism and democracy; sectional disunity, Civil War, and reunion.

HIST 280: Introduction to History of Science I
(3-0) Cr. 3.
Ideas of nature from ancient Greece to the seventeenth-century scientific revolution.
Meets International Perspectives Requirement.

HORT 121: Home Horticulture
(3-0) Cr. 3. F.S.
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.

HSP M 101: Introduction to the Hospitality Industry
(3-0) Cr. 3. F.S.
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.

I E 148: Information Engineering
(2-2) Cr. 3. F.S.
Prereq: Credit or concurrent enrollment in MATH 143
Development of information solutions for engineering problems. Fundamentals of the software development process. Engineering computations and the human/computer interface. Data models and database development. Program connectivity and network applications. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count towards graduation.

INTST 235: Introduction to International Studies
(3-0) Cr. 3. F.SS.
Overview of international studies, emphasizing cultural, geographic, economic, and political characteristics of major world areas and nations. Meets International Perspectives Requirement.

ITAL 107: Intensive Beginning Italian
Cr. 4. F.S.
A communicative approach to grammar and vocabulary within the context of Italian culture for students whose native language is not Italian. Taught in Italian.

JL MC 101: Mass Media and Society
(3-0) Cr. 3. F.S.SS.
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.

JL MC 110: Orientation to Journalism and Communication
(1-0) Cr. 1. F.S.
Orientation to professional and pre-professional opportunities, writing for the mass media and curriculum requirements in the Greenlee School. Basic media writing preparation. Offered on a satisfactory-fail basis only.

JL MC 240: Principles of Journalism
Cr. 3. F.S.
Analysis of journalism industry and specific audiences served by print, electronic, visual and digital media. Introduction to core values of journalism and guiding principles that encompass literacy, ethics, law, history, the economy and cultural and societal implications.

JL MC 242: Visual Principles for Mass Communicators
(3-0) Cr. 3. F.S.
Understanding and analysis of the visual message. Visual perception, visual communication theory, design syntax, design elements and how they are applied in mass communication.

KIN 252: Introduction to the Discipline of Kinesiology
(1-0) Cr. 1. F.S.
Relevant societal issues and research within the discipline of Kinesiology (the study of movement) are addressed.

KIN 253: Orientation and Learning Community in Kinesiology and Health
(1-0) Cr. 1. F.S.
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.

L L S 112: Foundations of Learning and Productive Team Membership
(2-0) Cr. 2. F.
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.

LAS 101: Orientation for Open Option and Preprofessional Students
(1-0) Cr. 1. F.
Introduction to all undergraduate colleges. Provides information about university resources and services, assists with a successful academic transition to the university, and helps initiate the process of identifying academic major(s) and eventual career paths. Required of all first-year students in Open Option and Preprofessional Programs. Offered on a satisfactory-fail basis only.

LATIN 101: Elementary Latin I
(3-0) Cr. 3. F.
Grammar and vocabulary of classical Latin, within the context of Roman culture; reading knowledge through texts adapted from classical authors.

LD ST 122: Leading with Purpose
(1-0) Cr. 1. F.S.
Designed for emerging student leaders. Basic leadership skills covering personal skills development, goal achievement, values-based behaviors and mission statement development.

LD ST 270: Campus Leadership Development
(3-0) Cr. 3. F.S.SS.
Introduce effective leadership practices for emerging leaders. Engage in experiential campus leadership opportunities.

LIB 160: Introduction to College Level Research
(1-0) Cr. 1. F.S.SS.
Prereq: Completion of ENGL 101 requirement
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 150 and ENGL 250 for requirements related to LIB 160. Offered on a satisfactory-fail basis only.

LING 119: Introduction to World Languages
(Cross-listed with WLC). (3-0) Cr. 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 120: Computers and Language
(Cross-listed with ENGL). (3-0) Cr. 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.

M E 160: Mechanical Engineering Problem Solving with Computer Applications
(2-2) Cr. 3. F.S.
Prereq: (MATH 143 or MATH 145); credit or concurrent enrollment in MATH 165; M E major
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 MATLAB computer programming to aid problem solving, including curve fitting and graphing. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count toward graduation.

