MEMORANDUM

Faculty Senate approved September 23, 2021

TO: Deans and Chairs

FROM: Becky Bitter, Sr. Assistant Registrar

DATE: September 1, 2021

SUBJECT: Minor Change Bulletin No. 1

The courses listed below reflect the minor curricular changes approved by the catalog editor since approval of the last Minor Change Bulletin. The column to the far right indicates the date each change becomes effective.

Subject	Course Number	Revise Drop	Current	Proposed	Effective Date
AMDT	417	Revise	[DIVR] [M] Multicultural Perspectives on the Body and Dress 3 Course Prerequisite: 6 eredits [SSCI]; junior standing. Engagement in multidisciplinary approaches that explore the social importance of the body, gender and dress. Typically offered Fall.	[DIVR] [M] Multicultural Perspectives on the Body and Dress 3 Course Prerequisite: Junior standing. Engagement in multidisciplinary approaches that explore the social importance of the body, gender and dress. Typically offered Fall.	8-21
AMDT / WGSS	422	Revise	[DIVR] Fat Studies 3 Course Prerequisite: Junior standing. Examination of weight-based oppression as a social justice issue with other systems of oppression based on gender, race, class, age, sexual orientation, and ability. (Crosslisted course offered as AMDT 422, WOMEN ST 422). Typically offered Summer Session.	[DIVR] Fat Studies 3 Course Prerequisite: Junior standing. Examination of weight-based oppression as a social justice issue with other systems of oppression based on gender, race, class, age, sexual orientation, and ability. (Crosslisted course offered as AMDT 422, WGSS 422. WGSS 422 formerly offered as WOMEN ST 422.) Typically offered Summer Session.	8-21
AMER ST / CES / ENGLISH / HISTORY / WGSS	216	Revise	Introduction to American Cultural Studies 3 Introduction to the interdisciplinary study of American cultures and the field of American studies. (Crosslisted course offered as AMER ST 216, CES 216,	Introduction to American Cultural Studies 3 Introduction to the interdisciplinary study of American cultures and the field of American studies. (Crosslisted course offered as AMER ST 216, CES 216,	8-21

			ENGLISH 216, HISTORY 216, WOMEN ST 216). Typically offered Fall, Spring, and Summer.	ENGLISH 216, HISTORY 216, WGSS 216. WGSS 216 formerly offered as WOMEN ST 216.) Typically offered Fall, Spring, and Summer.	
ANTH	404	Revise	[CAPS] The Self in Culture 3 Course Prerequisite: One course at the 100-level and one course at the 200-level in any of the following subjects: AMER ST, ANTH, CES, COM, ENGLISH, FINE ART, H D, HISTORY, HUMANITY, PHIL, POL S, PSYCH, SOC, or WOMEN ST; junior standing. Survey of anthropological theories exploring self in Western/non-Western cultures through dreams, history, and human development. Typically offered Fall and Spring.	[CAPS] The Self in Culture 3 Course Prerequisite: One course at the 100-level and one course at the 200-level in any of the following subjects: AMER ST, ANTH, CES, COM, ENGLISH, FINE ART, H D, HISTORY, HUMANITY, PHIL, POL S, PSYCH, SOC, or WGSS; junior standing. Survey of anthropological theories exploring self in Western/non-Western cultures through dreams, history, and human development. Typically offered Fall and Spring.	8-21
ANTH / WGSS	316	Revise	[DIVR] Gender in Cross Cultural Perspective 3 Cross- cultural examination of the status and roles of women and men, sexuality and marriage, and folk concepts of sexual anatomy in traditional cultures in Western science; concepts of nature and culture are explored through a variety of perspectives. (Crosslisted course offered as ANTH 316, WOMEN ST 316). Recommended preparation: Sophomore standing; ANTH 101, PSYCH 105, SOC 101, or WOMEN ST 101 or 201. Typically offered Fall, Spring, and Summer.	[DIVR] Gender in Cross Cultural Perspective 3 Cross- cultural examination of the status and roles of women and men, sexuality and marriage, and folk concepts of sexual anatomy in traditional cultures in Western science; concepts of nature and culture are explored through a variety of perspectives. (Crosslisted course offered as ANTH 316, WGSS 316. WGSS 316 formerly offered as WOMEN ST 316.). Recommended preparation: Sophomore standing; ANTH 101, PSYCH 105, SOC 101, or WGSS 101 or 120. Typically offered Fall, Spring, and Summer.	8-21
ASTRONOM	345	Revise	Principles of Astronomy 3 Course Prerequisite: MATH 172 or 182; PHYSICS 202 or 206. Planets, the sun, stars, and galaxies; current topics in astrophysics and planetary research. Typically offered Fall.	Principles of Astronomy 3 Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212, or PHYSICS 206; MATH 172 or 182. Planets, the sun, stars, and galaxies; current topics in astrophysics and	8-21

				planetary research. Typically offered Fall.	
ASTRONOM	435	Revise	Astronomy and Astrophysics I 3 Course Prerequisite: MATH 172 or 182; PHYSICS 202 or 206. Planets, solar systems, and stars. Typically offered Spring.	Astronomy and Astrophysics I 3 Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212, or PHYSICS 206; MATH 172 or 182. Planets, solar systems, and stars. Typically offered Spring.	8-21
ASTRONOM	436	Revise	Astronomy and Astrophysics II 3 Course Prerequisite: MATH 172 or 182; PHYSICS 202 or 206. Exotic objects, galaxies, and cosmology. Typically offered Spring.	Astronomy and Astrophysics II 3 Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212, or PHYSICS 206; MATH 172 or 182. Exotic objects, galaxies, and cosmology. Typically offered Spring.	8-21
ВА	204	Revise	Spreadsheets 1 Course Prerequisite: Sophomore standing. Enrollment not allowed if credit already earned for B A 212. Introduction to spreadsheets; basics for using spreadsheets for data analysis and to support decision-making. Credit not granted for both BA 204 and 212. Typically offered Fall, Spring, and Summer.	Spreadsheets 1 Course Prerequisite: Completed 27 semester credits. Enrollment not allowed if credit already earned for B A 212. Introduction to spreadsheets; basics for using spreadsheets for data analysis and to support decision-making. Credit not granted for both BA 204 and 212. Typically offered Fall, Spring, and Summer.	1-22
BA	212	Revise	Spreadsheets, Data Visualization, and Decision Analysis 3 Course Prerequisite: Sophomore standing. Enrollment not allowed if credit already earned for B A 204, 205, or 206. Introduction to basics for using spreadsheets for data analysis and to support decision-making; principles and techniques of representing data visually in graphs, charts, and diagrams; communicating data-based results effectively; skeptical interpretation of visually represented findings when making decisions; techniques for making informed and logical decisions in a business context; introduction	already earned for B A 204, 205, or 206. Introduction to basics for using spreadsheets for data analysis and to support decision-making; principles and techniques of representing data visually in graphs, charts, and diagrams; communicating data- based results effectively; skeptical interpretation of visually represented findings when making decisions;	1-22

			to spreadsheets. Credit not granted for B A 212 if credit is already earned in either B A 204, 205, or 206.	to spreadsheets. Credit not granted for B A 212 if credit is already earned in either B A 204, 205, or 206.	
ВА	579	Revise	MBA Capstone V 1-4 May be repeated for credit; cumulative maximum 6 hours. Course Prerequisite: Admission to the MBA program. Analyze, evaluate, and recommend management actions for a specific strategic business project (for an existing organization or new venture).	MBA Capstone V 1-4 May be repeated for credit; cumulative maximum 4 hours. Course Prerequisite: Admission to the MBA program. Analyze, evaluate, and recommend management actions for a specific strategic business project (for an existing organization or new venture).	8-22
BIOLOGY / WGSS	307	Revise	[DIVR] Biology of Women 3 Course Prerequisite: BIOLOGY 102 or 106. Biological basis of sex and its relationship to body function, women and health care, and the impact of social and cultural perspectives on the experience of being female. (Crosslisted course offered as BIOLOGY 307, WOMEN ST 307). Typically offered Spring.	[DIVR] Biology of Women 3 Course Prerequisite: BIOLOGY 102 or 106. Biological basis of sex and its relationship to body function, women and health care, and the impact of social and cultural perspectives on the experience of being female. (Crosslisted course offered as BIOLOGY 307, WGSS 307. WGSS 307 formerly offered as WOMEN ST 307.) Typically offered Spring.	8-21
CE	211	Revise	Statics 3 Course Prerequisite: MATH 172 or concurrent enrollment, or MATH 182 or concurrent enrollment; PHYSICS 201 or concurrent enrollment, or PHYSICS 205 or concurrent enrollment. Engineering mechanics concepts; force systems; static equilibrium; centroids, centers of gravity; shear and moment diagrams; friction; moments of inertia. Typically offered Fall, Spring, and Summer. Cooperative: Open to UI degree-seeking students.	Statics 3 Course Prerequisite: MATH 172, 182, or concurrent enrollment; 4 credits of PHYSICS 201, or PHYSICS 201 and 211 or concurrent enrollment, or PHYSICS 205 or concurrent enrollment. Engineering mechanics concepts; force systems; static equilibrium; centroids, centers of gravity; shear and moment diagrams; friction; moments of inertia. Typically offered Fall, Spring, and Summer. Cooperative: Open to UI degree-seeking students.	8-21
CE	401	Revise	Climate Change Science and Engineering 3 Course Prerequisite: CHEM 105; MATH 172; PHYSICS 201; admitted to any major.	Climate Change Science and Engineering 3 Course Prerequisite: CHEM 105; MATH 172; 4 credits of PHYSICS 201, or PHYSICS	8-21

			Engineering solutions for climate change problems; basic science of climate change, engineering for mitigation and adaptation, and climate change policy. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	201 and 211; admitted to any major. Engineering solutions for climate change problems; basic science of climate change, engineering for mitigation and adaptation, and climate change policy. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	
CE	402	Revise	Prerequisite: MATH 172 or 182; PHYSICS 201; admitted to any major. Atmospheric physical behavior across spatial scales linking concepts of meteorological phenomena to engineering design principles. Credit not granted for both CE 402 and CE 502. Offered at 400	Applied Meteorology 3 Course Prerequisite: MATH 172 or 182; 4 credits of PHYSICS 201, or PHYSICS 201 and 211; admitted to any major. Atmospheric physical behavior across spatial scales linking concepts of meteorological phenomena to engineering design principles. Credit not granted for both CE 402 and CE 502. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	8-21
CES / WGSS	411	Revise	Asian Pacific American Women 3 Course Prerequisite: CES or WOMEN ST course; junior standing. Intersection of ethnicity, race, class, gender and sexuality in the lives of Asian Pacific American women. (Crosslisted course offered as CES 411, WOMEN ST 411).	Asian Pacific American Women 3 Course Prerequisite: CES or WGSS course; junior standing. Intersection of ethnicity, race, class, gender and sexuality in the lives of Asian Pacific American women. (Crosslisted course offered as CES 411, WGSS 411. WGSS 411 formerly offered as WOMEN ST 411.)	8-21

