Entry Level Courses

Resources
http://catalog.iastate.edu

Credits and Contact Hours
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.

(2-2) Cr. 3. Prereq: Satisfactory scores in math placement assessments; credit or enrollment in MATH 142.
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 165. Dress and Diversity in Society.
(3-0) Cr. 3. F.S.
Examination of diversity among consumers and forecasting future trends in consumer behavior. Introduction to social justice and responsibility issues. Meets U.S. Diversity Requirement

AER E 160. Aerospace Engineering Problems With Computer Applications Laboratory.
(2-2) Cr. 3. F.S. Prereq: Satisfactory scores on mathematics placement assessments; credit or enrollment in MATH 142, MATH 165

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 101. Introductory Leadership Laboratory I.
(0-2) Cr. 1. F. Prereq: Membership as a cadet in AFROTC
Instruction on Air Force customs and courtesies; drill and ceremonies, issuing military commands, physical training, studying the environment of an Air Force officer and learning about areas of opportunity available to commissioned officers. Offered on a satisfactory-fail basis only.

(1-0) Cr. 1. F.

(0-2) Cr. 1. Repeatable. F.S. Prereq: Membership as a cadet in AFROTC
Use of basic military training skills and instruction to develop confidence, leadership, communication skills and physical fitness. The team approach is utilized in the instruction and application of Air Force physical fitness requirements. Students will learn various Air Force physical fitness techniques as well as how to conduct physical fitness sessions. Full participation in all events will be determined based on student's physical and medical eligibility. Offered on a satisfactory-fail basis only.

AGEDS 110B. Agricultural Studies (Fall only).
(1-0) Cr. 1. F.S.
Orientation to the department. Careers in agriculture.

AGRON 110. Professional Development in Agronomy: Orientation.
Cr. 0.5-1. F.
Orientation to college life, the profession of agronomy, and the agronomy curriculum.

(2-3) Cr. 3. F.S.
A foundation course in agronomy applying crop, soil, and environmental sciences in understanding agricultural systems in the world. Includes introductory concepts of plant, soil, tillage, pest, environmental, and sustainable aspects of crop production. Off-campus version offered through internet by interactive computer courseware.

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.

(2-2) Cr. 3. F.S. Prereq: CHEM 163
Introduction to physical, chemical, and biological properties of soils, their formation, classification, and distribution. Use of soil survey and computer databank information in balancing agronomic, economic, and environmental concerns in soil management. Credit for only one of Agron 154, 155, or 156 may be applied toward graduation.

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 210. Introduction to American Indian Studies.
(3-0) Cr. 3. F.S.SS.
Introduction to the multidisciplinary aspects of American Indian studies. Topics include literature, the arts, history, anthropology, sociology, education, and contemporary Indian politics. Guest lectures, media presentations, and discussion of assigned readings. Meets U.S. Diversity Requirement

AN S 101. Working with Animals.
(1-2) Cr. 2. F.S.
A hands-on introductory course in skills for proper care and management of domestic animals. Husbandry skills including health observation, animal movement, identification, management procedures, and environmental assessment are covered.

AN S 110. Orientation in Animal Science and ISU.
(2-0) Cr. 1. F.S.
Orientation to the university and Department of Animal Science. Challenges and opportunities available to the professional animal agriculits. Professional goal setting, portfolio development, and development of interpersonal skills in the context of pursuing a career in animal science.

(2-0) Cr. 2. F.S.
Ways domestic animals serve the basic needs of humans for food, shelter, protection, fuel, and emotional well-being. Terminology, basic structures of the industries surrounding the production, care, and marketing of domestic animals in the U.S.

ANTHR 201. Introduction to Cultural Anthropology.
(3-0) Cr. 3. F.S.SS.
Comparative study of culture as key to understanding human behaviors in different societies. Using a global, cross-cultural perspective, patterns of family life, economic and political activities, religious beliefs, and the ways in which cultures change are examined. Meets International Perspectives Requirement.

ANTHR 202. Introduction to Biological Anthropology and Archaeology.
(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.