M E 170: Engineering Graphics and Introductory Design
(2-2) Cr. 3. F.S.
Prereq: Credit or concurrent enrollment in MATH 143 or MATH 145 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/.

M S 101: Introduction to Military Science
(1-0) Cr. 1. F.
Prereq: Concurrent enrollment in M S 101L
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.

M S 101L: Basic Leadership Laboratory I
(0-2) Cr. 1. F.
Prereq: Concurrent enrollment in M S 101
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.

M S 150: Army Physical Readiness
(0-3) Cr. 1. Repeatable. F.S.
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.

MATH 101: Orientation in Mathematics
(1-0) Cr. 1. F.
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.

MATH 104: Introduction to Probability
(3-0) Cr. 3. F.S.SS.
Prereq: Satisfactory performance on placement assessment
Permutations, combinations, probability, expected value, and applications. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. Either MATH 104 or MATH 150 may be counted toward graduation, but not both.

MATH 105: Introduction to Mathematical Ideas
(3-0) Cr. 3. F.S.SS.
Prereq: Satisfactory performance on placement assessment
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/.

MATH 140: College Algebra
(3-1) Cr. 3. F.S.SS.
Prereq: Satisfactory performance on placement assessment or concurrent enrollment in MATH 139
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/.

MATH 143: Preparation for Calculus
(4-0) Cr. 4. F.S.
Prereq: Satisfactory performance on placement assessment or MATH 140
Preparation for MATH 160 or MATH 165. 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/. Only one of MATH 143 and MATH 145 may count toward graduation.

MATH 145: Applied Trigonometry
(3-0) Cr. 3. F.S.
Prereq: Satisfactory performance on placement assessment or minimum of C- in MATH 140
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/. Only one of MATH 143 and MATH 145 may count toward graduation.

MATH 150: Discrete Mathematics for Business and Social Sciences
(2-1) Cr. 3. F.S.SS.
Prereq: Satisfactory performance on placement assessment or concurrent enrollment in MATH 149
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/. Either MATH 104 or MATH 150 may be counted toward graduation, but not both.

MATH 160: Survey of Calculus
(4-0) Cr. 4. F.S.
Prereq: Satisfactory performance on placement assessment or minimum of C- in (MATH 140 or MATH 143)
Analytic geometry, derivatives and integrals of elementary functions, simple differential equations, and applications. Will not serve as a prerequisite for MATH 265 or MATH 266. Satisfactory placement scores can be found at https://math.iastate.edu/academics/undergraduate/aleks/placement/. Only one of MATH 151, MATH 160, or the sequence MATH 165-MATH 166 may be counted towards graduation.

MATH 165: Calculus I
(4-0) Cr. 4. F.S.SS.
Prereq: Satisfactory performance on placement assessment or minimum of C- in MATH 143
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/. Only one of MATH 151 or MATH 160 or the sequence MATH 165-MATH 166 may be counted towards graduation.

MATH 166: Calculus II
(4-0) Cr. 4. F.S.SS.
Prereq: Minimum of C- in MATH 165 or satisfactory performance on placement assessments
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/. Only one of MATH 151, MATH 160, or the sequence MATH 165-MATH 166 may be counted towards graduation.

MATH 195: Mathematics for Elementary Education I
(2-2) Cr. 3. F.S.
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/. Students in the College of Liberal Arts and Sciences may not count MATH 195 toward General Education Requirements.

MATH 265: Calculus III
(4-0) Cr. 4. F.S.SS.
Prereq: Minimum of C- in MATH 166 or MATH 166H
Geometry of space and vectors, multivariable differential calculus, multivariable integral calculus, vector calculus.

MATH 267: Elementary Differential Equations and Laplace Transforms
(4-0) Cr. 4. F.S.SS.
Prereq: Minimum of C- in MATH 166 or MATH 166H
Same as MATH 266 but also including Laplace transforms and power series solutions to ordinary differential equations. Credit for either MATH 267 or the MATH 266, 268 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 267, MATH 266, MATH 269.

MICRO 101: Microbial World
(3-0) Cr. 3. F.
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.

MICRO 201: Introduction to Microbiology
(2-0) Cr. 2. F.S.
Prereq: One BIOL course except BIOL 110, BIOL 111, BIOL 112, BIOL 173, BIOL 201, BIOL 307
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 201 for Micro 302 in advanced courses.

