

Interdisciplinary Programs

2012-2013

I. SIGNIFICANT TRENDS:

The Interdisciplinary Programs are continually changing and refining their courses to meet the needs of the programs. Often the interdisciplinary courses are cross listed because of the strong connections to several programs.

II. CURRICULA, MAJORS, MINORS ADDED OR DROPPED:

Majors Added: None

Minors Added: None

Certificates Added: None

Majors, Minors, Certificates Dropped: None

Please see the attached spreadsheets for a summary of the new, dropped, and changed courses. The tabs at the bottom of the worksheet indicate the summary chart and the detail of the catalog changes.

X. JUSTIFICATION FOR NEW COURSES (attach Excel spreadsheet)

Program	Course number(s)	Course name 9s)	Justification
C DEV	521 527 590	Housing and Development Public and Non-Profit Budgeting Special Topics in Community Develop.	Developed to meet expanding inter-university programs related to GPIDEA.
ENSCI	488/588	GIS for Geoscientists	Cross listed with Agronomy and Geology to meet the needs of the students.
HCI	580	Virtual Environments	Cross listed with ME to meet needs of developing fields.
HCI	585	Developmental Robotics	Cross listed with CPR E to meet needs of developing new fields.
NUTRS	549	Advanced Vertebrate Physiology I	Offered to meet needs of graduate students.
NUTRS	620	Advanced Nutrition and Metabolism - Energy	Offered to meet needs of graduate students
S E	494	Software Engineering Portfolio Development.	Undergraduate class.
W S	494	Women/Gender in Art	Offered for non-major graduate credit.
GR ST	565	Responsible Conduct of Research in Science and Engineering	Developed a course listing that would meet the needs of all graduate programs. The courses in specific program areas were dropped.
GR ST	566	Communications in Science	Same as above.
GR ST	567	Time Management and Mentoring	Same as above.
GR ST	568	The Interview Process	Same as above.
GR ST	569	Grant Writing	Same as above.
GR ST	570	Teaching	Same as above.

Iowa State University - 2012-2013 Catalog Changes

2012-2013		2011-2012		DataElement	ChangeFrom	ChangeTo
DEPT	CRSE	DEPT	CRSE			
C DEV	521			Add Course		C DEV 521. Housing and Development. (-) Cr. 3. S. Prereq: None.. Review and evaluation of historical and current housing issues, production, and financial systems, including consideration of racial, ethnic, income, and gender issues as they relate to the role of housing developments and programs in
C DEV	527			Add Course		C DEV 527. Public and Non-Profit Budgeting. (-) Cr. 3. SS. Prereq: The purpose of this course is to introduce students to the fundamental theories and practices of budgeting in the public and non-profit sectors. Topics covered include overview of budgeting and budget reform, taxation, expenditures, budget preparation and adoption, budget
C DEV	590			Add Course		C DEV 590. Special Topics in Community Development. Cr. 1-3. F.S.SS. Special topics in Community Development. Independent Study, must
ENSCI	488			Add Course		ENSCI 488. GIS for Geoscientists II. (Dual-listed with 588.) (Cross-Listed with AGRON, GEOL). (2-2) Cr. 3. S. Prereq: GIS course, such as GEOL 452, CRP 451, CRP 452, NREM 345, NREM 446, AE 408 or equivalent. GIS course with focus on the spatial analysis and modeling of raster data and triangulated irregular network (TIN) data. Uses ArcGIS and various extensions, such as Spatial Analyst, 3D Analyst, and ArcScene. Includes practical exercises
ENSCI	588			Add Course		ENSCI 588. GIS for Geoscientists II. (Dual-listed with 488.) (Cross-Listed with AGRON, GEOL). (2-2) Cr. 3. S. Prereq: GIS course, such as GEOL 452, CRP 451, CRP 452, NREM 345, NREM 446, AE 408 or equivalent. GIS course with focus on the spatial analysis and modeling of raster data and triangulated irregular network (TIN) data. Uses ArcGIS and various extensions, such as Spatial Analyst, 3D Analyst, and ArcScene. Includes practical exercises

ENV S	111			Add Course	ENV S 111. Geological disasters. (Cross-Listed with GEOL). (1-0) Cr. 1. F.S.SS. 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,
HCI	580			Add Course	HCI 580. Virtual Environments, Virtual Worlds, and Application. (Cross-Listed with M E). (3-) Cr. 3. F. Prereq: Senior or Graduate status.. A systematic introduction to the underpinnings of Virtual Environments (VE), Virtual Worlds, advanced displays and immersive technologies; and an
HCI	585			Add Course	HCI 585. Developmental Robotics. (Cross-Listed with CPR E). (3-) Cr. 3. S. Prereq: knowledge of C/C++ programming language.. An introduction to the emerging interdisciplinary field of Developmental Robotics, which crosses the boundaries between robotics, artificial intelligence, developmental psychology, and philosophy. The main goal of this field is to create autonomous robots that are more intelligent, more adaptable, and more useful than the
NUTRS	549			Add Course	NUTRS 549. Advanced Vertebrate Physiology I. (Cross-Listed with AN S, KIN). (-) Cr. 4. F. Prereq: BIOL 335; credit or enrollment in BBMB 404 or BBMB 420. Neurophysiology, sensory systems,
NUTRS	620			Add Course	NUTRS 620. Advanced Nutrition and Metabolism - Energy. (Cross-Listed with AN S). (2-0) Cr. 2. S. Prereq: BBMB 405. Energy constituents of feedstuffs and energy needs of animals as related to cellular biochemistry and physiology. Interpretations of
S E	494			Add Course	S E 494. Software Engineering Portfolio Development. (0-0) Cr. R. F.S. Prereq: Credit or enrollment in S E 491. Portfolio assessment for Software Engineers. Guidelines and Advice to improve software engineering portfolios and to better