СНЕМ	332	Revise	Physical Chemistry 3 Course Prerequisite: MATH 273 with a C or better; MATH 220 with a C or better; PHYSICS 202 with a C or better. Elementary quantum theory; molecular structure and spectra; bonding theory; reaction rates; photochemistry and radiation chemistry; energy states and statistical thermodynamics. Typically offered Spring.	Physical Chemistry 3 Course Prerequisite: MATH 273 or 283 with a C or better; MATH 220 with a C or better; 4 credits of PHYSICS 202 with a C or better, or PHYSICS 202 and 212, each with a C or better. Elementary quantum theory; molecular structure and spectra; bonding theory; reaction rates; photochemistry and radiation chemistry; energy states and statistical thermodynamics. Typically offered Spring.	8-21
СНЕМ	338	Revise	Physical Chemistry for Chemical Biology 3 Course Prerequisite: CHEM 345 with a C or better; MATH 140 with a C or better, or MATH 171 with a C or better; PHYSICS 101 with a C or better, or PHYSICS 102 with a C or better. The modern tools and insights of physical chemistry are covered by interconnecting these fundamental concepts with key biological phenomena.	Physical Chemistry for Chemical Biology 3 Course Prerequisite: CHEM 345 with a C or better; MATH 140 or 171 with a C or better; 4 credits of PHYSICS 101 or 102 with a C or better, or PHYSICS 101 and 111, each with a C or better, or PHYSICS 102 and 112, each with a C or better. The modern tools and insights of physical chemistry are covered by interconnecting these fundamental concepts with key biological phenomena.	8-21
СНЕМ	401 / 501	Revise	Modern Inorganic Chemistry 3 Course Prerequisite: CHEM 345 with a C or better. Properties of substances; periodic systems; oxidation- reduction and acid-base characteristics interpreted on the basis of atomic and molecular structure. Recommended preparation: CHEM 220. Typically offered Fall.	Modern Inorganic Chemistry 3 Course Prerequisite: CHEM 345. Properties of substances; periodic trends; catalysis; structure and reactivity; acid- base; oxidation-reduction; and spectroscopy. Credit not granted for both CHEM 401 and 501. Typically offered Fall.	8-21
COM / WGSS	464	Revise	Gender and the Media 3 Course Prerequisite: Admitted to any major; sophomore standing. How news and entertainment media shape and reinforce societal expectations of gender; consideration of race,	Gender and the Media 3 Course Prerequisite: Admitted to any major; sophomore standing. How news and entertainment media shape and reinforce societal expectations of gender; consideration of race,	8-21

			age, class, and sexual orientation. (Crosslisted course offered as COM 464, WOMEN ST 464). Typically offered Summer Session.	age, class, and sexual orientation. (Crosslisted course offered as COM 464, WGSS 464. WGSS 464 formerly offered as WOMEN ST 464.) Typically offered Summer Session.	
CRM J / WGSS	403	Revise	[CAPS] Violence Toward Women 3 Course Prerequisite: Junior standing. Violence toward women and its relationship to broader social issues such as sexism and social control. (Crosslisted course offered as CRM J 403, WOMEN ST 403). Typically offered Fall, Spring, and Summer.	[CAPS] Violence Toward Women 3 Course Prerequisite: Junior standing. Violence toward women and its relationship to broader social issues such as sexism and social control. (Crosslisted course offered as CRM J 403, WGSS 403. WGSS 403 formerly offered as WOMEN ST 403.) Typically offered Fall, Spring, and Summer.	8-21
CST M	332	Revise	Building Science I 3 Course Prerequisite: PHYSICS 101 with a C or better; admitted major in Architectural Studies or Construction Management. Mechanical systems for buildings; building heating, ventilating, and air conditioning systems, heat flow concepts. Typically offered Fall.	Building Science I 3 Course Prerequisite: 4 credits of PHYSICS 101 with a C or better, or PHYSICS 101 and 111 with a C or better; admitted major in Architectural Studies or Construction Management. Mechanical systems for buildings; building heating, ventilating, and air conditioning systems, heat flow concepts. Typically offered Fall.	8-21
E E	261	Revise	Electrical Circuits I 3 Course Prerequisite: MATH 315 with a C or better or concurrent enrollment; PHYSICS 202 with a C or better. Application of fundamental concepts of electrical science in linear circuit analysis; mathematical models of electric components and circuits. Typically offered Fall and Spring.	Electrical Circuits I 3 Course Prerequisite: MATH 315 with a C or better or concurrent enrollment; 4 credits of PHYSICS 202 with a C or better, or PHYSICS 202 and 212, each with a C or better. Application of fundamental concepts of electrical science in linear circuit analysis; mathematical models of electric components and circuits. Typically offered Fall and Spring.	8-21
EЕ	311	Revise	Electronics 3 Course Prerequisite: E E 261 with a C or better; admitted to the major	Electronics 3 Course Prerequisite: E E 261 with a C or better; admitted to the major	5-21

		in Electrical Engineering, Computer Science, or Computer Engineering. Fundamental device characteristics including diodes, MOSFETs and bipolar transistors; small- and large- signal characteristics and design of linear circuits. Typically offered Fall and Spring.	or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Fundamental device characteristics including diodes, MOSFETs and bipolar transistors; small- and large- signal characteristics and design of linear circuits. Typically offered Fall and Spring.	
E E	321	Electrical Circuits II 3 Course Prerequisite: E E 261 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. State space analysis, Laplace transforms, network functions, frequency response, Fourier series, two-ports, energy and passivity. Typically offered Fall and Spring.	Electrical Circuits II 3 Course Prerequisite: E E 261 with a C or better; admitted to the major or minor in Electrical	5-21
E E	324	architectures; system-level	[M] Fundamentals of Digital Systems 4 (3-3) Course Prerequisite: E E 214 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Design and analysis of synchronous sequential machines; module and bit-slice devices; alternative architectures; system-level design; asynchronous sequential machines. Typically offered Fall.	5-21
E E	331	Electromagnetic Fields and Waves 3 Course Prerequisite: E E 261 with a C or better; E E 262 with a C or better or concurrent enrollment; MATH 315 with a C or better; PHYSICS 202 with a C or	Electromagnetic Fields and Waves 3 Course Prerequisite: E E 261 with a C or better; E E 262 with a C or better or concurrent enrollment; MATH 315 with a C or better; 4 credits of PHYSICS 202, or PHYSICS	8-21

			better. Certification not required. Students will be required to pass a math skills test. Fundamentals of transmission lines, electrostatics, magnetostatics, and Maxwell's Equations for static fields. Typically offered Fall and Spring.	202 and 212, each with a C or better. Admission to the major not required. Students will be required to pass a math skills test. Fundamentals of transmission lines, electrostatics, magnetostatics, and Maxwell's Equations for static fields. Typically offered Fall and Spring.	
EE	334	Revise	Computer Architecture 3 (3-3) Course Prerequisite: E E 234 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Modern developments in digital system design, parallel structures, pipelining, input/output, high speed circuits, laboratory experience in digital system design; emphasis on CPU architecture. Typically offered Spring.	Computer Architecture 3 (3-3) Course Prerequisite: E E 234 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Modern developments in digital system design, parallel structures, pipelining, input/output, high speed circuits, laboratory experience in digital system design; emphasis on CPU architecture. Typically offered Spring.	5-21
EE	341	Revise	better or concurrent enrollment,	Signals and Systems 3 Course Prerequisite: E E 321 with a C or better; STAT 360 with a C or better or concurrent enrollment, or STAT 443 with a C or better or concurrent enrollment; admitted to the major or minor in E E, Cpt S, Cpt E, or Software Engineering. Discrete and continuous-time signals, LTI systems, convolution, sampling, Fourier transform, filtering, DFT, amplitude modulation, probability applications. Typically offered Fall and Spring.	5-21
EE	351	Revise	Distributed Parameter Systems 3 Course Prerequisite: E E 331 with a C or better; admitted to the major in Electrical Engineering,	Distributed Parameter Systems 3 Course Prerequisite: E E 331 with a C or better; admitted to the major or minor in Electrical Engineering,	5-21

E E	352	Revise	Computer Science, or Computer Engineering. Maxwell's equations, plane waves, waveguides, resonators, antennas, numerical methods. Typically offered Spring. [M] Electrical Engineering	Engineering, or Software Engineering. Maxwell's equations, plane waves, waveguides, resonators, antennas, numerical methods. Typically offered Spring. [M] Electrical Engineering	5-21
			Laboratory I 3 (1-6) Course Prerequisite: E E 262 with a C or better; E E 311 with a C or better or concurrent enrollment; E E 321 with a C or better or concurrent enrollment; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Experiments in electrical circuits, measurements and electronics; principles of measurements and measuring instruments. Typically offered Fall and Spring.	Prerequisite: E E 262 with a C or better; E E 311 with a C or better or concurrent enrollment; E E 321 with a C or better or concurrent enrollment; admitted to the major or minor in E E, Cpt S, Cpt E, or Software Engineering. Experiments in electrical circuits, measurements and electronics; principles of measurements and measuring instruments. Typically offered Fall and Spring.	
E E	361	Revise	Electrical Power Systems 3 Course Prerequisite: E E 321 with a C or better; E E 331 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Power system hardware; transformers, and electromechanical machinery; introduction to power system operation. Typically offered Fall and Spring.	Electrical Power Systems 3 Course Prerequisite: E E 321 with a C or better; E E 331 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Power system hardware; transformers, and electromechanical machinery; introduction to power system operation. Typically offered Fall and Spring.	5-21
EE	362	Revise	Power System Laboratory I 3 (1-6) Course Prerequisite: E E 262 with a C or better; E E 352 with a C or better; concurrent enrollment in E E 361; concurrent enrollment in E E 341; admitted to the major in Electrical Engineering, Computer Science, or Computer	Power System Laboratory I 3 (1-6) Course Prerequisite: E E 262 with a C or better; E E 352 with a C or better; concurrent enrollment in E E 361; concurrent enrollment in E E 341; admitted to the major or minor in E E, Cpt S, Cpt E, or Software Engineering.	5-21