MICRO 201L: Introductory Microbiology Laboratory
(0-3) Cr. 1. F.S.
Prereq: MICRO 201 or MICRO 302
Basic microbiology laboratory techniques for non-microbiology majors. Credit for either Micro 201L or 302L, but not both, may be applied toward graduation.

MTEOR 107: Severe and Hazardous Weather
(2-0) Cr. 1. F.
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.

MTEOR 140: Climate and Society
(Cross-listed with AGRON, ENV S, GEOL). Cr. 3. F.S.
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.

MTEOR 206: Introduction to Weather and Climate
(Cross-listed with AGRON). (3-0) Cr. 3. F.S.
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.

MUSIC 101: Fundamentals of Music
(1-2) Cr. 2. F.S.
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.

MUSIC 102: Introduction to Music Listening
(3-0) Cr. 3. F.S.SS.
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.

MUSIC 111: Wind Ensemble
(0-3) Cr. 1. Repeatable. F.S.
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.

MUSIC 112: Concert Band
(0-2) Cr. 1. Repeatable. F.S.
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.

MUSIC 113: Jazz Ensemble
(0-2) Cr. 1. Repeatable. F.S.
Designed to explore various styles and trends in contemporary jazz. Open to all students by audition.

MUSIC 114A: Marching and Pep Bands: Marching Band
(0-5) Cr. 1. Repeatable. F.
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.music.iastate.edu/org/marching). Students may not be concurrently enrolled in MUSIC 114A and 114C.

MUSIC 115: Symphonic Band
(0-3) Cr. 1. Repeatable. F.S.
Stresses high quality wind literature. Performances include formal concerts on campus. Open to all students by audition.

MUSIC 118: Applied Music: Non-majors
(0.5-0) Cr. 1-2. Repeatable. F.S.
Prereq: Permission of Instructor
Applied music for the general student. Audition required.

MUSIC 141: Lyrica Ensemble
(0-3) Cr. 1. Repeatable. F.S.
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.

MUSIC 151A: University Chorus: Cantamus Women's Choir
(0-3) Cr. 1. Repeatable. F.S.
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.

MUSIC 151B: University Chorus: Statesmen Men's Choir
(0-3) Cr. 1. Repeatable. F.S.
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.

MUSIC 161: Iowa State Singers
(0-5) Cr. 1. Repeatable. F.S.
Concert choir specializing in performance of advanced music literature, Renaissance through contemporary. Campus concerts, annual spring tour. Open to all students by audition.

MUSIC 181: Symphony Orchestra
(0-4) Cr. 1. Repeatable. F.S.
Reading, preparation, and performance of standard repertoire. Five or six concerts annually plus occasional off-campus appearances. Open to all students by audition.

N S 111: Introduction to Naval Science
(3-0) Cr. 3. F.
Introduction to the organization, regulations, and capabilities of the US Navy, with emphasis on mission and principal warfare components.

NREM 120: Introduction to Renewable Resources
(Cross-listed with AGRON, ENV S). (3-0) Cr. 3. F.S.
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.

P R 220: Principles of Public Relations
(3-0) Cr. 3.
Introduction to public relations in business, government and non-profit organizations; functions, processes, and management; ethics, public opinion and theory.

PHIL 201: Introduction to Philosophy
(3-0) Cr. 3. F.S.SS.
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.

PHIL 206: Introduction to Logic and Scientific Reasoning
(3-0) Cr. 3. F.
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.

PHIL 207: Introduction to Symbolic Logic
(Cross-listed with LING). (3-0) Cr. 3. F.S.
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 207 as early as possible.

PHIL 230: Moral Theory and Practice
(3-0) Cr. 3. F.S.SS.
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.

PHIL 235: Ethical Issues in a Diverse Society
(3-0) Cr. 3. F.S.
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. Diversity Requirement

PHYS 050: Preparation for Introductory Physics
Cr. 0. F.S.
An in#depth active learning experience designed to impart the fundamental concepts and principles of physics, with an emphasis on applied mathematical techniques and logical thinking. For students intending to enroll in classical physics (PHYS 231/232) who have not taken high school physics, who have not had a high school college preparatory physics course, or who need a review of physics problem solving and physics concepts. 1 year high school algebra recommended. Credit for Phys 50 does not count toward graduation.