W S	494			Add Course		W S 494. Women/Gender in Art. (Cross-Listed with DSN S, ART H). (3-0) Cr. 3. Issues of gender related to cultural environments from the Middle Ages to contemporary times in Europe and America. Feminist movement beginning in the 1970s and specifically gender issues in art that are becoming widespread in the artistic culture. Nonmajor graduate
GR ST	565			Add Course due to Course Number Change including Dept		GR ST 565. Responsible Conduct of Research in Science and Engineering. (1-0) Cr. 1. F.S. Prereq: Graduate classification. Ethical and legal issues facing researchers in the sciences and engineering.
GR ST	566			Add Course due to Course Number Change including Dept		GR ST 566. Communications in Science. (0.5-0) Cr. 0.5. S. Prereq: graduate classification. Reading and reviewing manuscripts; publishing papers; oral and
GR ST	567			Add Course due to Course Number Change including Dept		GR ST 567. Time Management and Mentoring. (0.5-0) Cr. 0.5. F. Prereq: graduate classification. Balancing life and career; mentoring; lab
GR ST	568			Add Course due to Course Number Change including Dept		GR ST 568. The Interview Process.. (0.5-0) Cr. 0.5. S. Prereq: graduate classification.. Applying and interviewing for academia, industry and government.
GR ST	569			Add Course due to Course Number Change including Dept		GR ST 569. Grant Writing.. (1-0) Cr. 1. F. Prereq: at least two prior years of graduate classification.. Writing a winning proposal.
GR ST	570			Add Course due to Course Number Change including Dept		GR ST 570. Teaching.. (0.5-0) Cr. 0.5. S. Prereq: graduate classification.. Preparation of a teaching portfolio and course materials; lecturing, technology.
U ST	104			Add Course due to Course Number Change including Dept		U ST 104. Personal Career Development. (2-0) Cr. 2. F.S. Prereq: 12 credits of ISU coursework. 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;
GR ST	565	PL P	565A	Change Course Number/Different Department	PL P 565A	GR ST 565

GR ST	566	PL P	565C	Change Course Number/Different Department	PL P 565C	GR ST 566
GR ST	567	PL P	565D	Change Course Number/Different Department	PL P 565D	GR ST 567
GR ST	568	PL P	565E	Change Course Number/Different Department	PL P 565E	GR ST 568
GR ST	569	PL P	565F	Change Course Number/Different Department	PL P 565F	GR ST 569
GR ST	570	PL P	565G	Change Course Number/Different Department	PL P 565G	GR ST 570
U ST	104	LAS	104	Change Course Number/Different Department	LAS 104	U ST 104
LING	309			Contact Hours Change	(2-2)	(3-0)
BIOL	381			Credit Hours Change	Cr. 3	Cr. 3-4
CL ST	383H			Credit Hours Change	Cr. 3	Cr. 3-4
ENSCI	381			Credit Hours Change	Cr. 3	Cr. 3-4
ENSCI	409			Credit Hours Change	Cr. 2	Cr. 3
ENSCI	509			Credit Hours Change	Cr. 2	Cr. 3
ENSCI	581			Credit Hours Change	Cr. 3	Cr. 3-4
ENV S	381			Credit Hours Change	Cr. 3	Cr. 3-4
GR ST	565			Credit Hours Change	Cr. arr.	Cr. 1
GR ST	566			Credit Hours Change	Cr. arr.	Cr. 0.5
GR ST	567			Credit Hours Change	Cr. arr.	Cr. 0.5
GR ST	568			Credit Hours Change	Cr. arr.	Cr. 0.5
GR ST	569			Credit Hours Change	Cr. arr.	Cr. 1
GR ST	570			Credit Hours Change	Cr. arr.	Cr. 0.5
HCI	407H			Credit Hours Change	Cr. 3	Cr. 3-4
HCI	409H			Credit Hours Change	Cr. 3	Cr. 3-4
NUTRS	561			Credit Hours Change	Cr. 3-4	Cr. 4
AM IN	426			Cross List Change	DSN S, ARCH	ARCH, DSN S
CL ST	383H			Cross List Change	ART H, DSN S	DSN S, ART H, ART H
ENSCI	406			Cross List Change	AGRON, MTEOR	MTEOR, AGRON
ENSCI	505			Cross List Change	AGRON, MTEOR	MTEOR, AGRON
ENV S	293			Cross List Change	C R P, DSN S	DSN S, C R P