(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. History of Architecture I. (3-0) Cr. 3. F.
Survey of western architectural ideas and practices in their social, cultural, and representational contexts. Comparisons with global examples. Ancient through 1750. 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 period. 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. The lecture course will provide students with a creative and intellectual context in which to study historical and contemporary instances of the visual in culture. Individual lectures examine 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 and related fields. Meets U.S. Diversity Requirement

ASTRO 103. Evening Star. Cr. 1. F.S.
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 Blackboard Learn. 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. 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. 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.SS.
For the nonscientist. Observational aspects of 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 Milky Way Galaxy: clouds of matter in space, the structure and evolution of our galaxy. Other galaxies, clusters of galaxies, quasars. Theories of the origin of the universe.

BBMB 101. Introduction to Biochemistry. (1-0) Cr. 1. F.
Research activities, career opportunities in biochemistry and biophysics, and an introduction to the structure of biologically important compounds. For students majoring in biochemistry, agricultural 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 110. Introduction to Biology. Cr. 1. F.
Orientation to the scope of the biological sciences, and discussion of professional opportunities. Required of first year biology majors. Offered on a satisfactory-fail basis only.

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. Prereq: Credit or 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 or 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.

BIOL 212L. Principles of Biology Laboratory II. (0-3) Cr. 1. F. Prereq: credit or 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.

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

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 101, 102, or 103 may be counted toward graduation.

C E 160. Engineering Problems with Computational Laboratory. (2-2) Cr. 3. F. Prereq: MATH 141, MATH 142 or satisfactory scores on mathematics placement assessments; credit or enrollment in MATH 165
Formulation of engineering problems using spreadsheets and Visual Basic for Application for solution. Presenting results using word processing, tables, and graphs. Introduction to engineering economics and statics. Civil engineering examples.

C E 170. Graphics for Civil Engineering. (0-4) Cr. 2. F. Prereq: MATH 165, credit or enrollment in C E 105
Fundamental graphics. Introduction to computer aided drafting and modeling. Civil engineering applications.

C I 204. Social Foundations of Education in the United States. (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 in public schools. Designed for prospective teachers.

CHEM 050. Preparation for College Chemistry. (3-0) Cr. 0. F.S. Prereq: 1 year high school algebra
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. 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: 1 year of high school algebra and geometry and Chem 50 or 1 year of high school chemistry; and credit or 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. Non-majors: chemical reactions, stoichiometry, atomic structure, periodic properties, chemical bonding, states of matter, solutions, thermodynamics, acid-base theory, oxidation-reduction reactions, basic chemical kinetics, and chemical equilibrium. Only one of Chem 163, 167, 177, or 201 may count toward graduation.

CHEM 163L. Laboratory in College Chemistry.
LAB 3 Cr. 1. F.S.SS. Prereq: Credit or enrollment for credit 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. Prereq: MATH 140 or high school equivalent and 1 year of high school chemistry or CHEM 50
Principles of chemistry and properties of matter explained in terms of modern chemical theory with emphasis on topics of general interest to the engineer. 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: MATH 140 or high school equivalent, and CHEM 50 or 1 year high school chemistry, and credit or enrollment in CHEM 177L. Chemistry and biochemistry majors may consider taking CHEM 201. 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, thermodynamics, rates of reactions, changes of state, solution behavior, atomic structure, periodic relationships, chemical bonding. Only one of Chem 163, 167, 177, or 201 may count toward graduation.

CHEM 177L. Laboratory in General Chemistry I.
LAB 3 Cr. 1. F.S.SS. Prereq: Credit or enrollment for credit in CHEM 177 Laboratory to accompany Chem 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.
LAB 3 Cr. 1. F. Prereq: Credit or enrollment for credit in 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.
LAB 3 Cr. 3. F.S.SS. Prereq: 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 201. Advanced General Chemistry.
LAB 3 Cr. 5. F. Prereq: Co-enrollment in MATH 165 or credit, one year of high school chemistry, and one year high school physics or advanced chemistry. Co-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. Only one of Chem 163, 167, 177, or 201 may count toward graduation.

CHIN 101. Elementary Mandarin Chinese I.
LAB 3 Cr. 5. F.
Introduction to spoken and written colloquial Mandarin through pinyin and simplified characters.

CHIN 201. Intermediate Mandarin Chinese I.
LAB 3 Cr. 5. F. Prereq: CHIN 102
Development of speaking, writing, reading, and listening skills. Review and expansion of grammar skills, intensification of character acquisition. Meets International Perspectives Requirement.

CL ST 240. Introduction to the U.S. Criminal Justice System.
LAB 3 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.

LAB 3 Cr. 3. F. Prereq: SOC 134
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.