			simulation, modeling, transformers, rotating machines, and transmission lines. Typically offered Spring.	modeling, transformers, rotating machines, and transmission lines. Typically offered Spring.	
EE	415	Revise	Design Project Management 3 (1-6) Course Prerequisite: E E 341 with a C or better and E E 361 with a C or better; or E E 334 with a C or better and CPT S 360 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Project scheduling/planning, technical writing, oral presentation skills, working in teams, TQC, TQM, market-driven organizations. Typically offered Fall and Spring.	Design Project Management 3 (1-6) Course Prerequisite: E E 341 and E E 361, both with a C or better; or E E 334 and CPT S 360, both with a C or better; admitted to the major or minor in E E, Cpt S, Cpt E, or Software Engineering. Project scheduling/planning, technical writing, oral presentation skills, working in teams, TQC, TQM, market-driven organizations. Typically offered Fall and Spring.	5-21
EE	416	Revise	[CAPS] [M] Electrical Engineering Design 3 (1-6) Course Prerequisite: E E 415 with a C or better; ENGLISH 402 with a C or better, or concurrent enrollment, or ENGLISH 403 with a C or better, or concurrent enrollment; admitted to the major in E E, Cpt S, Cpt E or Cpt A; senior standing. Electrical engineering design of specific projects including design specification; written and oral presentations and reports. Typically offered Fall and Spring.	[CAPS] [M] Electrical Engineering Design 3 (1-6) Course Prerequisite: E E 415 with a C or better; ENGLISH 402 or 403 with a C or better, or concurrent enrollment; admitted to the major or minor in E E, Cpt S, Cpt E, Cpt A, or Software Engineering; senior standing. Electrical engineering design of specific projects including design specification; written and oral presentations and reports. Typically offered Fall and Spring.	5-21
EE	431	Revise	RF and Microwave Circuits and Systems 3 Course Prerequisite: E E 311; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Design and implementation of RF/microwave modules and systems for telecommunications; microstrip,	RF and Microwave Circuits and Systems 3 Course Prerequisite: E E 311; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Design and implementation of RF/microwave modules and systems for	5-21

			filters, mixers, amplifiers, frequency synthesizers and transceivers. Typically offered Spring.	telecommunications; microstrip, filters, mixers, amplifiers, frequency synthesizers and transceivers. Typically offered Spring.	
E E	432	Revise	RF Engineering for Telecommunications 4 (3-3) Course Prerequisite: E E 331; E E 341 with a C or better; STAT 360 with a C or better or STAT 443 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. System and propagation issues for wireless telecommunications; cellular, PCS, microwave, and satellite system analysis, design, measurement, and testing. Typically offered Fall.	RF Engineering for Telecommunications 4 (3-3) Course Prerequisite: E E 331; E E 341 with a C or better; STAT 360 with a C or better or STAT 443 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. System and propagation issues for wireless telecommunications; cellular, PCS, microwave, and satellite system analysis, design, measurement, and testing. Typically offered Fall.	5-21
EE	434	Revise	ASIC and Digital Systems Design 3 (2-3) Course Prerequisite: E E 234 with a C or better; E E 321 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Application Specific Integrated Circuit and Digital System Design methods, semi-custom, full-custom, and field-programmable devices; digital system architectures, electronics, and tests. Typically offered Spring.	Engineering, or Software Engineering. Application	5-21
EE	451	Revise	Digital Communication Systems 3 Course Prerequisite: E E 341 with a C or better, STAT 360 with a C or better, or STAT 443 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Digital communication techniques;	Digital Communication Systems 3 Course Prerequisite: E E 341 with a C or better, STAT 360 with a C or better, or STAT 443 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Digital	5-21

			performance of digital communication systems in noise; matched filter detection; quantization. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	communication techniques; performance of digital communication systems in noise; matched filter detection; quantization. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	
EE	464	Revise	Digital Signal Processing I 3 Course Prerequisite: E E 341 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Discrete and fast Fourier transforms; Z- transform; sampling; discrete convolution; digital filter design; effects of quantization. Typically offered Fall.	Digital Signal Processing I 3 Course Prerequisite: E E 341 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Discrete and fast Fourier transforms; Z- transform; sampling; discrete convolution; digital filter design; effects of quantization. Typically offered Fall.	5-21
EE	466	Revise	VLSI Design 3 Course Prerequisite: E E 234 with a C or better; admitted to the major in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Very Large Scale Integrated circuit, system and physical design using CAD software; project specification, modeling, implementation, documentation and reporting. Typically offered Fall.	VLSI Design 3 Course Prerequisite: E E 234 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Very Large Scale Integrated circuit, system and physical design using CAD software; project specification, modeling, implementation, documentation and reporting. Typically offered Fall.	5-21
EE	476	Revise	Analog Integrated Circuits 3 Course Prerequisite: E E 311 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Analysis and design of analog integrated circuits in CMOS and BiCMOS technologies; current mirrors, gain stages, operational amplifiers, frequency response, and compensation. Credit not granted for both E E 476 and	Analog Integrated Circuits 3 Course Prerequisite: E E 311 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Analysis and design of analog integrated circuits in CMOS and BiCMOS technologies; current mirrors, gain stages, operational amplifiers, frequency response, and compensation. Credit not	5-21

			576. Offered at 400 and 500 level. Typically offered Spring.	granted for both E E 476 and 576. Offered at 400 and 500 level. Typically offered Spring.	
E E	485	Revise	Engineering. Fundamentals of distribution systems	Electric Energy Distribution Systems 3 Course Prerequisite: E E 361 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Fundamentals of distribution systems engineering, distribution system modeling and analysis, distribution load flow analysis, voltage regulation, recent advances in distribution automation. Typically offered Spring.	5-21
EE	486	Revise	Engineering. Analysis and modeling of power electronics- based converters, steady state operation, converter topologies, non-ideal effects; power	Power Electronics 3 Course Prerequisite: E E 361 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Analysis and modeling of power electronics- based converters, steady state operation, converter topologies, non-ideal effects; power supplies; applications. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	5-21
EE	489	Revise	Introduction to Control Systems 3 Course Prerequisite: E E 341 with a C or better or concurrent enrollment; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. State variable models, system response, stability analysis, root locus analysis and design; frequency- response and state-space	Introduction to Control Systems 3 Course Prerequisite: E E 341 with a C or better or concurrent enrollment; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. State variable models, system response, stability analysis, root locus analysis and design; frequency- response and state-space	5-21

			analysis and design. Typically offered Fall.	analysis and design. Typically offered Fall.	
EE	491	Revise	Performance of Power Systems 3 Course Prerequisite: E E 361 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Static and dynamic behavior of power systems, powerflow, and economic considerations. Typically offered Fall.	Performance of Power Systems 3 Course Prerequisite: E E 361 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Static and dynamic behavior of power systems, powerflow, and economic considerations. Typically offered Fall.	5-21
EE	492	Revise	Renewable Energy Sources 3 (2-3) Course Prerequisite: E E 361 with a C or better or concurrent enrollment; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Design of electrical generation plants using wind, solar and other renewable energy sources including technical, environmental and economic aspects. Typically offered Fall.	Renewable Energy Sources 3 (2-3) Course Prerequisite: E E 361 with a C or better or concurrent enrollment; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Design of electrical generation plants using wind, solar and other renewable energy sources including technical, environmental and economic aspects. Typically offered Fall.	5-2
EE	493	Revise	Protection of Power Systems I 3 Course Prerequisite: E E 361 with a C or better; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Analysis and equipment fundamentals of power system protection; symmetrical components, fault calculations; fuses; and relays including burden calculations. Typically offered Spring.	Protection of Power Systems I 3 Course Prerequisite: E E 361 with a C or better; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Analysis and equipment fundamentals of power system protection; symmetrical components, fault calculations; fuses; and relays including burden calculations. Typically offered Spring.	5-2
EE	494	Revise	Protective Relay Labs 3 (1-6) Course Prerequisite: E E 361 with a C or better; E E 493 with a C or better or concurrent enrollment; admitted to the	Protective Relay Labs 3 (1-6) Course Prerequisite: E E 361 with a C or better; E E 493 with a C or better or concurrent enrollment; admitted to the	5-2

			major in Electrical Engineering, Computer Science, or Computer Engineering. Experiments and measurements of protective relay equipment under test, simulated fault and fault conditions. Typically offered Spring.	major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Experiments and measurements of protective relay equipment under test, simulated fault and fault conditions. Typically offered Spring.	
E E	496	Revise	Semiconductor Devices 3 Course Prerequisite: CHEM 105 or PHYSICS 202; admitted to the major in Electrical Engineering, Computer Science, or Computer Engineering. Equilibrium statistics of electrons and holes; carrier dynamics; p-n junctions, metal-semiconductor junctions, BJTs, Mosfets, solar cells, and LEDs. Typically offered Fall.	Semiconductor Devices 3 Course Prerequisite: CHEM 105, 4 credits of PHYSICS 202, or PHYSICS 202 and 212; admitted to the major or minor in Electrical Engineering, Computer Science, Computer Engineering, or Software Engineering. Equilibrium statistics of electrons and holes; carrier dynamics; p-n junctions, metal-semiconductor junctions, BJTs, Mosfets, solar cells, and LEDs. Typically offered Fall.	5-21
E M	420 / 520	Drop	Contract Project Management 3 Contract project bids, proposals, contracts, project delivery/organization;	N/A	8-21
			estimating, scheduling, resource loading, project monitoring and controls, safety and quality. Credit not granted for both E M 420 and 520. Offered at 400 and 500 level. Typically offered Spring.		
E M	555	Drop	loading, project monitoring and controls, safety and quality. Credit not granted for both E M 420 and 520. Offered at 400 and 500 level. Typically offered	N/A	1-22