ENV S	484			Cross List Change	C R P, DSN S	DSN S, C R P
ENV S	491			Cross List Change	C R P, DSN S, L A	DSN S, C R P, L A
GERON	378			Cross List Change	ECON, HD FS	ECON, HD FS, HD FS
LING	305			Cross List Change	SP CM, COMST	SP CM, COMST, COMST
NUTRS	519			Cross List Change	FS HN, TOX	TOX, FS HN
NUTRS	552			Cross List Change	AN S, KIN	KIN, AN S
TOX	419			Cross List Change	FS HN, MICRO	MICRO, FS HN
TOX	420			Cross List Change	FS HN, MICRO	MICRO, FS HN
TOX	626			Cross List Change	FS HN, MICRO	MICRO, FS HN
TOX	627			Cross List Change	FS HN, MICRO	MICRO, FS HN
W S	594			Cross List Change	ART H, DSN S	DSN S, ART H
AF AM	347			Description Change	Intensive study of African American writing, possibly including slave narratives, Harlem Renaissance works, literature of social protest, and forerunners of contemporary works that reveal key thematic,	Literature by African Americans, which may include study of individual authors, movements, themes, genres.
AM IN	426			Description Change	History, theory, and principles of Native American/American Indian architecture, landscape architecture and planning considering relationships to the culture, visual arts, site, and surroundings. Credit counts toward fulfillment of Studies in	History, theory, and principles of Native American/American Indian architecture, landscape architecture and planning considering relationships to the culture, visual arts, site, and surroundings. Credit counts toward fulfillment of Studies in
BIOL	173			Description Change	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. Non-majors only.	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. Intended primarily for
BIOL	204			Description Change	Survey of the major groups of organisms and biological systems. Definition, measurements, and patterns of distribution of organisms. Sources of information about biodiversity. Not intended for major credit in the biological sciences. Half semester	Survey of the major groups of organisms and biological systems. Definition, measurements, and patterns of distribution of organisms. Sources of information about biodiversity. Intended primarily for non-majors; available to biology majors for elective
BIOL	328			Description Change	Survey of macromolecular and ultrastructural organization of animal cell and membrane structures, including recent molecular discoveries in areas of genomics and proteomics involved with cell growth and cell interactions. Emphasis on selected	Survey of molecular, genetic and cellular aspects of human diseases. Fundamental concepts of cell biology and how they are linked to the pathologies of different classes of human diseases. Recent scientific advances with an emphasis on new
BIOL	381			Description Change	Introduction to the structure and function of natural environmental systems. Systems approach to the analysis of material and energy flows in natural environmental systems and the primary	Introduction to the structure and function of natural environmental systems. Emphasis on the analysis of material and energy flows in natural environmental systems and the primary environmental factors

BRT	610			Description Change	Properties of enzymes important in food processing including flavor, texture and color and in biofuels & bioprocessing. Quantitative evaluation of substrates, enzyme inhibitors, pH, pressure and temperature on enzyme activity. Experimental determination of specificity and mechanisms important to food and bioprocessing biochemistry. Techniques to purify	Properties of enzymes important in food processing including flavor, texture and color and in biofuels & bioprocessing. Quantitative evaluation of substrates, enzyme inhibitors, pH, pressure and temperature on enzyme activity. Experimental determination of specificity and mechanisms important to food and bioprocessing biochemistry. Techniques to purify
CL ST	383H			Description Change	Greek art from Neolithic through Hellenistic periods. Roman art from the traditional founding to the end of	Greek art from Neolithic and Hellenistic periods. Roman art from the traditional founding to the end of
EEB	585			Description Change	Annual field trip to a region of North America to study the major terrestrial and aquatic ecosystem types of the region. Report required.	Annual field trip to a region of North America to study the major terrestrial and aquatic ecosystem types. Report required.
ENSCI	360			Description Change	Burras and Killorn. Application of soil science to contemporary environmental problems; comparison of the impacts that different management strategies have on short- and long-term environmental quality and land development. Emphasis on participatory	Burras. Application of soil science to contemporary environmental problems; comparison of the impacts that different management strategies have on short- and long-term environmental quality and land development. Emphasis on participatory learning
ENSCI	381			Description Change	Introduction to the structure and function of natural environmental systems. Systems approach to the analysis of material and energy flows in natural environmental systems and the primary	Introduction to the structure and function of natural environmental systems. Emphasis on the analysis of material and energy flows in natural environmental systems and the primary environmental factors
ENSCI	406			Description Change	Arritt. Distribution and causes of different climates around the world. Effects of climate and climate variations on human activities including society, economy and agriculture. Current issues such as climate change and international efforts to assess and mitigate the consequences of a changing	Arritt. Distribution and causes of different climates around the world. Effects of climate and climate variations on human activities including society, economy and agriculture. Current issues such as climate change and international efforts to assess and mitigate the consequences of a changing
ENSCI	409			Description Change	Introduction to field methods used in groundwater investigations. In-field implementation of pumping tests, slug tests, monitoring well installation and drilling techniques, geochemical and water quality sampling, seepage meters, minipiezometers, stream gaging, electronic instrumentation for data collection, and geophysics. Field trips to investigate water	Introduction to field methods used in groundwater investigations. In-field implementation of pumping tests, slug tests, monitoring well installation and drilling techniques, geochemical and water quality sampling, seepage meters, minipiezometers, stream gaging, and electronic instrumentation for data collection. Field trips to investigate water resource,
ENSCI	451			Description Change	Seismic, gravity, magnetic, resistivity, electromagnetic, and ground-penetrating radar techniques for shallow subsurface investigations and imaging. Data interpretation methods. Lab emphasizes computer interpretation packages. Field	Seismic, gravity, magnetic, resistivity, electromagnetic, and ground-penetrating radar techniques for shallow subsurface investigations and imaging. Data interpretation methods. Lab emphasizes computer interpretation packages. Field