CL PS 122. Leading with Purpose.
LAB 3 Cr. 3. F.
Designed for emerging student leaders, this course will provide students with basic leadership skills covering strengths identification, personal skills development, goal achievement, values-based behaviors, and mission statement development.

CL PS 270. Campus Leadership Development.
LAB 3 Cr. 3. F.S.
Theory and practice of effective leadership in a campus context. Study of effective leadership models and leadership in complex systems. Expectation of engagement in campus activities.

CL ST 273. Greek and Roman Mythology.
LAB 3 Cr. 3. F.S.SS.
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.
LAB 3 Cr. 3. F.S.
Introduction to the procedures and policies of Iowa State University and the Department of Computer Science, test-outs, honorary societies, etc. Issues relevant to student adjustment to college life will also be discussed. Offered on a satisfactory-fail basis only.

COM S 103. Computer Applications.
LAB 3 Cr. 3. F.S.SS.
Introduction to computer literacy and applications. Applications: Windows, Internet browser/HTML, word processing, spreadsheets, database management and presentation software. Literacy: history of computing, structure of computers, telecommunications, computer ethics, computer crime, and history of programming languages. No prior computer experience necessary. Course is offered online only. Students must attend an orientation session the first week of class.

COM S 104. Introduction to Programming.
LAB 3 Cr. 3. F.S.
Offered first 8 weeks and last 8 weeks. Use of personal computer and workstation operating systems 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 Unix tools, program structure, expression, variables, decision and logic, and iteration. No prior computer experience necessary.

LAB 3 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.
(Cross-listed with MIS). (3-1) Cr. 3. F.S. Prereq: MATH 150 or placement into MATH 140/MATH 141/MATH 142 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 abstract data types. Interactive and file I/O. Exceptions/error-handling. 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/MIS 207 and Com S 227.

COM S 227. Introduction to Object-oriented Programming. 
(3-2) Cr. 4. F.S. Prereq: Placement into MATH 143, 165, or higher; recommended: a previous high school or college course in programming or equivalent experience.
Introduction to object-oriented design and programming techniques. Symbolic and numerical computation, recursion and iteration, modularity procedural and data abstraction, and specifications and subtyping. Object-oriented techniques including encapsulation, inheritance and polymorphism. Imperative programming. Emphasis on principles of programming and object-oriented design through extensive practice in design, writing, running, debugging, and reasoning. Course intended for Com S majors. 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. Prereq: Minimum of C- in 227, credit or 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. Abstract data type specification and correctness. Collections and associated algorithms, such as stacks, queues, lists, trees. Searching and sorting algorithms. Graphs. Data on secondary storage. Analysis of 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.

(Cross-listed with INFAS). (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. F.S. Prereq: Credit or enrollment in MATH 141

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

DES 230. Design Thinking. 
(3-0) Cr. 3. F.S.
Introduction to the phenomenon of design thinking as it appears in various design fields, including methodologies of reasoning and problem solving; patterns of creativity and individual style; and the interaction of art, science, and technology.

DSN S 102. Design Studio I. 
(1-6) Cr. 4.
A core design studio course exploring the interaction of two-and three-dimensional design. Emphasis on fundamental skills and ideas shared across design disciplines. Investigation of creative process, visual order and materials, and development of critical thinking through studio projects and lectures. Includes study of precedents, contemporary design practices and disciplines in their cultural contexts.

DSN S 131. Design Representation. 
(1-6) Cr. 4.
An introduction to drawing through lecture and studio experiences. Focus on creative problem solving and communication in order to give visual form to ideas. Emphasis on perceptual, conceptual, and evaluative abilities through experiences that build eye, brain, and hand coordination. Explorations include drawing from observation and memory, working at various scales and duration, and using a variety of media and processes.

DSN S 183. Design Cultures. 
(3-0) Cr. 3.
A broad-based exploration of the dynamic relationship between design and culture, employing case study method to investigate particular examples of cultural production in contemporary society. Design processes and design works are presented as culturally, economically, environmentally, historically, ideologically, politically, and socially grounded events and artifacts.

(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.

(3-0) Cr. 3. F.S.SS.
Introduction to the phenomenon of design thinking as it appears in various design fields, including methodologies of reasoning and problem solving; patterns of creativity and individual style; and the interaction of art, science, and technology.

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

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 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.