PHYS 101: Physics for the Nonscientist
(3-0) Cr. 3. F.S.
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. Not suitable to meet a general physics requirement for natural science majors.

PHYS 115: Physics for the Life Sciences
(4-0) Cr. 4. F.S.
Emphasis on basic physics principles applied to biological problems. Topics include mechanics, fluids, thermodynamics, heat, light, sound, electricity and magnetism. A coordinated laboratory, Physics 115 laboratory is available. 1.5 yr. HS algebra, 1 yr. HS geometry, 1 semester HS trigonometry recommended.

PHYS 131: General Physics I
(4-0) Cr. 4. F.S.SS.
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.

PHYS 131L: General Physics I Laboratory
(0-2) Cr. 1. F.S.SS.
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.

PHYS 132: General Physics II
(4-0) Cr. 4. F.S.SS.
Prereq: PHYS 111 or PHYS 131
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.

PHYS 132L: General Physics II Laboratory
(0-2) Cr. 1. F.S.SS.
Prereq: Credit or concurrent enrollment in PHYS 112 or PHYS 132
Laboratory experiments in Electricity and Magnetism, Wave and Optics.

PHYS 231: Introduction to Classical Physics I
(4-0) Cr. 4. F.S.SS.
Prereq: MATH 165; credit or concurrent enrollment in MATH 166
For engineering and science majors. 3 hours of lecture each week plus 3 recitations every two weeks. Elementary mechanics including kinematics and dynamics of particles, work and energy, linear and angular momentum, conservation laws, rotational motion, oscillations, gravitation. Heat, thermodynamics, kinetic theory of gases; waves and sound. Proficiency in algebra, trigonometry, vector manipulation required.

PHYS 231L: Introduction to Classical Physics I Laboratory
Cr. 1. F.S.SS.
Prereq: MATH 165; credit or concurrent enrollment in PHYS 221 or PHYS 221H or PHYS 231 or PHYS 231H or PHYS 241 or PHYS 241H
Laboratory experiments in elementary kinematics, work and energy, conservation laws, and rotational motion. Proficiency in algebra, trigonometry, vector manipulation required.

PHYS 232: Introduction to Classical Physics II
(4-0) Cr. 4. F.S.SS.
Prereq: MATH 166; PHYS 221 or PHYS 221H or PHYS 231 or PHYS 231H or PHYS 241 or PHYS 241H
3 hours of lecture each week plus 1 recitation each week. Fluid dynamics. Electric forces and fields. Electrical currents; DC circuits. Magnetic forces and fields; LR, LC, LCR circuits; Maxwell's equations; wave optics.

PHYS 232L: Introduction to Classical Physics II Laboratory
(0-2) Cr. 1. F.S.SS.
Prereq: Credit or concurrent enrollment in PHYS 222 or PHYS 222H or PHYS 232 or PHYS 232H or PHYS 242 or PHYS 242H
Laboratory experiments in fluid dynamics, electric forces and fields, electrical currents, DC circuits, magnetic forces and fields, and wave optics.

PHYS 241: Principles and Symmetries in Classical Physics I
(4.5-1) Cr. 5. F.
Prereq: MATH 165; credit or concurrent enrollment in MATH 166
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.

POL S 111: Introduction to American Government
(3-0) Cr. 3. F.S.
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.

POL S 121: Introduction to International Politics
(3-0) Cr. 3. F.S.
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.

POL S 125: Democracy and Dictatorship: Introduction to Comparative Politics
(3-0) Cr. 3. F.S.
Interactions between governments and citizens in countries outside the US. Causes of democracy, dictatorship, and economic and social development.
Meets International Perspectives Requirement.

PSYCH 101: Introduction to Psychology
(3-0) Cr. 3. F.S.SS.
Fundamental psychological concepts derived from the application of the scientific method to the study of behavior and mental processes. Applications of psychology.

PSYCH 102: Laboratory in Introductory Psychology
(0-2) Cr. 1. F.S.
Prereq: Credit or concurrent enrollment in PSYCH 101
Laboratory to accompany 101.

PSYCH 111: Orientation to Psychology
Cr. 1. F.S.
Program requirements and degree/career options. Required of psychology majors.