ENSCI	459			Description Change	Thompson. An introduction to the chemical properties of soils, chemical reactions and transformations in soils and surface waters, and their impact on the environment. Topics include solution chemistry in soils and surface waters, solid-phase composition of soils, reactions at the solid-solution	Thompson. An introduction to the chemical properties of soils, chemical reactions and transformations in soils and surface waters, and their impact on the environment. Topics include solution chemistry in soils and surface waters, solid-phase composition of soils, reactions at the solid-solution
ENSCI	463			Description Change	Relationships between soil formation, geomorphology, and environment. Soil description, classification, geography, mapping, and	Burras. Relationships between soil formation, geomorphology, and environment. Soil description, classification, geography, mapping, and
ENSCI	479			Description Change	Study of surficial processes in modern and ancient geological environments. Topics include weathering, sediment transport, and landform genesis with emphasis on fluvial, glacial, hillslope, eolian, and coastal processes. Applications to engineering and environmental problems. Laboratory emphasizes	The study of physical processes that shape Earth's surface. Topics include weathering, sediment transport, and landform genesis with emphasis on fluvial, glacial, hillslope, eolian, and coastal processes. Applications to engineering and environmental problems. Laboratory includes
ENSCI	505			Description Change	Hornbuckle. A description of the physical microenvironment in which organisms live. Emphasis on the movement of energy (heat and radiation) and mass (water and carbon) among organisms, the soil, and atmosphere. Applications to humans, other animals, plants, and plant	Hornbuckle. A description of the physical microenvironment in which organisms live. Emphasis on the movement of energy (heat and radiation) and mass (water and carbon) among organisms, the soil, and atmosphere. Applications to humans, other animals, plants, and plant
ENSCI	509			Description Change	Introduction to field methods used in groundwater investigations. In-field implementation of pumping tests, slug tests, monitoring well installation and drilling techniques, geochemical and water quality sampling, seepage meters, minipiezometers, stream gaging, electronic instrumentation for data collection, and geophysics. Field trips to investigate water	Introduction to field methods used in groundwater investigations. In-field implementation of pumping tests, slug tests, monitoring well installation and drilling techniques, geochemical and water quality sampling, seepage meters, minipiezometers, stream gaging, and electronic instrumentation for data collection. Field trips to investigate water resource,
ENSCI	559			Description Change	Thompson. An introduction to the chemical properties of soils, chemical reactions and transformations in soils and surface waters, and their impact on the environment. Topics include solution chemistry in soils and surface waters, solid-phase composition of soils, reactions at the solid-solution interface, chemical-equilibrium speciation programs,	Thompson. An introduction to the chemical properties of soils, chemical reactions and transformations in soils and surface waters, and their impact on the environment. Topics include solution chemistry in soils and surface waters, solid-phase composition of soils, reactions at the solid-solution interface, chemical-equilibrium speciation programs,
ENSCI	563			Description Change	Sandor. Relationships between soil formation, geomorphology, and environment. Soil description, classification, geography, mapping, and	Burras. Relationships between soil formation, geomorphology, and environment. Soil description, classification, geography, mapping, and

ENSCI	579			Description Change	Study of surficial processes in modern and ancient geological environments. Topics include weathering, sediment transport, and landform genesis with emphasis on fluvial, glacial hillslope, eolian, and coastal processes. Applications to engineering and environmental problems. Laboratory emphasizes	The study of physical processes that shape Earth's surface. Topics include weathering, sediment transport, and landform genesis with emphasis on fluvial, glacial, hillslope, eolian, and coastal processes. Applications to engineering and environmental problems. Laboratory includes
ENSCI	581			Description Change	Introduction to the structure and function of natural environmental systems. Systems approach to the analysis of material and energy flows in natural environmental systems and the primary	Introduction to the structure and function of natural environmental systems. Emphasis on the analysis of material and energy flows in natural environmental systems and the primary environmental factors
ENV S	173			Description Change	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.	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. Intended primarily for
ENV S	204			Description Change	Survey of the major groups of organisms and biological systems. Definition, measurements, and patterns of distribution of organisms. Sources of information about biodiversity. Not intended for major credit in the biological sciences. Half semester	Survey of the major groups of organisms and biological systems. Definition, measurements, and patterns of distribution of organisms. Sources of information about biodiversity. Intended primarily for non-majors; available to biology majors for elective
ENV S	320			Description Change	Women's relationships with the earth, non-human nature, and other humans. The course explores the connections between the mastery of women and the mastery of nature; origins of ecofeminism and its relation to the science of ecology and to other branches of feminist philosophies. Critique of modern science, technology, political systems as well as solutions will be included.	Women's relationships with the earth, non-human nature, and other humans. The course explores the connections between societyÇÖs treatment of women and nature; origins of ecofeminism and how it relates to the science of ecology, conventional and sustainable agriculture as well as how ecofeminism relates to other branches of feminist philosophy. Evaluation and critique of modern science,
ENV S	324			Description Change	Renewable and non-renewable energy resources. Origin, occurrence, and extraction of fossil fuels. Nuclear, wind, and solar energy. Energy efficiency. Environmental effects of energy production and use, including air pollution, acid precipitation, groundwater contamination, nuclear waste disposal, and global climate change.	Renewable and non-renewable energy resources. Origin, occurrence, and extraction of fossil fuels. Nuclear, wind,geothermal, biomass, hydroelectric, and solar energy. Biofuels. Energy efficiency. Environmental effects of energy production and use, including air pollution, acid precipitation, coal ash, mountaintop removal mining, oil drilling, hydraulic fracturing, groundwater contamination, nuclear waste disposal, and global climate change. Carbon