Cr. 0. F.S. Prereq: Recommendation of English Department; placement in sections L and R is determined by examination; section S is open to all interested international students. Available P/OP to graduate students at their department's option

ENGL 099R. Strategies for Nonnative Speakers of English: Strategies for Reading. 
Cr. 0. F.S. Prereq: Recommendation of English Department; placement in sections L and R is determined by examination; section S is open to all interested international students. Available P/OP to graduate students at their department's option
ENGL 101B. English for Native Speakers of Other Languages: Academic English. (3-0) Cr. F.S. Prereq: Recommendation of English Department; placement in various sections is determined by examination. (See English Requirement for International Students in Index.) 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. 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: Recommendation of English Department; placement in various sections is determined by examination. (See English Requirement for International Students in Index.) 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. Credit from ENGL 101 does not count toward graduation.

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

ENGL 201. Introduction to Literature. (3-0) Cr. 3. Prereq: Credit in or exemption from 150 Study of selected examples of drama, poetry, short fiction, and the novel drawn from both British and American literature. Recommended for nonmajors.

ENGL 225. Survey of British Literature to 1800. (3-0) Cr. 3. Prereq: ENGL 250 Representative works of British literature from the origins to 1800 in historical, cultural, and literary contexts. Will include multiple genres.

ENGL 226. Survey of British Literature since 1800. (3-0) Cr. 3. Prereq: ENGL 250 Representative works from 1800 to the present in historical, cultural, and literary contexts. Will include multiple genres and may include texts that reflect and/or critique the impact and legacy of the British empire on its former colonies, i.e., postcolonial literature.

ENGL 237. Survey of Film History. (3-0) Cr. 3. Prereq: ENGL 250 A survey of the history of film, both U.S. and international, from the beginnings in the late nineteenth century to the present.

ENGL 240. Introduction to American Indian Literature. (Cross-listed with AM IN). (3-0) Cr. 3. F. Prereq: Credit in or exemption from ENGL 150 Appreciation of oral and written forms of American Indian literatures. Tropes and techniques in oral, visual and written texts. Focus on the role of American Indians in interdisciplinary approaches to modern social and environmental issues as expressed in literary works. Meets U.S. Diversity Requirement.

ENGL 250. Written, Oral, Visual, and Electronic Composition. (3-0) Cr. 3. F.S.SS. Prereq: ENGL 150 or exemption from ENGL 150; sophomore classification or exemption from ENGL 150; credit for or concurrent enrollment in LIB 160 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.

ENGL 275. Analysis of Popular Culture Texts. (Cross-listed with SP CM). (3-0) Cr. 3. F.S. Prereq: Credit in or equivalent of 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; credit or enrollment in MATH 165. 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.)

ENT 201. Introduction to Insects. (1-0) Cr. 1. F.S.SS. 5 weeks. Classroom section spring only. World Wide Web section of course offered spring and fall semesters. Biological and ecological aspects of insects.


ENV S 101. Environmental Geology: Earth in Crisis. (Cross-listed with GEOEL). (3-0) Cr. 3. F.S. An introduction to geologic processes and the consequences of human activity from local to global scales. Discussion of human population growth, resource depletion, pollution and waste disposal, global warming and ozone depletion, desertification, and geologic hazards such as earthquakes, landslides, flooding, and volcanism.

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.

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. Credit by examination in the Department of World Languages and Cultures for courses numbered 101, 102, 201, and 202 is available only to students who are not currently enrolled in the course. Credit by examination for other courses in the Department is normally not available.

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. Credit by examination in the Department of World Languages and Cultures for courses numbered 101, 102, 201, and 202 is available only to students who are not currently enrolled in the course. Credit by examination for other courses in the Department is normally not available. Meets International Perspectives Requirement.

FS NH 101. Food and the Consumer. (3-0) Cr. 3. F.S. Prereq: High school biology and chemistry or 3 credits each of biology and chemistry 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. Electronic communication from web emphasized for class reports, notes and assignments.
FS HN 110. Professional and Educational Preparation.
(1-0) Cr. 1. F.S.
Introduction to professional and educational development within the food science and human nutrition disciplines. Focus is on university and career acclimation, enhancement of communication skills, and portfolio development. Offered on a satisfactory-fail basis only.