			PHYSICS 202. Semiconductor theory; carrier diffusion and drift, direct and indirect energy materials, homo and hetereojunctions, operations principles of bipolar junctions and MOS field effect transistors, metalsemiconductor contacts. Typically offered Fall.	credits PHYSICS 202, or PHYSICS 202 and 212. Semiconductor theory; carrier diffusion and drift, direct and indirect energy materials, homo and hetereojunctions, operations principles of bipolar junctions and MOS field effect transistors, metalsemiconductor contacts. Typically offered Fall.	
ECE	421	Revise	Introduction to Solar Cells 3 (2-3) Course Prerequisite: PHYSICS 202. Materials, structures, and devices used in renewable energy systems with the focus on solar cells. Typically offered Fall.	Introduction to Solar Cells 3 (2-3) Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212. Materials, structures, and devices used in renewable energy systems with the focus on solar cells. Typically offered Fall.	8-21
ENGLISH / WGSS	260	Revise	Rhetoric and Gender 3 Historical survey of women writers whose contributions distinguish them as rhetoricians of their time. (Crosslisted course offered as ENGLISH 260, WOMEN ST 260). Typically offered Spring.	Rhetoric and Gender 3 Historical survey of women writers whose contributions distinguish them as rhetoricians of their time. (Crosslisted course offered as ENGLISH 260, WGSS 260. WGSS 260 formerly offered as WOMEN ST 260.) Typically offered Spring.	8-21
ENGLISH / WGSS	308 / 306	Revise	[M] Introduction to Literary Criticism 3 Introduction to the systematic study of critical and theoretical approaches to literature; emphasis on problems of interpretation. (Crosslisted course offered as ENGLISH 308, WOMEN ST 306). Typically offered Fall and Spring.	[M] Introduction to Literary Criticism 3 Introduction to the systematic study of critical and theoretical approaches to literature; emphasis on problems of interpretation. (Crosslisted course offered as ENGLISH 308, WGSS 306. WGSS 306 formerly offered as WOMEN ST 306.) Typically offered Fall and Spring.	8-21
ENGLISH / WGSS	309	Revise	Women Writers 3 Women's artistic and intellectual contributions to prose, fiction, drama, and poetry. (Crosslisted course offered as ENGLISH 309, WOMEN ST 309).	Women Writers 3 Women's artistic and intellectual contributions to prose, fiction, drama, and poetry. (Crosslisted course offered as ENGLISH 309, WGSS 309. WGSS 309 formerly offered as WOMEN	8-21

			Typically offered Fall and Spring.	ST 309.) Typically offered Fall and Spring.	
ENGLISH / WGSS	317	Revise	Gay and Lesbian Literature 3 Gay and lesbian literature with focus on the history of homosexual literature and exploration of current authors. (Crosslisted course offered as ENGLISH 317, WOMEN ST 317). Typically offered Spring.	Gay and Lesbian Literature 3 Gay and lesbian literature with focus on the history of homosexual literature and exploration of current authors. (Crosslisted course offered as ENGLISH 317, WGSS 317. WGSS 317 formerly offered as WOMEN ST 317.) Typically offered Spring.	8-21
ENGLISH / WGSS	409	Revise	Women Writers in the American West 3 Course Prerequisite: Junior standing. Diversity of writings by women in the trans-Missouri West from the 1890s to the present. (Crosslisted course offered as ENGLISH 409, WOMEN ST 409). Typically offered Fall.	Women Writers in the American West 3 Course Prerequisite: Junior standing. Diversity of writings by women in the trans-Missouri West from the 1890s to the present. (Crosslisted course offered as ENGLISH 409, WGSS 409. WGSS 409 formerly offered as WOMEN ST 409.) Typically offered Fall.	8-21
ENGLISH / WGSS	482 / 382	Revise	American Literature: 1940- Present 3 Course Prerequisite: ENGLISH 302. Advanced study of major authors and movements from the period including O'Connor, Bellow, Salinger, Baldwin, Pynchon, Morrison, Tan, and Alexie. (Crosslisted course offered as ENGLISH 482, WOMEN ST 382). Typically offered Fall and Spring.	American Literature: 1940- Present 3 Course Prerequisite: ENGLISH 302. Advanced study of major authors and movements from the period including O'Connor, Bellow, Salinger, Baldwin, Pynchon, Morrison, Tan, and Alexie. (Crosslisted course offered as ENGLISH 482, WGSS 382. WGSS 382 formerly offered as WOMEN ST 382.) Typically offered Fall and Spring.	8-21
FINE ART / WGSS	308	Revise	[M] Women Artists I 3 Women artists of the Middle Ages through the 18th century. (Crosslisted course offered as FINE ART 308, WOMEN ST 308). Typically offered Fall.	[M] Women Artists I 3 Women artists of the Middle Ages through the 18th century. (Crosslisted course offered as FINE ART 308, WGSS 308. WGSS 308 formerly offered as WOMEN ST 308.) Typically offered Fall.	8-21
FINE ART / WGSS	310	Revise	[M] Women Artists II 3 Women artists of the 19th to 20th century. (Crosslisted course offered as FINE ART	[M] Women Artists II 3 Women artists of the 19th to 20th century. (Crosslisted course offered as FINE ART	8-21

FINE ART	555	Revise	310, WOMEN ST 310). Typically offered Spring. Critical Practices 9 (4-10)	310, WGSS 310. WGSS 310 formerly offered as WOMEN ST 310.) Typically offered Spring. Critical Practices 6 (4-8) May	8-21
			May be repeated for credit; cumulative maximum 36 hours. Studio practice, critical analysis of the student's own and others' work, investigation of critical theory and visual culture through display and making art via a variety of disciplines. Typically offered Fall and Spring. Cooperative: Open to UI degree-seeking students.	be repeated for credit; cumulative maximum 36 hours. Studio practice, critical analysis of the student's own and others' work, investigation of critical theory and visual culture through display and making art via a variety of disciplines. Typically offered Fall and Spring. Cooperative: Open to UI degree-seeking students.	
FS	429	Revise	Dairy Processing 3 Course Prerequisite: MBIOS 303 or CHEM 370; PHYSICS 101. Basic dairy chemistry, microbiology, and processing from cow to consumer; dairy quality, safety, and sanitation; milk components, fluid milk, concentrated milk, cream, butter, ice cream, fermented milk, cheese, and dairy powders. Credit not granted for both FS 429 and FS 529. Recommended preparation: FS 110 or VIT ENOL 113. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	Dairy Processing 3 Course Prerequisite: MBIOS 303 or CHEM 370; 4 credits of PHYSICS 101, or PHYSICS 101 and 111. Basic dairy chemistry, microbiology, and processing from cow to consumer; dairy quality, safety, and sanitation; milk components, fluid milk, concentrated milk, cream, butter, ice cream, fermented milk, cheese, and dairy powders. Credit not granted for both FS 429 and FS 529. Recommended preparation: FS 110 or VIT ENOL 113. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	8-21
FS	432	Revise	Food Engineering 3 Course Prerequisite: FS 303; PHYSICS 101. Food engineering for improving the efficiency of food processing operations and quality processed food; heat transfer, stream, air-vapor mixtures, refrigeration and fluid flow. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	Food Engineering 3 Course Prerequisite: FS 303; 4 credits of PHYSICS 101, or PHYSICS 101 and 111. Food engineering for improving the efficiency of food processing operations and quality processed food; heat transfer, stream, air-vapor mixtures, refrigeration and fluid flow. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	8-21

HISTORY / WGSS	298	Revise	[DIVR] History of Women in American Society 3 Exploration of the many roles women have played in American society from the Colonial period through the twentieth century. (Crosslisted course offered as HISTORY 298, WOMEN ST 298).	[DIVR] History of Women in American Society 3 Exploration of the many roles women have played in American society from the Colonial period through the twentieth century. (Crosslisted course offered as HISTORY 298, WGSS 298 formerly offered as WOMEN ST 298.)	8-21
HISTORY / WGSS	335	Revise	[DIVR] Women in Latin American History 3 Survey of women's changing roles throughout Latin America from pre colonial to present. (Crosslisted course offered as HISTORY 335, WOMEN ST 335).	[DIVR] Women in Latin American History 3 Survey of women's changing roles throughout Latin America from pre colonial to present. (Crosslisted course offered as HISTORY 335, WGSS 335. WGSS 335 formerly offered as WOMEN ST 335.)	8-21
HISTORY / WGSS	350	Revise	European Women's History, 1400-1800 3 Women's experiences in Europe from the Renaissance to the Enlightenment and the ideas and roles that shaped their opportunities. (Crosslisted course offered as HISTORY 350, WOMEN ST 350).	European Women's History, 1400-1800 3 Women's experiences in Europe from the Renaissance to the Enlightenment and the ideas and roles that shaped their opportunities. (Crosslisted course offered as HISTORY 350, WGSS 350 formerly offered as WOMEN ST 350.)	8-21
HISTORY / WGSS	398	Revise	[DIVR] History of Women in the American West 3 The multicultural history of women in the west through women's literature, archives, and oral history. (Crosslisted course offered as HISTORY 398, WOMEN ST 398).	[DIVR] History of Women in the American West 3 The multicultural history of women in the west through women's literature, archives, and oral history. (Crosslisted course offered as HISTORY 398, WGSS 398. WGSS 398. formerly offered as WOMEN ST 398.)	8-21
HISTORY / WGSS	399	Revise	[DIVR] Lesbian and Gay History: Culture, Politics and Social Change in the US 3 History and theory of same-sex sexuality in the United States including identity formation, community development,	[DIVR] Lesbian and Gay History: Culture, Politics and Social Change in the US 3 History and theory of same-sex sexuality in the United States including identity formation, community development,	8-21

			politics and culture. (Crosslisted course offered as HISTORY 399, WOMEN ST 399).	politics and culture. (Crosslisted course offered as HISTORY 399, WGSS 399. WGSS 399 formerly offered as WOMEN ST 399.)	
HORT	330	Revise	Landscape Plants for Urban and Community Environments 3 (2-3) Plants for solving problems in humandominated landscapes: their characteristics, functions such as storm water management and climate change mitigation, ecology, identification, and selection. Recommended preparation: BIOLOGY 120 or HORT 202. Typically offered Fall.	Landscape Plants for Urban and Community Environments 3 (2-3) Plants for solving problems in humandominated landscapes: their characteristics, functions such as storm water management and climate change mitigation, ecology, identification, and selection. Recommended preparation: BIOLOGY 120 or HORT 202. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	8-21
HORT / VIT ENOL	399	Revise	Professional Work Experience V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Course Prerequisite: Admitted to the IPS major or by interview; junior standing. Planned and supervised work experience. (Crosslisted course offered as HORT 399, VIT ENOL 399). Typically offered Fall, Spring, and Summer. S, F grading.	Professional Work Experience V 1 (0-3) to 4 (0-12) May be repeated for credit; cumulative maximum 8 hours. Course Prerequisite: Admitted to the Viticulture and Enology major, IPS major or by interview; junior standing. Planned and supervised work experience. (Crosslisted course offered as HORT 399, VIT ENOL 399). Typically offered Fall, Spring, and Summer. S, F grading.	8-21
MBIOS	465	Revise	Principles of Biophysical Chemistry 3 Course Prerequisite: MBIOS 303; MATH 140 or 171; PHYSICS 102 or concurrent enrollment, or PHYSICS 202 or concurrent enrollment. Biochemical reactions and processes, molecular recognition, coupled reactions, enzyme catalysis, analysis of macromolecular structure by electrophoresis, sedimentation, viscosity, and spectroscopy. Typically offered Spring.	Principles of Biophysical Chemistry 3 Course Prerequisite: MBIOS 303; MATH 140 or 171; 4 credits of PHYSICS 102 or 202, or PHYSICS 102 and 112 or concurrent enrollment, or PHYSICS 202 and 212 or concurrent enrollment. Biochemical reactions and processes, molecular recognition, coupled reactions, enzyme catalysis, analysis of macromolecular structure by electrophoresis, sedimentation,	8-21