ENV S	381			Description Change	Introduction to the structure and function of natural environmental systems. Systems approach to the analysis of material and energy flows in natural environmental systems and the primary	Introduction to the structure and function of natural environmental systems. Emphasis on the analysis of material and energy flows in natural environmental systems and the primary environmental factors
ENV S	424			Description Change	Inquiry into ethical issues and environmental consequences of horticultural cropping systems, production practices and managed landscapes. Emphasis on systems that are resource efficient, environmentally sound, socially acceptable, and	Inquiry into ethical issues and environmental consequences of horticultural cropping systems, production practices and managed landscapes. Emphasis on systems that are resource efficient, environmentally sound, socially acceptable, and
GENET	690			Description Change	Research presentations by students to improve their ability to: orally present scientific work in a clear and meaningful way, critically evaluate oral presentations, and give and receive constructive criticism.	Research presentations by students to improve their ability to: orally present scientific work in a clear and meaningful way, critically evaluate oral presentations, and give and receive constructive criticism. Students may enroll in one seminar per
GERON	378			Description Change	Economic status of the aging, retirement planning and the retirement decision, role of Social Security, public transfer programs for the elderly, intrafamily transfers to/from the elderly, private pensions, financing medical care and housing for the elderly,	Economic well-being in the context of demographic change, the present and future of social security, family retirement needs analysis, investment strategies and characteristics of retirement plans, helping others to work towards financial security,
GR ST	565			Description Change	Professional, ethical and legal issues facing scientists and engineers in academia. Offered in	Ethical and legal issues facing researchers in the sciences and engineering.
GR ST	566			Description Change	Professional, ethical and legal issues facing scientists and engineers in academia. Offered in	Reading and reviewing manuscripts; publishing papers; oral and poster presentations.
GR ST	567			Description Change	Professional, ethical and legal issues facing scientists and engineers in academia. Offered in	Balancing life and career; mentoring; lab management
GR ST	568			Description Change	Professional, ethical and legal issues facing scientists and engineers in academia. Offered in	Applying and interviewing for academia, industry and government.
GR ST	569			Description Change	Professional, ethical and legal issues facing scientists and engineers in academia. Offered in	Writing a winning proposal.
GR ST	570			Description Change	Professional, ethical and legal issues facing scientists and engineers in academia. Offered in	Preparation of a teaching portfolio and course materials; lecturing, technology.
HCI	407			Description Change	Animation techniques using the computer and available software. Principles of character animation. Prior knowledge of modeling, lighting, texturing and rendering with available software is assumed.	Animation techniques using the computer and available software. Principles of character animation. Prior knowledge of modeling, lighting, texturing and rendering with available software is assumed.
HCI	407H			Description Change	Animation techniques using the computer and available software. Principles of character animation. Prior knowledge of modeling, lighting, texturing and rendering with available software is assumed.	Animation techniques using the computer and available software. Principles of character animation. Prior knowledge of modeling, lighting, texturing and rendering with available software is assumed.

HCI	409			Description Change	"Independent project based creation and development of ""frivolous and non-frivolous"" computer games in a cross disciplinary team. Projects require cross-disciplinary teams. Aspects of Indie development and computer/video game history	"Independent project based creation and development of ""frivolous and non-frivolous"" computer games in a cross-disciplinary team. Projects require cross-disciplinary teams. Aspects of Indie development and computer/video game
HCI	409H			Description Change	"Independent project based creation and development of ""frivolous and non-frivolous"" computer games in a cross disciplinary team. Projects require cross-disciplinary teams. Aspects of Indie development and computer/video game history	"Independent project based creation and development of ""frivolous and non-frivolous"" computer games in a cross-disciplinary team. Projects require cross-disciplinary teams. Aspects of Indie development and computer/video game
LING	286			Description Change	Development of basic skills in the use and understanding of signed English, a modification of American Sign Language. Overview of the types, causes and consequences of hearing impairment, deaf culture and the education of hearing-impaired children.	Learn to communicate with the deaf using Signed English and Signed Pidgin English. Other topics covered include types, causes, and consequences of hearing loss, hearing technology (hearing aids, assistive listening devices, and cochlear implants), education of hearing-impaired children, Deaf culture,
LING	305			Description Change	The study of symbolic processes and how meaning is conveyed in words, sentences, and utterances; discussion of modern theories of meaning; and an exploration of relationships among language,	The study of symbolic processes and how meaning is conveyed in words, sentences, and utterances; discussion of modern theories of meaning; and an exploration of relationships among language,
LING	309			Description Change	Language as a human attribute; language versus animal communication; human communication in cultural context; paralanguage, kinesics, proxemics, artifacts as communication; language and culture; cross-cultural sociolinguistics; ethnoscience; and language policies. Participatory lab: focus on	Introduction to study of language, culture and society from an anthropological perspective. Focus on language and thought, ethnography of speaking, discourse and narrative, writing and literacy, and media communication. Discussion of key theories and methods of linguistic anthropology.
MCDB	676			Description Change	Analysis of the biochemical processes involved in expression of eucaryotic genes and the regulation thereof, including RNA polymerase, transcriptional regulatory proteins, enhancers and silencers, chromosome structure, termination, RNA processing, RNA transport, RNA turnover,	Analysis of the biochemical processes involved in expression of eucaryotic genes and the regulation thereof, including RNA polymerase, transcriptional regulatory proteins, enhancers and silencers, chromosome structure, termination, RNA processing, RNA transport, RNA turnover, small
STB	592			Description Change	Occurrence and management of diseases during seed production, harvest, conditioning, storage, and planting. Emphasis on epidemiology, disease management in the field, seed treatment, effects of conditioning on seed health, and seed health testing.	Munkvold. Occurrence and management of diseases during seed production, harvest, conditioning, storage, and planting. Emphasis on epidemiology, disease management in the field, seed treatment, effects of conditioning on seed health, and seed
TOX	519			Description Change	Basic principles of toxicology. Toxicants in the food supply: modes of action, toxicant defense systems, toxicant and nutrient interactions, risk assessment.	Basic principles of toxicology. Toxicants in the food supply: modes of action, toxicant defense systems, toxicant and nutrient interactions, risk assessment.