FS HN 167. Introduction to Human Nutrition.
(3-0) Cr. 3. F.S.S.S. Prereq: High school biology or 3 credits of biology
Understanding and implementing present day knowledge of nutrition. The role of nutrition in the health and well being of the individual and family.

GEOL 100. The Earth.
(3-0) Cr. 3. F.S.S.S.
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. The Earth: Laboratory.
(0-2) Cr. 1. F.S. Prereq: Credit or enrollment in 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.

(Cross-listed with ENV S). (3-0) Cr. 3. F.S.
An introduction to geologic processes and the consequences of human activity from local to global scales. Discussion of human population growth, resource depletion, pollution and waste disposal, global warming and ozone depletion, desertification, and geologic hazards such as earthquakes, landslides, flooding, and volcanism.

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.

(1-0) Cr. 1. Repeatable, maximum of 2 times. F.
Introduction to Iowa geology through classroom lectures and up to four Saturday field trips to selected Iowa geological attractions. Students will learn basic geologic concepts such as geologic time, erosion and sedimentation, stratigraphy, glacial geology, and karst topography using Iowa examples.

GEOL 111. Geological Disasters.
(Cross-listed with ENV S). (1-0) Cr. 1. F.S.S.S.
Introduction to the catastrophic geologic processes that disrupt ecosystems and human activity. Includes a discussion on the role of plate tectonics, the hydrologic cycle, and humans as the driving forces behind selected case studies on volcanic eruptions, earthquakes, tsunamis, landslides, and floods. Summer - online only.

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.S.S.
Introduction to German language within the context of German culture; practice in the basic skills.

GER 201. Intermediate German I.
(4-0) Cr. 4. F. Prereq: GER 102
Review of grammar, selected readings, further practice in oral and written communication.

Meets International Perspectives Requirement.

GREEK 101. Elementary Ancient Greek I.
(4-0) Cr. 4. F.
Grammar and vocabulary of ancient Greek, within the context of Greek culture; reading knowledge through texts adapted from classical authors.

H S 105. First Aid and Emergency Care.
(1-2) Cr. 2. F.S.S.S.
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 preventing health problems. False and misleading advertising and effects of cultists and faddists on consumer health. Study of legislation and agencies concerned with consumer protection and health insurance.

H SCI 110. Orientation and Human Sciences Career Exploration.
(2-0) Cr. 2. F.S.
Orientation and adjustment to the university and college; policies and procedures; academic resources; and development of a long-term curriculum plan. Comprehensive approach to career development; intensive self-analysis; and in-depth examination of majors in Human Sciences. Required for all students declared as Open Option 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.

Meets U.S. Diversity Requirement

HD FS 102. Individual and Family Life Development.
(3-0) Cr. 3. F.S.S.S.
Development of individuals, families, and their reciprocal relationships as affected by external factors; examined within a framework of life-span developmental tasks (physical, cognitive, language, social, emotional).

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

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

HD FS 239. Housing and Consumer Issues.
(3-0) Cr. 3. F.S.
Introduction to factors affecting consumer and housing decisions of individuals and families, including housing issues such as housing quality, accessibility, affordability, neighborhood/housing contexts for families; and consumer issues such as 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 cultural, racial, ethnic, and social diversity. Roles of literature in the overall development of children. Literature selection and use. Meets U.S. Diversity Requirement

(3-0) Cr. 3. F.S.S.S.
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 present.
Meets International Perspectives Requirement.

HIST 221. Survey of United States History I.
(3-0) Cr. 3-5. 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.
(2-0) Cr. 2. F.S.
Growing plants in and around the home including requirements for growing house plants; plant propagation; designing and maintaining flower, fruit, and vegetable gardens; lawn, tree, and shrub maintenance.

(1-0) Cr. 1. F.S.
Demonstration and activities that illustrate principles of growing plants for the home garden. Topics include plant identification, propagation, selection, and management for indoor and outdoor gardens.

(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 enrollment in MATH 143

(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. Alt. SS., offered irregularly.
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.

KIN 252. Disciplines and Professions in Kinesiology and Health.
(1-0) Cr. 1. F.S. 
Overview of the various disciplines and professions that comprise the field of Kinesiology (the study of human movement) and help students determine the career option that best fits their interests.

KIN 253. Orientation in Kinesiology and Health.
(1-0) Cr. 1. F.S. Prereq: Concurrent enrollment or credit in KIN 252
Overview of ISU policies and procedures, academic advising purposes, degree requirements, program of study planning, and campus resources. Kinesiology and Health majors only. Offered on a satisfactory-fail basis only.