PSYCH 131: Academic Learning Skills
(1-0) Cr. 1. F.S.
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.

PSYCH 230: Developmental Psychology
(3-0) Cr. 3. F.S.SS.
Life-span development of physical traits, cognition, intelligence, language, social and emotional behavior, personality, and adjustment.

PSYCH 250: Psychology of the Workplace
(3-0) Cr. 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 280: Social Psychology
(3-0) Cr. 3. F.S.SS.
Individual human behavior in social contexts. Emphasis on social judgments and decisions, attitudes, perceptions of others, social influence, aggression, stereotypes, and helping.

RELIG 205: World Religions

(Cross-listed with WLC). (3-0) Cr. 3. F.S.SS.

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.

RELIG 210: Religion in America

(3-0) Cr. 3. F.S.SS.

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. Diversity Requirement

RELIG 332: Catholicism

(3-0) Cr. 3. F.

An explanation of the beliefs, spirit, and practices of Roman Catholicism, including its understanding of God, sacramentality, the human person, and community, and its relationship to other forms of Christianity and other world religions.

RUS 101: Introduction to Russian Language and Culture I

(4-0) Cr. 4. F.

Introduction to the Russian language (focusing on the development of speaking, listening, reading and writing skills) and Russian culture.

RUS 201: Intermediate Russian I

(4-0) Cr. 4. F.

Prereq: RUS 102

Thorough review of grammar and growth of vocabulary. Selected readings. Continued use of the four basic skills.

Meets International Perspectives Requirement.

S E 101: Software Engineering Orientation

Cr. R.

Introduction to the procedures, policies, and resources of Iowa State University and the Software Engineering Program. Offered on a satisfactory-fail basis only.

S E 185: Problem Solving in Software Engineering

(2-2) Cr. 3.

Prereq: Credit or concurrent enrollment in MATH 143 (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/. Only one of ENGR 160, A B E 160, AER E 160, C E 160, CH E 160, CPR E 185, E E 185, I E 148, M E 160, and S E 185 may count toward graduation.

SOC 115: Orientation to Sociology

(1-0) Cr. 1. F.S.

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.

SOC 134: Introduction to Sociology

(3-0) Cr. 3. F.S.SS.

Social interaction and group behavior with emphasis on the scientific study of contemporary U.S. society, including issues relating to socialization, inequality, and changing rural and urban communities. Analysis of relationships among the institutions of family, religion, political participation, work, and leisure.

SOC 219: Families and Intimate Relationships

(3-0) Cr. 3. F.S.

Prereq: SOC 134

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.

SOC 235: Social Problems and American Values
(3-0) Cr. 3. F.S.
Prereq: SOC 134
Sociological concepts, theories and methods to analyze the causes and consequences of social problems. Social problems discussed may include crime, substance abuse, income inequalities, discrimination, poverty, race relations, health care, family issues, and the environment. How American culture and values shape societal conditions, public discourse and policy.

SOC 241: Youth and Crime
(Cross-listed with C J). (3-0) Cr. 3. F.
An examination of delinquency that focuses on the relationship between youth as victims and as offenders, social and etiological features of delinquency, the role of the criminal justice system, delinquents' rights, and traditional and alternative ways of dealing with juvenile crime.

SP CM 110: Listening
(3-0) Cr. 3. F.S.
Theory, principles, and competency development in comprehensive, therapeutic, critical, consumer, and appreciative listening. The impact of listening in relationships and partnerships.

SP CM 212: Fundamentals of Public Speaking
(3-0) Cr. 3. F.S.SS.
Theory and practice of basic speech communication principles applied to public speaking. Practice in the preparation and delivery of extemporaneous speeches.

SP CM 216: America Speaks: Great Speakers and Speeches in US History
Cr. 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.

SP CM 275: Analysis of Popular Culture Texts
(Cross-listed with ENGL). (3-0) Cr. 3. F.S.
Prereq: Credit or concurrent enrollment in ENGL 250
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.

SP ED 250: Education of the Exceptional Learner
(3-0) Cr. 3. F.S.
Prereq: EDUC 205
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.