				viscosity, and spectroscopy. Typically offered Spring.	
ME / MSE	241	Revise	Engineering Computations 3 Introduction to the computational methods used for solving numerical problems in engineering. (Crosslisted course offered as ME 241, MSE 241.) Typically offered Fall and Spring.	Engineering Computations 3 Course Prerequisite: MATH	8-21
ME	301	Revise	Fundamentals of Thermodynamics 3 Course Prerequisite: PHYSICS 201 with a grade of C or better. Thermodynamic properties of matter, ideal and real gases, work and heat, first and second laws and their application to engineering systems. Typically offered Fall and Spring. Cooperative: Open to UI degree-seeking students.	Fundamentals of Thermodynamics 3 Course Prerequisite: 4 credits of PHYSICS 201 with a grade of C or better, or PHYSICS 201 and 211, both with a C or better. Thermodynamic properties of matter, ideal and real gases, work and heat, first and second laws and their application to engineering systems. Typically offered Fall and Spring. Cooperative: Open to UI degree-seeking students.	8-21
ME	313	Revise	Engineering Analysis 3 (2-3) Course Prerequisite: MATH 315 or concurrent enrollment; CE 215; ME 116; E E 221, CPT S 121, CPT S 131, or CPT S 251. Analysis and modeling of engineering problems utilizing numerical and mathematical techniques and computers. Typically offered Fall and Spring. Cooperative: Open to UI degree-seeking students.	Engineering Analysis 3 (2-3) Course Prerequisite: MATH 315 or concurrent enrollment; CE 215; ME 116; E E 221, CPT S 121, CPT S 131, CPT S 251, ME 241, or MSE 241. Analysis and modeling of engineering problems utilizing numerical and mathematical techniques and computers. Typically offered Fall and Spring. Cooperative: Open to UI degree-seeking students.	8-21
ME / MSE	413	Revise	Mechanics of Solids-3 Course Prerequisite: CE 215; MSE 201. Elasticity, elastic stress distributions; plastic deformation of single and	Mechanical Behavior of Materials 3 Course Prerequisite: CE 215 and MSE 201; OR MSE 202. Elasticity, elastic stress distributions;	8-21

ME	415	Davisa	polycrystals; introduction to dislocation theory and its applications; creep, fracture, fatigue. (Crosslisted course offered as MSE 413, ME 413). Typically offered Fall.	plastic deformation of single and polycrystals; introduction to dislocation theory and its applications; creep, fracture, fatigue. (Crosslisted course offered as MSE 413, ME 413). Typically offered Fall.	0.21
ME	415	Revise	[M] Engineering Design 3 Course Prerequisite: ME 316 or concurrent enrollment; admitted to the major in Mechanical Engineering. Systems and component design; product development from specifications to manufacturing; team-based CAD design projects; engineering economics; engineering professional skills. Typically offered Fall and Spring.	[M] Engineering Design 3 Course Prerequisite: ME 304 or concurrent enrollment; ME 316 or concurrent enrollment and ME 348 or concurrent enrollment enrollment; admitted to the major in Mechanical Engineering. Systems and component design; product development from specifications to manufacturing; team-based CAD design projects; engineering economics; engineering professional skills. Typically offered Fall and Spring.	8-21
ME	416	Revise	[CAPS] Mechanical Systems Design 3 (1-6) Course Prerequisite: Admitted major in Mechanical Engineering; ME 304; ME 348; ME 415; senior standing; OR admitted major in Materials Science Engineering; MSE 320; MSE 413 or concurrent enrollment; one of MSE 401, 402, or 403; senior standing. Integrative design in mechanical engineering; multidisciplinary design project considering both technical and non-technical contexts; organizational dynamics and communications. Typically offered Fall and Spring.	[CAPS] Mechanical Systems Design 3 (1-6) Course Prerequisite: Major in ME; ME 415; senior standing; OR major in MSE; MSE 320; MSE 413 or concurrent enrollment; one of MSE 331, 332, or 333; OR major in MSE; MSE 202 with a C or better; MSE 318 with a C or better; MSE 413 or concurrent enrollment. Integrative design in mechanical engineering; multidisciplinary design project considering both technical and non-technical contexts; organizational dynamics and communications. Typically offered Fall and Spring.	8-21
ME	475	Revise	Manufacturing Enterprise Systems Automation and Product Realization 3 (2-3) Course Prerequisite: ME 310; ME 311 or 312. Manufacturing automation and product	Manufacturing Enterprise Systems Automation and Product Realization 3 (2-3) Course Prerequisite: ME 310 and 311, or ME 312. Manufacturing automation and	8-21

			realization; information	product realization; information	
			technology and electronic data in manufacturing enterprise systems; product life-cycle management (PLM); sustainable and green manufacturing. Field trip to manufacturing industries required. Typically offered Fall.	technology and electronic data in manufacturing enterprise systems; product life-cycle management (PLM); sustainable and green manufacturing. Field trip to manufacturing industries required. Typically offered Fall.	
ME	485	Revise	Introduction to Robotics and AI 3 An exploration of the Robot Operating System (ROS) and solutions to simple AI problems using existing machine learning frameworks. Typically offered Spring.	Introduction to Robotics and AI 3 Course Prerequisite: CPT S 121, CPT S 131, ME 241, or MSE 241; ME 348; ME 401. An exploration of the Robot Operating System (ROS) and solutions to simple AI problems using existing machine learning frameworks. Typically offered Spring.	8-21
MECH	211	Revise	Statics 3 Course Prerequisite: MATH 172 or 182 or concurrent enrollment; PHYSICS 201 or concurrent enrollment. Static equilibrium analysis of particles and rigid bodies, free-body diagrams, moment diagrams, friction, center of gravity, moments of inertia. Typically offered Fall.	Statics 3 Course Prerequisite: MATH 172 or 182 or concurrent enrollment; 4 credits of PHYSICS 201, or PHYSICS 201 and 211 or concurrent enrollment. Static equilibrium analysis of particles and rigid bodies, free-body diagrams, moment diagrams, friction, center of gravity, moments of inertia. Typically offered Fall.	8-21
МЕСН	251	Revise	Numerical Computing for Engineers 2 Course Prerequisite: MATH 172 or 182; MATH 220 or concurrent enrollment. Introduction to numerical computing in the context of problem solving including data analysis, data visualization, MATLAB programming and numerical techniques. Typically offered Fall.	Numerical Computing for Engineers 2 Course Prerequisite: MATH 172 or 182, or concurrent enrollment; MATH 220 or concurrent enrollment enrollment. Introduction to numerical computing in the context of problem solving including data analysis, data visualization, MATLAB programming and numerical techniques. Typically offered Fall.	8-21
MECH	301	Revise	Thermodynamics 3 Course Prerequisite: PHYSICS 201. Thermodynamic properties of matter, ideal and real gases, work and heat, first and second	Thermodynamics 3 Course Prerequisite: 4 credits of PHYSICS 201, or PHYSICS 201 and 211. Thermodynamic properties of matter, ideal and	8-21

			laws and their application to engineering systems. Typically offered Fall.	real gases, work and heat, first and second laws and their application to engineering systems. Typically offered Fall.	
МЕСН	304	Revise	Introduction to Electronic Circuits 3 Course Prerequisite: MATH 315 or concurrent enrollment; PHYSICS 202. Introduction to DC and AC circuits, analog electronic components, digital circuits, and engineering measurements. Typically offered Fall.	Introduction to Electronic Circuits 3 Course Prerequisite: MATH 315 or concurrent enrollment; 4 credits of PHYSICS 202, or PHYSICS 202 and 212. Introduction to DC and AC circuits, analog electronic components, digital circuits, and engineering measurements. Typically offered Fall.	8-21
МЕСН	309	Revise	[M] Introduction of Engineering Materials 3 (2-3) Course Prerequisite: MECH 215; CHEM 105 or concurrent enrollment; PHYSICS 201 or concurrent enrollment. Structure of materials, phase equilibrium, phase transformations, mechanical failure, and mechanical properties; materials testing laboratory. Typically offered Fall.	[M] Introduction of Engineering Materials 3 (2-3) Course Prerequisite: MECH 215; CHEM 105 or concurrent enrollment; 4 credits of PHYSICS 201, or PHYSICS 201 and 211 or concurrent enrollment. Structure of materials, phase equilibrium, phase transformations, mechanical failure, and mechanical properties; materials testing laboratory. Typically offered Fall.	8-21
MECH	431	Revise	Semiconductor Devices 3 Course Prerequisite: CHEM 105; PHYSICS 202. Crystal properties, energy bands, semiconductor charge carriers, p-n junctions, field-effect transistors, bipolar junction transistors, optoelectronic devices, integrated circuits. Typically offered Spring.	Semiconductor Devices 3 Course Prerequisite: CHEM 105; 4 credits of PHYSICS 202, or PHYSICS 202 and 212. Crystal properties, energy bands, semiconductor charge carriers, p-n junctions, field- effect transistors, bipolar junction transistors, optoelectronic devices, integrated circuits. Typically offered Spring.	8-21
МЕСН	438	Revise	Microfabrication Technology 3 Course Prerequisite: CHEM 105; MATH 315; PHYSICS 202. Microelectronic fabrication technology, semiconductor material, diffusion, thermal oxidation, ion implantation,	Microfabrication Technology 3 Course Prerequisite: CHEM 105; MATH 315; 4 credits of PHYSICS 202, or PHYSICS 202 and 212. Microelectronic fabrication technology, semiconductor material,	8-21