LAS 101. Orientation for Open Option and Preprofessional Students.
(1-0) Cr. 1. F.S.
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.

LAS 225. Introduction to Asian American Studies.
(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

LATIN 101. Elementary Latin I.
(4-0) Cr. 4. F.
Grammar and vocabulary of classical Latin, within the context of Roman culture; reading knowledge through texts adapted from classical authors.

LIB 160. Information Literacy.
(1-0) Cr. 1. F.S.SS. Prereq: For students whose native language is not English: Completion of ENGL 101 requirement.
Eight-week course required for undergraduate degree. Provides a solid understanding of information literacy and the research process with emphases on finding, evaluating, and using scholarly information; the ethical and legal framework related to information discovery use; and utilization of library discovery tools. 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.

(2-2) Cr. 3. F.S. Prereq: M E majors only. MATH 142 or satisfactory scores on Mathematics placement examinations; credit or enrollment in MATH 165.
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 M E 160, ENGR 160, Aer E 160, C E 160, CPR E 185, E E 185, S E 185 and I E 148 may count towards graduation.

(2-2) Cr. 3. F.S. Prereq: Satisfactory scores on mathematics placement assessments; credit or enrollment in MATH 142
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.

(1-0) Cr. 1. F. Prereq: Concurrent enrollment in M S 101L required
Examines the role of a Cadet in the Army Reserve Officer Training Corps and a Lieutenant in the United States Army. The course explores a military culture whose ultimate success is determined by the character and proficiency of its leaders. Instruction introduces students to the cultural heritage and history of the U.S. Army. Students will begin to understand the structure of the U.S. Army and how it functions as an organization and institution. The curriculum promotes the development of students' communication skills to enhance their ability to transmit ideas. The class examines how the Army's cultural values drive the development of leadership in the Officer Corps. Hands-on activities enable students to gain insight on the skills and abilities required of cadets and officers interacting with civilians and soldiers.

M S 101L. Basic Leadership Laboratory I.
(0-2) Cr. 1. F. Prereq: Concurrent enrollment in M S 101 required
Uses basic military training, missions and scenarios to provide a hands-on method of developing confidence and leadership skills. Students observe and participate in the rotation through various levels of leadership positions at the platoon and squad level within the Army command structure. This concept provides a constant learning environment as they learn to communicate effectively and work as a team while assigned to positions at various levels within the organization. Marching, rifle firing, and tactical patrolling; students gain confidence through rappelling and construction/use of rope bridges; and increase professional knowledge in areas such as personal 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.
MATH 181-MATH 182 may be counted towards graduation.

of MATH 151, MATH 160, the sequence MATH 165-MATH 166, or the sequence MATH 181-MATH 182 may be counted towards graduation.

MATH 151. Calculus for Business and Social Sciences.
(3-0) Cr. 3. F.S.SS.
Differential calculus, applications to max-min problems, integral calculus and (2-1) Cr. 3. F.S.

MATH 150. Discrete Mathematics for Business and Social Sciences.
(3-0) Cr. 3. F.S.SS. Prereq: Satisfactory performance on placement exam, 2 years of high school algebra, 1 year of geometry; or MATH 143

MATH 145. Applied Trigonometry.
(3-0) Cr. 3. F.S. Prereq: Satisfactory performance on placement exam, 2 years of high school algebra, 1 year of high school geometry; or minimum of C- in MATH 140

MATH 134. Preparation for Calculus.
(4-0) Cr. 4. F.S. Prereq: Satisfactory performance on placement exam. Preparation for MATH 160, 165, and 181. Functions, graphing, basic trigonometry, logarithms, exponentials. Emphasis on co-variational reasoning. Students in the College of Liberal Arts and Sciences may not count MATH 143 toward the General Education Requirements. Only one of MATH 143 and 145 may count toward graduation.

MATH 123. Calculus and Mathematical Modeling for the Life Sciences I.
(4-0) Cr. 4. F.S. Prereq: Satisfactory performance on placement exam, 2 years of high school algebra, 1 year of geometry. Integral calculus, applications of the integral, infinite series, parametric curves and polar coordinates. Only one of MATH 151, MATH 160, the sequence MATH 165-MATH 166, or the sequence MATH 181-MATH 182 may be counted towards graduation.