TOX	526			Description Change	Study of toxicological diseases of domestic animals emphasizing clinical recognition, circumstances of poisoning, differential diagnosis with clinical and laboratory data, therapeutic procedures, preventive management and public health implications.	Study of toxicological diseases of animals emphasizing clinical recognition, circumstances of poisoning, differential diagnosis with clinical and laboratory data, therapeutic procedures, preventive management and public health implications.
TOX	565			Description Change	Statistical methods useful for biostatistical problems. Topics include analysis of cohort studies, case-control studies and randomized clinical trials, techniques in the analysis of survival data and longitudinal studies, approaches to handling missing data, and meta-analysis. Examples will come from recent studies in cancer, AIDS, heart disease,	Statistical methods useful for biostatistical problems. Topics include analysis of cohort studies, case-control studies and randomized clinical trials, techniques in the analysis of survival data and longitudinal studies, approaches to handling missing data, and meta-analysis. Examples will come from recent studies in cancer, AIDS, heart disease,
TOX	627			Description Change	"Provides an overview of rapid microbial detection methods for use in foods. Topics include historical aspects of rapid microbial detection, basic categories of rapid tests (phenotypic, genotypic, whole cell, etc.), existing commercial test formats and kits, automation in testing, sample preparation and ""next	"Provides an overview of rapid microbial detection methods for use in foods. Topics include historical aspects of rapid microbial detection, basic categories of rapid tests (phenotypic, genotypic, whole cell, etc.), existing commercial test formats and kits, automation in testing, sample preparation and ""next
U ST	104			Description Change	Comprehensive approach to personal career development; intensive self-analysis; utilization of a computerized career exploration system; contact with area professionals; examination of work in modern society and the impact of technology on the future of work; exposure to job search skills necessary for career choice implementation.	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;
W S	320			Description Change	Women's relationships with the earth, non-human nature, and other humans. The course explores the connections between the mastery of women and the mastery of nature; origins of ecofeminism and its relation to the science of ecology and to other branches of feminist philosophies. Critique of modern science, technology, political systems as well as solutions will be included.	Women's relationships with the earth, non-human nature, and other humans. The course explores the connections between societyΓÇÖs treatment of women and nature; origins of ecofeminism and how it relates to the science of ecology, conventional and sustainable agriculture as well as how ecofeminism relates to other branches of feminist philosophy. Evaluation and critique of modern science,
W S	323			Description Change	Examines how understanding and enactment of gender identities is shaped in and through communication. Verbal and nonverbal communication across various contexts including personal relationships and the media. Explores	Examines how understanding and enactment of gender identities is shaped by communication. Verbal and nonverbal communication across various contexts including personal relationships and the media. Explores discourse of social movements

W S	345			Description Change	Literature by women and/or dealing with the images of women, e.g., study of individual authors or related schools of authors; exploration of specific themes or genres in women's literature; analysis of recurrent	Literature by women and/or dealing with the images of women, e.g., study of individual authors or related schools of authors; exploration of specific themes or genres in women's literature; analysis of recurrent
W S	594			Description Change	Issues of gender related to cultural environments from the Middle Ages to contemporary times in Europe and America. Feminist movement beginning in the 1970s and specifically gender issues in art that	Issues of gender related to cultural environments from the Middle Ages to contemporary times in Europe and America. Feminist movement beginning in the 1970s and specifically gender issues in art that
BCB	565			Drop Course		
BCB	565A			Drop Course		
BCB	565B			Drop Course		
BCB	565C			Drop Course		
BCB	565D			Drop Course		
BCB	565E			Drop Course		
BCB	565F			Drop Course		
BCB	565G			Drop Course		
BCB	565S			Drop Course		
EEB	565			Drop Course		
EEB	565A			Drop Course		
EEB	565B			Drop Course		
EEB	565C			Drop Course		
EEB	565D			Drop Course		
EEB	565E			Drop Course		
EEB	565F			Drop Course		
EEB	565G			Drop Course		
EEB	565S			Drop Course		
GENET	565			Drop Course		
GENET	565A			Drop Course		
GENET	565B			Drop Course		
GENET	565C			Drop Course		
GENET	565D			Drop Course		
GENET	565E			Drop Course		
GENET	565F			Drop Course		
GENET	565G			Drop Course		
GENET	565S			Drop Course		
HCI	589			Drop Course		
LING	671			Drop Course		
ENSCI	463			Graduation Requirement Note Change	Credit for one of EnSci 463 or 463I may be applied for graduation.	Credit for one of AGRON 463 or AGRON 463I may be applied for graduation.