			lithography, etching, thin film deposition, CMOS integration and MEMS. Credit not granted for both MECH 438 and MECH 538. Offered at 400 and 500 level. Typically offered Fall.	diffusion, thermal oxidation, ion implantation, lithography, etching, thin film deposition, CMOS integration and MEMS. Credit not granted for both MECH 438 and MECH 538. Offered at 400 and 500 level. Typically offered Fall.	
MECH	441	Revise	Fundamentals of Renewable Energy 3 Course Prerequisite: PHYSICS 202; MATH 273. An examination of the fundamentals and the impact of renewable energy technology, including wind, solar, hydroelectricity, and alternate fuels. Typically offered Spring.	Fundamentals of Renewable Energy 3 Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212; MATH 273. An examination of the fundamentals and the impact of renewable energy technology, including wind, solar, hydroelectricity, and alternate fuels. Typically offered Spring.	8-21
MECH	450	Revise	Advanced Topics in Micro and Nano Technology 3 (2-3) Course Prerequisite: CHEM 106; PHYSICS 202. Microfabrication technology, bulk and surface micromachining, sensors and actuators, microelectromechanical systems (MEMS), nanofabrication technology, micro/nano scale material and device measurements. Credit not granted for both MECH 450 and MECH 550. Offered at 400 and 500 level. Typically offered Spring.	not granted for both MECH 450	8-21
MSE	302	Revise	Electronic Materials 3 Course Prerequisite: CHEM 105; PHYSICS 202 or concurrent enrollment. Structure of materials, electronic structure of solids; thermal, electrical, dielectric, and magnetic properties of materials; semiconductors processing. Typically offered Fall and Spring.	Electronic Materials 3 Course Prerequisite: CHEM 105; 4 credits of PHYSICS 202, or PHYSICS 202 and 212 or concurrent enrollment. Structure of materials, electronic structure of solids; thermal, electrical, dielectric, and magnetic properties of materials; semiconductors processing. Typically offered Fall and Spring.	8-21

MUS / WGSS	363	Revise	[DIVR] Women in Music 3 Intersections of gender, class, race, and culture with popular and country music. (Crosslisted course offered as MUS 363, WOMEN ST 363). Typically offered Spring and Summer.	[DIVR] Women in Music 3 Intersections of gender, class, race, and culture with popular and country music. (Crosslisted course offered as MUS 363, WGSS 363. WGSS 363 formerly offered as WOMEN ST 363.) Typically offered Spring and Summer.	8-21
MUS	597	Revise	Performance Studies for Distance Learners ¥ 2 (0-6) to 4 (0-12) May be repeated for credit; cumulative maximum 6 hours. Course Prerequisite: Admitted to the Online Masters of Arts in Music program; graduate advisor permission; instructor permission. Participation in video conference-based lessons or completion of performance- based projects, i.e., a recording project or concert presented in the online student's home community submitted as a video/audio recording.	Performance Studies for Distance Learners 2 (0-6) May be repeated for credit; cumulative maximum 6 hours. Course Prerequisite: Admitted to the Online Masters of Arts in Music program; graduate advisor permission; instructor permission. Participation in video conference-based lessons or completion of performance- based projects, i.e., a recording project or concert presented in the online student's home community submitted as a video/audio recording.	8-21
NEUROSCI	430	Revise	[M] Principles of Neurophysiology 4 (3-3) Course Prerequisite: NEUROSCI 302; PHYSICS 102, 202 or 206. Advanced exploration of the principles underlying cellular, sensory, motor and integrative functions of the nervous system. Recommended preparation: MBIOS 303. Typically offered Fall.	[M] Principles of Neurophysiology 4 (3-3) Course Prerequisite: NEUROSCI 302; 4 credits of PHYSICS 102 or 202, or PHYSICS 102 and 112, or PHYSICS 202 and 212, or PHYSICS 206. Advanced exploration of the principles underlying cellular, sensory, motor and integrative functions of the nervous system. Recommended preparation: MBIOS 303. Typically offered Fall.	8-21
PHIL / POL S / WGSS	425	Revise	Philosophy and Feminism 3 Course Prerequisite: PHIL 101, WOMEN ST 101, or WOMEN ST 120. Feminist philosophy as critique of Western philosophical tradition and as alternate framework for	Philosophy and Feminism 3 Course Prerequisite: PHIL 101, WGSS 101, or WGSS 120. Feminist philosophy as critique of Western philosophical tradition and as alternate framework for thought.	8-21

PHYSICS	102	Revise	thought. (Crosslisted course offered as PHIL 425, POL S 425, WOMEN ST 425). Typically offered Fall and Spring. General Physics 4 (3-3) Course Prerequisite: PHYSICS 101 with a grade of C or better;	(Crosslisted course offered as PHIL 425, POL S 425, WGSS 425. WGSS 425 formerly offered as WOMEN ST 425.) Typically offered Fall and Spring. General Physics 3 Course Prerequisite: 4 credits of PHYSICS 101 with a C or	8-21
			MATH 108 with a grade of C or better, a minimum ALEKS math placement score 75%, or passing MATH 140, 171, or 202. Algebra/trigonometry-based physics; topics in electricity, magnetism, optical phenomena, relativity, and quantum theory; oriented toward non-physical science majors. Typically offered Fall, Spring, and Summer.	hetter, or PHYSICS 101 and 111 with a C or better; PHYSICS 112 or concurrent enrollment; MATH 108 with a grade of C or better, a minimum ALEKS math score 75%, or passing MATH 140, 171, or 202. Algebra/trigonometry-based physics; topics in electricity, magnetism, optical phenomena, relativity, and quantum theory; oriented toward non-physical science majors. Typically offered Fall, Spring, and Summer.	
PHYSICS	103	Revise	Problem Solving for Physics 101 1 Course Prerequisite: Concurrent enrollment in PHYSICS 101. Small class environment for students who desire focused attention on problem solving skills as applied to PHYSICS 101 materials. S, F grading.	Problem Solving for Physics 101 1 Course Prerequisite: Concurrent enrollment in PHYSICS 101 and 111. Small class environment for students who desire focused attention on problem solving skills as applied to PHYSICS 101 and 111 materials. S, F grading.	8-21
PHYSICS	104	Revise	Problem Solving for Physics 102 1 Course Prerequisite: Concurrent enrollment in PHYSICS 102. Small class environment for students who	Problem Solving for Physics 102 1 Course Prerequisite: Concurrent enrollment in PHYSICS 102 and 112. Small class environment for students	8-21
			desire focused attention on problem solving skills as applied to PHYSICS 102 materials. S, F grading.	who desire focused attention on problem solving skills as applied to PHYSICS 102 materials. S, F grading.	

			MATH 182 with a C or better. Calculus-based physics, topics in electricity, magnetism, electromagnetics, D/C and A/C circuits, optics, reflection, refraction, interference, diffraction, polarization. Typically offered Fall, Spring, and Summer.	PHYSICS 205 with a C or better; PHYSICS 212 or concurrent enrollment; MATH 172 or 182 with a C or better. Calculus-based physics, topics in electricity, magnetism, electromagnetics, D/C and A/C circuits, optics, reflection, refraction, interference, diffraction, polarization. Typically offered Fall, Spring, and Summer.	
PHYSICS	203	Revise	Problem Solving for Physics 201 1 Course Prerequisite: Concurrent enrollment in PHYSICS 201. Small class environment for students who desire focused attention on problem solving skills as applied to PHYSICS 201 materials. S, F grading.	Problem Solving for Physics 201 1 Course Prerequisite: Concurrent enrollment in PHYSICS 201 and 211. Small class environment for students who desire focused attention on problem solving skills as applied to PHYSICS 201 materials. S, F grading.	8-21
PHYSICS	204	Revise	Problem Solving for Physics 202 1 Course Prerequisite: Concurrent enrollment in PHYSICS 202. Small class environment for students who desire focused attention on problem solving skills as applied to PHYSICS 202 materials. S, F grading.	Problem Solving for Physics 202 1 Course Prerequisite: Concurrent enrollment in PHYSICS 202 and 212. Small class environment for students who desire focused attention on problem solving skills as applied to PHYSICS 202 materials. S, F grading.	8-21
PHYSICS	206	Revise	Physics for Scientists and Engineers II - Honors 5 (3-5) Course Prerequisite: PHYSICS 201 with a C or better or PHYSICS 205 with a C or better; MATH 172 with a C or better or MATH 182 with a C or better. Calculus-based physics, honors section; electricity, magnetism, light, topics in modern physics. Typically offered Fall.	Physics for Scientists and Engineers II - Honors 5 (3-5) Course Prerequisite: 4 credits of PHYSICS 201 with a C or better, or PHYSICS 201 and 211 with a C or better, or PHYSICS 205 with a C or better; MATH 172 with a C or better or MATH 182 with a C or better. Calculus-based physics, honors section; electricity, magnetism, light, topics in modern physics. Typically offered Fall.	8-21
PHYSICS	303	Revise	Modern Physics I 3 Course Prerequisite: MATH 220 or concurrent enrollment or MATH 230 or concurrent	Modern Physics I 3 Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212 or concurrent	8-21

			enrollment; PHYSICS 202 or concurrent enrollment or PHYSICS 206 or concurrent enrollment. Quantum and relativity theories with applications to atomic, solid state, nuclear and elementary particle physics. Typically offered Fall.	enrollment, or PHYSICS 206 or concurrent enrollment; MATH 220 or concurrent enrollment or MATH 230 or concurrent enrollment. Quantum and relativity theories with applications to atomic, solid state, nuclear and elementary particle physics. Typically offered Fall.	
PHYSICS	320	Revise	Mechanics 3 Course Prerequisite: MATH 315 or concurrent enrollment; MATH 220 or concurrent enrollment or MATH 230 or concurrent enrollment; PHYSICS 202 or 206. Particle motion in one-, two-, and three-dimensions; motions of systems of particles; rigid body motion; Lagrange's equations. Typically offered Fall.	Mechanics 3 Course Prerequisite: MATH 315 or concurrent enrollment; MATH 220 or concurrent enrollment or MATH 230 or concurrent enrollment; 4 credits of PHYSICS 202, or PHYSICS 202 and 212, or PHYSICS 206. Particle motion in one-, two-, and three-dimensions; motions of systems of particles; rigid body motion; Lagrange's equations. Typically offered Fall.	8-21
PHYSICS	330	Revise	Thermal Physics 3 Course Prerequisite: MATH 273 or 283; PHYSICS 202 or 206. Thermal behavior of systems; energy and entropy; equations of state; changes of phase; elements of continuum and statistical approaches. Typically offered Spring.	Thermal Physics 3 Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212, or PHYSICS 206; MATH 273 or 283. Thermal behavior of systems; energy and entropy; equations of state; changes of phase; elements of continuum and statistical approaches. Typically offered Spring.	8-21
PHYSICS	341	Revise	Electricity and Magnetism I 3 Course Prerequisite: MATH 315 or concurrent enrollment; PHYSICS 202 or 206. Electrostatic fields, magnetic fields, dielectric and magnetic media. Typically offered Fall.	Electricity and Magnetism I 3 Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212, or PHYSICS 206; MATH 315 or concurrent enrollment. Electrostatic fields, magnetic fields, dielectric and magnetic media. Typically offered Fall.	8-21
PHYSICS	410	Revise	Electronics 4 (2-6) Course Prerequisite: PHYSICS 202 or 206. Laboratory construction and investigation of electronic	Electronics 4 (2-6) Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212, or PHYSICS 206.	8-21