MATH 155. Survey of Calculus.
(4-0) Cr. 4. F.S.SS. Prereq: Satisfactory performance on placement exam, 2 years of high school algebra, 1 year of geometry; 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. Only one of MATH 151, MATH 160, the sequence MATH 165-MATH 166, or the sequence MATH 181-MATH 182 may be counted towards graduation.
(1-2) Cr. 2. F.S. Prereq: Ability to read elementary musical notation
Notation, recognition, execution and analysis of scales, intervals, triads, and rhythm; key signatures; time signatures; transposition. Open to non-majors only.

MUSIC 102. Introduction to Music Listening.
(3-0) Cr. 3. F.S.S.S.
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. Prereq: Open to all students by audition
Emphasis on significant extended compositions for wind and percussion instruments. Performances include formal concerts on campus and the annual tour.

MUSIC 112. Concert Band.
(0-2) Cr. 1. Repeatable. F.S. Prereq: Open to all students who have performed on a wind or percussion instrument in high school band or orchestra
Repertoire includes the broad spectrum of band music. Two concerts are presented each semester.

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

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).

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

(0.5-0) Cr. 1-2. Repeatable. F.S. Prereq: Audition, permission of instructor
Applied music for the general student.

MUSIC 141. Lyrica Women’s Choir.
(0-3) Cr. 1. Repeatable. F.S. Prereq: Open to all female students by audition
Large chorus; emphasis on fundamental vocal and choral skills, wide variety of literature. Campus concerts each semester.

MUSIC 151A. Oratorio Chorus: Cantamus Women’s Choir.
(0-3) Cr. 1. Repeatable. F.S. Prereq: Open to all students by audition
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.

MUSIC 151B. Oratorio Chorus: Statesmen Men’s Choir.
(0-3) Cr. 1. Repeatable. F.S. Prereq: Open to all students by audition
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.

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

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

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.

Cr. 1. F.
Orientation to the University and to the Department of Natural Resource Ecology and Management. Discussion of departmental learning outcomes, strategies for academic success and academic planning. Offered on a satisfactory-fail basis only.

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.

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

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

(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 111. General Physics.
(4-2) Cr. 5. F.S.S.S. Prereq: 1 1/2 years of high school algebra, 1 year of geometry, 1 semester of trigonometry
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.

PHYS 112. General Physics.
(4-2) Cr. 5. F.S.S.S. Prereq: PHYS 111
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 115. Physics for the Life Sciences.
(4-0) Cr. 4. F.S. Prereq: high school: 1 1/2 yr. algebra, 1 yr. geometry, 1 semester trigonometry
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.

(2-2) Cr. 3. F.
Introductory level course on sound for nonphysicists majors. Properties of pure tones and harmonics; human perception of sound; room acoustics; scales; production, and analysis of musical by voice, string, woodwind, brass, and percussion instruments. Not suitable to meet a general physics requirement for natural science majors
PHYS 221. Introduction to Classical Physics I.
(4.5-1) Cr. 5. F.S.SS. Prereq: Proficiency in algebra, trigonometry, vector manipulation, and topics covered in Math 165, and credit or enrollment in MATH 166.
For engineering and science majors. 3 hours of lecture each week plus 3 recitations and 1 laboratory every 2 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.

PHYS 222. Introduction to Classical Physics II.
(4-2) Cr. 5. F.S.SS. Prereq: PHYS 221 OR PHYS 241, MATH 166
3 hours of lecture each week plus 1 recitation and 1 laboratory each week. Electric forces and fields, Electrical currents; DC circuits. Magnetic forces and fields: LR, LC, LCR circuits; Maxwell's equations; ray optics and image formation; wave optics; topics in modern physics.

(3-0) Cr. 3. F.S.SS.
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 241. Introduction to Comparative Government and Politics.
(3-0) Cr. 3. F.S.
Basic concepts and major theories; application to selected political systems, including non-western political systems.
Meets International Perspectives Requirement.

POL S 251. 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.

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 enrollment in PSYCH 101 Laboratory to accompany 101.

PSYCH 111. Orientation to Psychology.
Cr. 0.5. F.S.
Program requirements and degree/career options. Required of psychology majors. Offered on a satisfactory-fail basis only.