ENSCI	563		Graduation Requirement Note Change	Credit for only EnSci 563 or 563I may be applied for graduation.	Credit for one of Agron 563 or 563I may be applied for graduation.
NUTRS	519		Graduation Requirement Note Change	Only one of NutrS 419 and 519 may count toward graduation.	Only one of FS HN 419 and FS HN 519 may count toward graduation.
TOX	419		Graduation Requirement Note Change	Only one of Tox 419 and 519 may count towards graduation.	Only one of FS HN 419 and FS HN 519 may count toward graduation.
TOX	519		Graduation Requirement Note Change	Only one of TOX 419 and 519 may count toward graduation.	Only one of FS HN 419 and FS HN 519 may count toward graduation.
AF AM	347		Prereq Change	Engl 250	250
AF AM	348		Prereq Change	Engl 250	250
BPM I	326		Prereq Change	323	ARTIS 323
BPM I	327		Prereq Change	326	ARTIS 326
BPM I	337		Prereq Change	327	ARTIS 327
BRT	610		Prereq Change	FS HN 311 or 411 or 502 or BBMB 404	FS HN 311 or FS HN 411 or FS HN 502 or BBMB
C DEV	532		Prereq Change	506	C DEV 506
ENSCI	360		Prereq Change	Agron 260 or Geol 100 or 201	AGRON 154 or ENSCI 250 or GEOL 201
ENSCI	406		Prereq Change	Agron/Mteor 206	AGRON 206/MTEOR 206
ENSCI	409		Prereq Change	402 or 411 or C E 473	MATH 402 or MATH 411 or C E 473
ENSCI	411		Prereq Change	Geol 100 or 201; Math 165 or 181; Phys 111 or 221	Four courses in biological or physical sciences
ENSCI	451		Prereq Change	Geol 100 or 201, Math 181 or equivalent experience or permission of instructor	100 or 201, Math 181 or equivalent experience or permission of instructor
ENSCI	459		Prereq Change	Agron 354 or EnSci 360; Chem 164 or 178; Math 140. Chem 211 or 231 recommended	AGRON 354 or ENSCI 360; CHEM 178; MATH 140. CHEM 211 or CHEM 231 recommended
ENSCI	463		Prereq Change	154 or 260	AGRON 154 or AGRON 260
ENSCI	479		Prereq Change	Geol 100 or 201 or equivalent experience	100 or 201 or equivalent experience
ENSCI	485		Prereq Change	402 or Agron 154, Micro 201 (Micro 201L recommended)	AGRON 154 or AGRON402, MICRO 201 (MICRO 201L recommended)
ENSCI	505		Prereq Change	Math 165 or 182 or equivalent and some computer programming experience (any language)	MATH 165 or MATH 182 or equivalent and some computer programming experience (any language)
ENSCI	509		Prereq Change	402 or 411 or C E 473	MATH 402 or MATH 411 or C E 473
ENSCI	511		Prereq Change	Geol 100 or 201; Math 165 or 181; Phys 111 or 221	Four courses in biological or physical sciences
ENSCI	551		Prereq Change	Geol 100 or 201, Math 181 or equivalent experience or permission of instructor	GEOL 100 or GEOL 201, MATH 181 or equivalent experience or permission of instructor
ENSCI	558		Prereq Change	Agron 354 and Chem 178 or 211	AGRON 354 and CHEM 211
ENSCI	559		Prereq Change	Agron 354 or EnSci 360; Chem 164 or 178; Math 140. Chem 211 or 231 recommended	AGRON 354 or ENSCI 360; CHEM 178; MATH 140. CHEM 211 or CHEM 231 recommended
ENSCI	563		Prereq Change	Agron 154 or 260	154 or 260
ENSCI	577		Prereq Change	Recommended: Agron 354 and Math 166	Recommended: AGRON 154 and MATH 166
ENV S	320		Prereq Change	W S 201 or 3 credits in W S at the 300 level or	W S 201 or 3 credits in Women's Studies at the 300
ENV S	417		Prereq Change	Junior standing, 6 credits of natural science	Junior classification and 6 credits of natural science