			circuits employed in research instruments. Typically offered Fall.	Laboratory construction and investigation of electronic circuits employed in research instruments. Typically offered Fall.	
PHYSICS	466	Revise	Biological Physics 3 Course Prerequisite: CHEM 106 or 116; MATH 172 or 182; PHYSICS 202 or 206. Fundamental physics and thermodynamics of the cell; mechanics of biomolecular machines. Credit not granted for both PHYSICS 466 and PHYSICS 566. Offered at 400 and 500 level. Typically offered Fall.	Biological Physics 3 Course Prerequisite: 4 credits of PHYSICS 202, or PHYSICS 202 and 212, or PHYSICS 206; CHEM 106 or 116; MATH 172 or 182. Fundamental physics and thermodynamics of the cell; mechanics of biomolecular machines. Credit not granted for both PHYSICS 466 and PHYSICS 566. Offered at 400 and 500 level. Typically offered Fall.	8-21
POL S / WGSS	305	Revise	Gender and Politics 3 Role of gender in political behavior; voting and political participation; women as subjects and objects of political systems. (Crosslisted course offered as POL S 305, WOMEN ST 305). Typically offered Spring and Summer.	Gender and Politics 3 Role of gender in political behavior; voting and political participation; women as subjects and objects of political systems. (Crosslisted course offered as POL S 305, WGSS 305. WGSS 305 formerly offered as WOMEN ST 305.) Typically offered Spring and Summer.	8-21
PSYCH / WGSS	230	Revise	Human Sexuality 3 Sexuality in personal development; personal, cultural, biological influences on sexual identification and behavior; fertility, reproduction, sexual functioning, sexuality and personality. (Crosslisted course offered as PSYCH 230, WOMEN ST 230). Recommended preparation: PSYCH 105. Typically offered Fall and Spring.	Human Sexuality 3 Sexuality in personal development; personal, cultural, biological influences on sexual identification and behavior; fertility, reproduction, sexual functioning, sexuality and personality. (Crosslisted course offered as PSYCH 230, WGSS 230. WGSS 230 formerly offered as WOMEN ST 230.) Recommended preparation: PSYCH 105. Typically offered Fall and Spring.	8-21
PSYCH / WGSS	324	Revise	Psychology of Gender 3 Contemporary overview of the psychological theory and research on sex and gender. (Crosslisted course offered as	Psychology of Gender 3 Contemporary overview of the psychological theory and research on sex and gender. (Crosslisted course offered as	8-21

			PSYCH 324, WOMEN ST 324). Recommended preparation: PSYCH 105. Typically offered Fall, Spring, and Summer.	PSYCH 324, WGSS 324. WGSS 324 formerly offered as WOMEN ST 324.) Recommended preparation: PSYCH 105. Typically offered Fall, Spring, and Summer.	
SOC / WGSS	251	Revise	[DIVR] The Sociology of Sex, Relationships, and Marriage 3 Social and personal factors in mate selection; the sociology of sexuality; development of gender roles; and intimate relationships and marriage. (Crosslisted course offered as SOC 251, WOMEN ST 251). Typically offered Fall, Spring, and Summer.	[DIVR] The Sociology of Sex, Relationships, and Marriage 3 Social and personal factors in mate selection; the sociology of sexuality; development of gender roles; and intimate relationships and marriage. (Crosslisted course offered as SOC 251, WGSS 251. WGSS 251 formerly offered as WOMEN ST 251.) Typically offered Fall, Spring, and Summer.	8-21
SOC/WGSS	351	Revise	[DIVR] The Family 3 Family system and its interaction patterns; family formation and dissolution; marital and partner relations, divorce, sexuality, parenting, work-family balance. (Crosslisted course offered as SOC 351, WOMEN ST 351). Recommended preparation: SOC 101. Typically offered Fall, Spring, and Summer.	[DIVR] The Family 3 Family system and its interaction patterns; family formation and dissolution; marital and partner relations, divorce, sexuality, parenting, work-family balance. (Crosslisted course offered as SOC 351, WGSS 351. WGSS 351 formerly offered as WOMEN ST 351.) Recommended preparation: SOC 101. Typically offered Fall, Spring, and Summer.	8-21
SOC/WGSS	384	Revise	Sociology of Gender 3 Construction and maintenance of gender and gender inequality in American society. (Crosslisted course offered as SOC 384, WOMEN ST 384). Recommended preparation: SOC 101. Typically offered Fall, Spring, and Summer.	Sociology of Gender 3 Construction and maintenance of gender and gender inequality in American society. (Crosslisted course offered as SOC 384, WGSS 384. WGSS 384 formerly offered as WOMEN ST 384.) Recommended preparation: SOC 101. Typically offered Fall, Spring, and Summer.	8-21
SOC / WGSS	390	Revise	Gender and Work 3 Gender and inequality at work including occupational segregation, wage inequality and balancing work and family.	Gender and Work 3 Gender and inequality at work including occupational segregation, wage inequality and balancing work and family.	8-21

			(Crosslisted course offered as SOC 390, WOMEN ST 390). Typically offered Spring.	(Crosslisted course offered as SOC 390, WGSS 390. WGSS 390 formerly offered as WOMEN ST 390.) Typically offered Spring.	
SOE	315	Revise	Water and the Earth 3 (2-3) Course Prerequisite: CHEM 102 or 106; one of MATH 108, 140, 171, 172, 182, 201, 202, or ENGR 107; one of SOE 101, SOE 102, PHYSICS 101, or PHYSICS 201. Global hydrologic cycle, including rivers and weathering, groundwater, rainwater and the atmosphere, oceans, human impacts. Field research required. Typically offered Spring.	Water and the Earth 3 (2-3) Course Prerequisite: CHEM 102 or 106; one of MATH 108, 140, 171, 172, 182, 201, 202, or ENGR 107; one of SOE 101, SOE 102, 4 credits PHYSICS 101 or 201, or PHYSICS 101 and 111, or PHYSICS 201 and 211. Global hydrologic cycle, including rivers and weathering, groundwater, rainwater and the atmosphere, oceans, human impacts. Field research required. Typically offered Spring.	8-21
SOE	463	Revise	Water in the Environment 3 Course Prerequisite: One semester of MATH 140, 171, PHYSICS 101, 201, or 205. Water flows in the natural environment, including cloud formation, rainfall, evaporation, infiltration, groundwater, river flows, lakes, estuaries, mixing, and erosion.	Water in the Environment 3 Course Prerequisite: MATH 140 or 171, or 4 credits PHYSICS 101 or 201, or PHYSICS 101 and 111, or PHYSICS 201 and 211, or PHYSICS 205. Water flows in the natural environment, including cloud formation, rainfall, evaporation, infiltration, groundwater, river flows, lakes, estuaries, mixing, and erosion.	8-21
SOE	474	Revise	[CAPS] [M] Physics and Chemistry of the Earth 4 (3-3) Course Prerequisite: CHEM 101 or 105; CHEM 102 or 106; MATH 171; PHYSICS 101 or 201; SOE 101, 102, or 210; junior standing. Earth's operations as described by subdisciplines of geology, chemistry, physics, and mathematics; earth's composition as related to solar system formation. Typically offered Odd Years - Spring.	[CAPS] [M] Physics and Chemistry of the Earth 4 (3-3) Course Prerequisite: CHEM 101 or 105; CHEM 102 or 106; 4 credits of PHYSICS 101 or 201, or PHYSICS 101 and 111, or PHYSICS 201 and 211; SOE 101, 102, or 210; junior standing. Earth's operations as described by sub-disciplines of geology, chemistry, physics, and mathematics; earth's composition as related to solar system formation. Typically offered Odd Years - Spring.	8-21

SOIL SCI	513	Revise	Environmental Soil Physics 3 Physical properties of soils and their relationships to moisture, aeration, and temperature; plant-soil-atmospheric relationships; solute transport and soil salinity. Recommended preparation: SOIL SCI 201 and general physics. Typically offered Odd Years - Fall.	Environmental Soil Physics 3 Physical properties of soils and their relationships to moisture, aeration, and temperature; plant-soil-atmospheric relationships; solute transport and soil salinity. Recommended preparation: SOIL SCI 201 and general physics. Typically offered Odd Years - Fall. Cooperative: Open to UI degree-seeking students.	8-21
VET PH	308	Revise	Functional Anatomy of Domestic Animals 4 (3-3) Macroscopic and microscopic functional morphology of the cell, tissues, and organ systems of domestic animals; emphasis on veterinary application. Recommended preparation: BIOLOGY 107 or junior standing. Typically offered Spring.	Functional Anatomy of Domestic Animals 1 (0-3) Macroscopic and microscopic functional morphology of the cell, tissues, and organ systems of domestic animals; emphasis on veterinary application. Recommended preparation: BIOLOGY 107 or junior standing. Typically offered Spring.	1-22
WGSS	101	Revise	[DIVR] Introduction to Women's, Gender, and Sexuality Studies 3 Analysis of gender and power in contemporary society from perspectives of different racial, ethnic and socioeconomic groups.	[DIVR] Introduction to Women's, Gender, and Sexuality Studies 3 Analysis of gender and power in contemporary society from perspectives of different racial, ethnic and socioeconomic groups. (Formerly WOMEN ST 101.)	8-21
WGSS	120	Revise	[DIVR] Sex, Race, and Reproduction in Global Health Politics 3 Examination of how cultures, institutions, states, and economies influence reproductive health inequalities around gender, sexuality, race, class, and national identity. Typically offered Fall.	[DIVR] Sex, Race, and Reproduction in Global Health Politics 3 Examination of how cultures, institutions, states, and economies influence reproductive health inequalities around gender, sexuality, race, class, and national identity. (Formerly WOMEN ST 120.) Typically offered Fall.	8-21
WGSS / ENGLISH	211	Revise	[HUM] Sex Matters: Introduction to Queer Culture and Literature 3 Introduction to Lesbian/queer cultural production focusing on popular culture, fiction, and	[HUM] Sex Matters: Introduction to Queer Culture and Literature 3 Introduction to Lesbian/queer cultural production focusing on popular culture, fiction, and	8-21