(0-2) Cr. 1. F.S.
Efficient methods of time management, goal setting and motivation, and other learning strategies such as note-taking, reading, and test preparation. Offered on a satisfactory-fail basis only.

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. Introduction to World Religions.
(3-0) Cr. 3. F.S.SS.
An introduction to the academic study of religions, including myths, beliefs, rituals, values, social forms. Examples chosen from oral cultures and major religions of the world.
Meets International Perspectives Requirement.

(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 220. Introduction to the Bible.
(3-0) Cr. 3. F.S.
Basic overview of the contents of the Old and New Testament in light of their ancient socio-historical background, and with attention to a variety of interpretations and relevance to modern American society.

RELIG 280. Introduction to 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. Elementary Russian I.
(4-0) Cr. 4. F.
Introduction to the Russian language, grammar and syntax. Practice in the four basic skills (listening, speaking, reading, and writing) within the context of 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.

Cr. R.
Introduction to the procedures, policies, and resources of Iowa State University and the department of Computer Science and Electrical and Computer Engineering. Information on engineering and computer-based professions.

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.

(3-0) Cr. 3. F.S.SS. Prereq: SOC 134
Analysis of intimate relationships among couples using a sociological perspective. Attention is given to singleness; dating and courtship; sexuality; mate selection, cohabitation, and marriage. Relationship quality, communication, conflict and dissolution of these types of relationship will also be explored.

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.
Meets U.S. Diversity Requirement

(Cross-listed with CJ ST). (3-0) Cr. 3. F. Prereq: SOC 134
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. Great Speakers and Speeches.  
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. Meets U.S. Diversity Requirement

SP CM 275. Analysis of Popular Culture Texts.  
(Cross-listed with ENGL). (3-0) Cr. 3. F.S. Prereq: Credit in or equivalent of 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 in a Diverse Society.  
(3-0) Cr. 3. F.S. Prereq: C I 204  
An overview of students with diverse learning needs, including legal foundations. Emphasis on early identification; educational programming, services and strategies; and preparation for community living in a heterogeneous society. Meets U.S. Diversity Requirement

SPAN 101. Elementary Spanish I.  
(4-0) Cr. 4. F.SS.  
A communicative approach to grammar and vocabulary within the context of Hispanic culture.

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

(4-0) Cr. 4. F. Prereq: 4 years of high school Spanish, two years of Spanish at a community college, Spanish 201, or equivalent by placement  
Bridge course between 200- and 300-level Spanish courses to prepare students for 300 level courses. Focus on application of advanced grammatical concepts within the context of Hispanic culture. Designed for students who want to continue at the 300 level. Taught in Spanish. Meets International Perspectives Requirement.

(3-2) Cr. 4. F.S.SS. Prereq: 1 1/2 years of high school algebra  
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. 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. Prereq: 1 1/2 years of high school algebra  
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. 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 105. Introduction to Statistics for Engineers.  
(3-0) Cr. 3. F.S. Prereq: MATH 165 (or MATH 165H)  
Statistical concepts with emphasis on engineering applications. Data collection; descriptive statistics; probability distributions and their properties; elements of statistical inference; regression; statistical quality control charts; use of statistical software; team project involving data collection, description and analysis. Credit for only one of the following courses may be applied toward graduation: STAT 101, STAT 104, STAT 105, STAT 201, or STAT 226. Credit for both STAT 105 and STAT 305 may not be applied for graduation.

THTRE 106. Introduction to the Performing Arts.  
(3-0) Cr. 3. F.S.SS.  
An audience oriented, broad-based, team-taught survey of the performing arts which emphasizes theatre and includes segments on television, radio, film, dance, and music.

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 I.  
(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: MATH 140 or higher (can be taken concurrently)  
Solving technology problems and presenting solutions through technical reports. Unit conversions, unit factor method, SI units, significant digits, graphing and curve fitting. Use of spreadsheet programs to solve and present technology problems. Solution of technology problems using computer programming languages.

TSM 116. Introduction to Design in Technology.  
(2-2) Cr. 3. F.S.  
Use of parametric solid modeling software to model, and document, parts and assemblies. Includes national and international standards for documentation, design projects, and teamwork. Free-hand sketching techniques will be covered.

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

W S 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. Meets U.S. Diversity Requirement

W S 201. Introduction to Women's Studies.  
(3-0) Cr. 3. F.S.  
Introduction to the interdisciplinary field of Women's 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