SPAN 097: Accelerated Spanish Review
(3-2) Cr. 0. F.S.
For students who require additional review at the first year (101-102) level. Course components include a compact review of 101 and the essential elements of 102. Course completed with a passing grade fulfills the LAS foreign language requirement. Not recommended for students who wish to continue language at the second year (201-202) level without completing 102. Two years but less than three years of high-school Spanish recommended.

SPAN 101: Elementary Spanish I
(4-0) Cr. 4. F.SS.
A communicative approach to grammar and vocabulary within the context of Hispanic culture. For students whose native language is not Spanish.

SPAN 102: Elementary Spanish II
(4-0) Cr. 4. S.SS.
Prereq: SPAN 101 or SPAN 97 or placement by departmental exam
Continuation of Spanish 101. 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.

SPAN 201: Intermediate Spanish I
(4-0) Cr. 4. F.
Prereq: SPAN 102 or placement by departmental 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.

SPAN 297: Intensive Intermediate Spanish
(4-0) Cr. 4. F.S.
Prereq: SPAN 201 or placement by departmental exam
Bridge course between 200- and 300-level Spanish courses that focuses on application of advanced grammatical concepts within the context of Hispanic culture. Accelerated review of SPAN 201 and SPAN 202 designed for students who want to continue at the 300 level. Taught in Spanish for students whose native language is not Spanish.
Meets International Perspectives Requirement.

SPAN 303: Spanish Conversation and Composition
(3-0) Cr. 3. F.S.
Prereq: SPAN 202 or placement by departmental exam
Intensive oral practice and improvement of oral proficiency. Application of specific grammatical concepts for development of conversational and writing skills within the context of Hispanic culture. Taught in Spanish.
Meets International Perspectives Requirement.

STAT 101: Principles of Statistics
(3-2) Cr. 4. F.S.SS.
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; estimation and hypothesis testing; linear regression and correlation; contingency tables. 1 1/2 years of high school algebra required. Credit for only one of the following courses may be applied toward graduation: STAT 101, STAT 104, STAT 105, STAT 201, or STAT 226.

STAT 104: Introduction to Statistics
(2-2) Cr. 3. F.S.SS.
Statistical concepts and their use in science; collecting, organizing and drawing conclusions from data; elementary probability; binomial and normal distributions; regression; estimation and hypothesis testing. For students in the agricultural and biological sciences. 1 1/2 years of high school algebra required. Credit for only one of the following courses may be applied toward graduation: STAT 101, STAT 104, STAT 105, STAT 201, or STAT 226.

THTRE 106: Introduction to the Performing Arts
(3-0) Cr. 3. F.S.
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.

THTRE 110: Theatre and Society
(3-0) Cr. 3. F.S.
An introduction to Theatre focusing on its relationship with society throughout history.

THTRE 251: Acting Foundations
(3-0) Cr. 3. F.S.
Theory and practice in fundamentals of acting.

TSM 115: Solving Technology Problems
(2-2) Cr. 3. F.S.
Prereq: Credit or concurrent enrollment in MATH 140 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.

TSM 116: Introduction to Design in Technology
(2-2) Cr. 3. F.S.
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.

U ST 104: Personal Career Development
(2-0) Cr. 2. F.S.
Comprehensive approach to personal career development providing students with the skills and structure to make informed choices about their major and career path. Self-exploration of interests, skills, values, and personality as related to the world of work using a variety of techniques; exploration of majors and occupations; model for major and career decision-making and career goal implementation; exposure to effective job search and interviewing skills and resources.

US LS 211: Introduction to U.S. Latino/a Studies
(3-0) Cr. 3. F.S.
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. Diversity Requirement

WGS 160: Gender Justice
(2-0) Cr. 1. F.S.
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.

WGS 201: Introduction to Women's and Gender Studies
(3-0) Cr. 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. Diversity Requirement

W F S 278: Introduction to Global Film
(3-0) Cr. 3. F.
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.

WLC 210: Introduction to Asian American Studies
(Cross-listed with ANTHR). (3-0) Cr. 3.
An interdisciplinary and chronological examination of Asian American immigration experiences from the early 19th century to the 21st century. Focus on how these immigration histories are accompanied by changing racial constructions. Discussion of racial stereotyping, the model minority myth, identity development, and efforts for social justice.
Meets U.S. Diversity Requirement

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, COM S 227 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.