ENV S	484			Prereq Change	Senior classification	Junior classification
ENV S	491			Prereq Change	Six credits in natural sciences	6 credits in natural sciences
GR ST	568			Prereq Change	Graduate classification	graduate classification.
GR ST	569			Prereq Change	Graduate classification	at least two prior years of graduate classification.
GR ST	570			Prereq Change	Graduate classification	graduate classification.
HCI	409			Prereq Change	Permission of instructor. Programming emphasis: Com S 227, 228, 229 or equivalent in Engineering; art or graphics emphasis: Art 230 and ArtIS 308; writing emphasis: an English course in creative writing or writing screen plays; business or marketing	Permission of instructor. Programming emphasis: COM S 227, COM S 228, COM S 229 or equivalent in engineering; art or graphics emphasis: ARTIS 230 and ARTIS 308; writing emphasis: an English course in creative writing or writing screen plays; business
HCI	409H			Prereq Change	Permission of instructor. Programming emphasis: Com S 227, 228, 229 or equivalent in Engineering; art or graphics emphasis: Art 230 and ArtIS 308; writing emphasis: an English course in creative writing or writing screen plays; business or marketing	Permission of instructor. Programming emphasis: COM S 227, COM S 228, COM S 229 or equivalent in engineering; art or graphics emphasis: ARTIS 230 and ARTIS 308; writing emphasis: an English course in creative writing or writing screen plays; business
HCI	509			Prereq Change	Permission of instructor. Programming emphasis: Com S 227, 228, 229 or equivalent in Engineering; art or graphics emphasis: Art 230 and ArtIS 308; writing emphasis: an English course in creative writing or writing screen plays; business or marketing	Permission of instructor
LING	309			Prereq Change	Anthr 201	ANTHR 201 recommended
LING	590B			Prereq Change	Permission of the English Department Graduate Studies Committee according to guidelines available in the department office	Permission of the Graduate Studies Committee according to guidelines available in the department office
MCDB	676			Prereq Change	BBMB 404 or 501, 405 or 502 or GDCB 511	BBMB404 or 501, BBMB405 or 502 or GDCB 511
NUTRS	552			Prereq Change	Biol 335; credit or enrollment in BBMB 404 or 420	BIOL 335; credit or enrollment in BBMB 404 or
NUTRS	561			Prereq Change	FS HN 360, 3 credits in physiology at 300 level or	FS HN 360, 361, 3 credits in physiology at 300 level
NUTRS	563			Prereq Change	FS HN 265 or 360; 366 recommended	FS HN 265 or FS HN 360; FS HN 366
STB	535			Prereq Change	Curriculum requires undergraduate specialization in a business or biological science	Admission to MS in Seed Technology and Business program or by special arrangement with the
TOX	419			Prereq Change	Micro 201 or 302, a course in biochemistry	MICRO 201 or MICRO 302, a course in biochemistry
TOX	420			Prereq Change	Micro 201 or 302	MICRO 201 or MICRO 302
TOX	546			Prereq Change	D.V.M. degree or 526	D.V.M. degree or VDPAM 526
TOX	565			Prereq Change	Stat 500 or 401; Stat 543 or 447	STAT 500 or STAT 401; STAT 543 or STAT 447
TOX	626			Prereq Change	FS HN 420 or 421 or 504	FS HN 420 or FS HN 421 or FS HN 504
TOX	627			Prereq Change	FS HN 420 or 421 or 504	FS HN 420 or FS HN 421 or FS HN 504
TOX	675			Prereq Change	501 or Ent 555	ENT 555 or TOX 501
W S	346			Prereq Change	2 courses in psychology including 101	2 courses in psychology including PSYCH 101
W S	594			Prereq Change	Graduate classification, permission of instructor	Graduate classification and permission of instructor
GENET	591			Term Offering Change	S.	F.S.

GENET	690			Term Offering Change	F.	F.S.
AF AM	347			Title Change	African American Literature to 1960	Studies in African American Literature
BIOL	381			Title Change	Environmental Systems I: Introduction to	Environmental Systems I: Introduction to
BIOL	491			Title Change	Laboratory Teaching Experience	Undergraduate Teaching Experience
CL ST	383H			Title Change	Honors (3-4 cr.)	Honors
ENSCI	459			Title Change	Environmental Soil and Water Chemistry	Environmental Soil and Water Chemistry
ENV S	381			Title Change	Environmental Systems I: Introduction to	Environmental Systems I: Introduction to
GERON	378			Title Change	Economics of Aging	Retirement Contexts and Planning
GR ST	565			Title Change	Responsible Conduct of Research. (Cr. 1.0). F,	Responsible Conduct of Research in Science and
GR ST	566			Title Change	Communications in Science. (Cr. 0.5). Alt S., offered 2011. Reading and reviewing manuscripts; publishing papers; oral and poster presentations.	Communications in Science
GR ST	567			Title Change	Time Management and Mentoring. (Cr. 0.5). Alt F., offered 2012. Balancing life and career; mentoring;	Time Management and Mentoring
GR ST	568			Title Change	The Interview Process. (Cr. 0.5). Alt S., offered 2012. Applying and interviewing for academia,	The Interview Process.
GR ST	569			Title Change	Grant Writing. (Cr. 1.0). Alt F., offered 2011. Writing a winning proposal.	Grant Writing.
GR ST	570			Title Change	Teaching. (Cr. 0.5). Preparation of a teaching portfolio and course materials; lecturing, technology.	Teaching.
HCI	407H			Title Change	Honors (3-4 cr.)	Honors
HCI	409H			Title Change	Honors (3-4 cr.)	Honors
LING	286			Title Change	Basic Sign Language	Communicating with the Deaf
LING	490B			Title Change	Independent Study	Linguistics, Semantics
LING	590B			Title Change	Teaching English as a Second Language (TESL)/Applied Linguistics. (Cross-listed with Engl	Teaching English as a Second Language
TOX	565			Title Change	Methods of Biostatistics	Methods in Biostatistics