			film; work from various queer communities in its cultural/historical context. (Crosslisted course offered as WOMEN ST 211, ENGLISH 211). Typically offered Fall and Spring.	film; work from various queer communities in its cultural/historical context. (Crosslisted course offered as WGSS 211, ENGLISH 211. WGSS 211 formerly offered as WOMEN ST 211.) Typically offered Fall and Spring.	
WGSS	220	Revise	[DIVR] Gender, Culture and Science 3 Analysis of intersections of gender, sexuality, race, and culture with science and technology.	[DIVR] Gender, Culture and Science 3 Analysis of intersections of gender, sexuality, race, and culture with science and technology. (Formerly WOMEN ST 220.)	8-21
WGSS	277	Revise	Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.	Special Topics: Study Abroad V 1-15 May be repeated for credit. (Formerly WOMEN ST 277.) S, F grading.	8-21
WGSS / ENGLISH / SOC	300 / 310	Revise	[DIVR] [M] Intersections of Race, Class, Gender, and Sexuality 3 Course Prerequisite: SOC 101 or WOMEN ST 101. Intersections between race, class and gender through case studies; experiences in interdisciplinary methods. (Crosslisted course offered as WOMEN ST 300, ENGLISH 310, SOC 300). Typically offered Fall, Spring, and Summer.	[DIVR] [M] Intersections of Race, Class, Gender, and Sexuality 3 Course Prerequisite: SOC 101 or WGSS 101. Intersections between race, class and gender through case studies; experiences in interdisciplinary methods. (Crosslisted course offered as WGSS 300, ENGLISH 310, SOC 300. WGSS 300 formerly offered as WOMEN ST 300.) Typically offered Fall, Spring, and Summer.	8-21
WGSS	301	Revise	Introduction to Critical Race Feminism 3 Studies structural inequalities in the US through historically grounded analysis of social systems, race, gender, and the law.	Introduction to Critical Race Feminism 3 Studies structural inequalities in the US through historically grounded analysis of social systems, race, gender, and the law. (Formerly WOMEN ST 301.)	8-21
WGSS / SOC	302	Revise	Contemporary Masculinities 3 Analysis of the development of masculinity in its biological and cultural forms. (Crosslisted course offered as WOMEN ST 302, SOC 302). Typically offered Spring and Summer.	Contemporary Masculinities 3 Analysis of the development of masculinity in its biological and cultural forms. (Crosslisted course offered as WGSS 302, SOC 302. WGSS 302 formerly offered as WOMEN ST 302.)	8-21

WGSS	321	Revise	Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women.	Topics in Women's Studies V 1-3 May be repeated for credit; cumulative maximum 9 hours. Focused study of subjects/issues relating to women. (Formerly WOMEN ST 321.)	8-21
WGSS / ANTH	332 / 317	Revise	Global Feminisms 3 An interdisciplinary approach to examining women's roles and experiences throughout the world and different approaches to feminism/feminisms. (Crosslisted course offered as WOMEN ST 332, ANTH 317). Typically offered Spring.	Global Feminisms 3 Course Prerequisite: ANTH 101, WGSS 101, or WGSS 120. An interdisciplinary approach to examining women's roles and experiences throughout the world and different approaches to feminism/feminisms. (Crosslisted course offered as WGSS 332, ANTH 317. WGSS 332 formerly offered as WOMEN ST 332.) Typically offered Spring.	8-21
WGSS / HISTORY	336	Revise	History of Sexualities 3 Historical analysis of the social construction of sexualities in intersection with race and class within national and transnational contexts. (Crosslisted course offered as WOMEN ST 336, HISTORY 336).	History of Sexualities 3 Historical analysis of the social construction of sexualities in intersection with race and class within national and transnational contexts. (Crosslisted course offered as WGSS 336, HISTORY 336. WGSS 336 formerly offered as WOMEN ST 336.)	8-21
WGSS	338	Revise	race, class, sexuality, and ability	[HUM] Gender, Race, and Popular Culture 3 Feminist study of intersections of gender, race, class, sexuality, and ability through popular film, television, digital media, art, literature, and performance. (Formerly offered as WOMEN ST 338.) Typically offered Fall, Spring, and Summer.	8-21
WGSS	340	Revise	Third World Women and Film 3 Focus on the intersections of race, gender, class, sexuality, and nation in third world women's films.	Third World Women and Film 3 Focus on the intersections of race, gender, class, sexuality, and nation in third world women's films. (Formerly WOMEN ST 340.)	8-21
WGSS / HISTORY	369	Revise	[ARTS] Queer Identities in Contemporary Cultures 3 Course Prerequisite: CES 101,	[ARTS] Queer Identities in Contemporary Cultures 3 Course Prerequisite: CES 101,	8-21

			HISTORY 105, HISTORY 305, WOMEN ST 101, or WOMEN ST 120. Analysis of roots/legacies of creative resistance writing by Queer communities of color; students learn to produce creative resistance work. (Crosslisted course offered as WOMEN ST 369, HISTORY 369).	HISTORY 105, HISTORY 305, WGSS 101, or WGSS 120. Analysis of roots/legacies of creative resistance writing by Queer communities of color; students learn to produce creative resistance work. (Crosslisted course offered as WGSS 369, HISTORY 369. WGSS 369 formerly offered as WOMEN ST 369.)	
WGSS / SOC	385	Revise	[DIVR] Introduction to Lesbian, Gay, Bisexual, and Transgender Studies 3 Course Prerequisite: Junior standing. Interdisciplinary exploration of issues related to gender and sexuality, explored transhistorically and cross- culturally, including race, class and age differences. (Crosslisted course offered as WOMEN ST 385, SOC 385). Typically offered Spring.	[DIVR] Introduction to Lesbian, Gay, Bisexual, and Transgender Studies 3 Course Prerequisite: Junior standing. Interdisciplinary exploration of issues related to gender and sexuality, explored transhistorically and cross- culturally, including race, class and age differences. (Crosslisted course offered as WGSS 385, SOC 385. WGSS 385 formerly offered as WOMEN ST 385.) Typically offered Spring.	8-21
WGSS	406	Revise	Women and Work in Global Contexts 3 An interdisciplinary approach to women's labor in global contexts that analyzes differences among women as well as possible shared interests.	Women and Work in Global Contexts 3 An interdisciplinary approach to women's labor in global contexts that analyzes differences among women as well as possible shared interests. (Formerly WOMEN ST 406.)	8-21
WGSS	410	Revise	B or better, or 481 with a B or better; by interview only. Supervised experience in approved campus or community	Internship V 1-12 May be repeated for credit; cumulative maximum 12 hours. Course Prerequisite: WGSS 101 or 120; WGSS 300 with a B or better, or 481 with a B or better; by interview only. Supervised experience in approved campus or community agencies or projects focusing on women's issues. (Formerly WOMEN ST 410.)	8-21
WGSS	460	Revise	Gender, Race, and Nature in American Culture 3 Course	Gender, Race, and Nature in American Culture 3 Course	8-21

			Prerequisite: WOMEN ST 101, 201, or 300; junior standing. Exploration of American culture through examination of cultural representations of nature in mainstream and environmental politics.	Prerequisite: WGSS 101, 120, or 300; junior standing. Exploration of American culture through examination of cultural representations of nature in mainstream and environmental politics. (Formerly WOMEN ST 460.)	
WGSS / PHIL	462	Revise	[M] Women and Ethics 3 Course Prerequisite: PHIL 101, WOMEN ST 101, or WOMEN ST 201. Study of gender and feminism and their effect on contemporary ethical theories and issues. (Crosslisted course offered as WOMEN ST 462, PHIL 462). Cooperative: Open to UI degree-seeking students.	[M] Women and Ethics 3 Course Prerequisite: PHIL 101, WGSS 101, or WGSS 120. Study of gender and feminism and their effect on contemporary ethical theories and issues. (Crosslisted course offered as WGSS 462, PHIL 462. WGSS 462 formerly offered as WOMEN ST 462.) Cooperative: Open to UI degree-seeking students.	8-21
WGSS	477	Revise	Special Topics: Study Abroad V 1-15 May be repeated for credit. S, F grading.	Special Topics: Study Abroad V 1-15 May be repeated for credit. (Formerly WOMEN ST 477.) S, F grading.	8-21
WGSS	481	Revise	[M] Feminist Theory 3 Course Prerequisite: WOMEN ST 101, 201, or 300. Introduction to the field of feminist theory, including classic interdisciplinary methods, and applications of this scholarship to contemporary women's issues.	[M] Feminist Theory 3 Course Prerequisite: WGSS 101, 120, or 300. Introduction to the field of feminist theory, including classic interdisciplinary methods, and applications of this scholarship to contemporary women's issues. (Formerly WOMEN ST 481.)	8-21
WGSS	485	Revise	[M] Theoretical Issues in Queer Studies 3 Course Prerequisite: WOMEN ST 484 or 300-400-level WOMEN ST course. Theoretical construction and interpretation of sexualities,	[M] Theoretical Issues in Queer Studies 3 Course Prerequisite: WGSS 484 or any 300-400-level WGSS course. Theoretical construction and interpretation of sexualities,	8-21
			gender, and identity.	gender, and identity. (Formerly WOMEN ST 485.)	

			standing; or admitted to the minor in Women's Studies or Queer Studies, and department permission. Seminar-style culminating experience in synthesizing prior learning and new scholarship for application of theory and practice; written and oral communication of original final project research. Typically offered Even Years - Spring	Sexuality Studies or to the minor in Women's Studies or Queer Studies; senior standing; and department permission. Seminar-style culminating experience in synthesizing prior learning and new scholarship for application of theory and practice; written and oral communication of original final project research. (Formerly WOMEN ST 495.) Typically offered Even Years - Spring.	
WGSS	499	Revise	Special Problems V 1-4 May be repeated for credit. Independent study conducted under the jurisdiction of an approving faculty member; may include independent research studies in technical or specialized problems; selection and analysis of specified readings; development of a creative project; or field experiences. S, F grading.	Special Problems V 1-4 May be repeated for credit. Independent study conducted under the jurisdiction of an approving faculty member; may include independent research studies in technical or specialized problems; selection and analysis of specified readings; development of a creative project; or field experiences. (Formerly WOMEN ST 499.) S, F grading.	8-21