

MEMORANDUM

TO: Deans and Chairs
 FROM: Becky Bitter, Sr. Assistant Registrar
 DATE: January 22, 2016
 SUBJECT: Minor Change Bulletin No. 5

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	New Revise Drop	Current	Proposed	Effective Date
ACCTG	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Business Administration - Accounting PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
AMER ST	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the American Studies PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
ANIM SCI	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course</u>	1-16

			repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	<u>Prerequisite: Admitted to the Animal Sciences PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	
ANTH	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. Typically offered Fall, Spring, and Summer. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Anthropology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. Typically offered Fall, Spring, and Summer. S, U grading.	1-16
B A	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Business Administration PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
BIO ENG / CHE	455 / 474	Revise	Metabolic Engineering 3 Course Prerequisite: BIO ENG 210 or CHE 211; CHE 201; MATH 220; MATH 315; MBIOS 301 or 303. Understanding metabolic properties of organisms such	Metabolic Engineering 3 Course Prerequisite: BIO ENG 210 or CHE 211; CHE 201; MATH 220; MATH 315. Understanding metabolic properties of organisms such that cells can be modified for use as biochemical plants to	8-16

			that cells can be modified for use as biochemical plants to produce desired bioproducts. (Crosslisted course offered as BIO ENG 455, CHE 474). Typically offered Fall.	produce desired bioproducts. (Crosslisted course offered as BIO ENG 455, CHE 474). Typically offered Fall.	
BIOLOGY	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. Typically offered Fall, Spring, and Summer. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Biology, Plant Biology, Botany, or Zoology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. Typically offered Fall, Spring, and Summer. S, U grading.	1-16
BSYSE	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Biological and Agricultural Engineering or Engineering Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
CE	431	Revise	Structural Steel Design 3 Course Prerequisite: CE 330 with a C or better; certified major in Civil Engineering. Design of steel structures by load and resistance factor design (LRFD); behavior and design of beams, columns, tension members and connections.	Structural Steel Design 3 Course Prerequisite: CE 330 with a C or better; <u>CE 414</u> ; certified major in Civil Engineering. Design of steel structures by load and resistance factor design (LRFD); behavior and design of beams, columns, tension members and connections. Typically offered Spring.	5-16

			Typically offered Spring.		
CE	433	Revise	Reinforced Concrete Design 3 Course Prerequisite: CE 330 with a C or better; certified major in Civil Engineering. Behavior, analysis, and design of reinforced concrete structures; flexure; shear; bond; serviceability requirements; design of beams, columns, and slabs. Typically offered Fall and Summer.	Reinforced Concrete Design 3 Course Prerequisite: CE 330 with a C or better; <u>CE 414</u> ; certified major in Civil Engineering. Behavior, analysis, and design of reinforced concrete structures; flexure; shear; bond; serviceability requirements; design of beams, columns, and slabs. Typically offered Fall and Summer.	5-16
CE	436	Revise	Design of Timber Structures 3 Course Prerequisite: CE 330 with a C or better; certified major in Civil Engineering. Engineering properties of wood materials; analysis and design of members, connections, trusses, shearwalls and structural diaphragms; durability and moisture effects on engineered wood products. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	Design of Timber Structures 3 Course Prerequisite: CE 330 with a C or better; <u>CE 414</u> ; certified major in Civil Engineering. Engineering properties of wood materials; analysis and design of members, connections, trusses, shearwalls and structural diaphragms; durability and moisture effects on engineered wood products. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	5-16
CE	495	Revise	Engineering Internship V 1-4 May be repeated for credit; cumulative maximum 4 hours. Course Prerequisite: By interview only. Placement in a professional, governmental, or industrial situation for specialized or general experience. Typically offered Fall, Spring, and Summer. S, F grading.	Engineering Experience V 1-4 May be repeated for credit; cumulative maximum 4 hours. Course Prerequisite: By interview only. <u>Leadership, service, or professional experience commensurate with departmental requirements.</u> Typically offered Fall, Spring, and Summer. S, F grading.	8-16
CE	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Civil Engineering or Engineering Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major	1-16

			enrolling for 800 credit. S, U grading.	advisor/committee chair before enrolling for 800 credit. S, U grading.	
CHE	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Chemical Engineering or Engineering Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
CHEM	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. Typically offered Fall, Spring, and Summer. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Chemistry PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. Typically offered Fall, Spring, and Summer. S, U grading.	1-16
COM	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Communication PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16

COUN PSY	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Counseling Psychology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
CPT S	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Computer Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
CRM J	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Criminal Justice and Criminology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
CROP SCI	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Crop</u>	1-16

			research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	<u>Science PhD program</u> . Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	
E E	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Electrical Engineering PhD program</u> . Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
ECONS	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Agricultural Economics or Economics PhD program</u> . Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
ED AD	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Educational Leadership PhD or EdD program</u> . Independent research and advanced study for students working on their doctoral	1-16

			Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	
ED PSYCH	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Educational Psychology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
ENGLISH	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the English PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
ENTOM	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Entomology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair	1-16

			enrolling for 800 credit. S, U grading.	before enrolling for 800 credit. S, U grading.	
ENVR SCI	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Environmental and Natural Resource Sciences PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
FIN	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Business Administration - Finance PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
FS	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Food Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
GEOLOGY	800	Revise	Doctoral Research, Dissertation, and/or	Doctoral Research, Dissertation, and/or Examination V 1-18 May	1-16

			<p>Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>be repeated for credit. <u>Course Prerequisite: Admitted to the Geology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	
HBM	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Business Administration - Hospitality and Tourism PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
HISTORY	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the History PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
HORT	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Horticulture PhD program.</u> Independent research and advanced</p>	1-16

			doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	
INTERDIS	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the IIPD PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
MATH	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Mathematics PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
MATSE	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Materials Science or the Materials Science and Engineering PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and	1-16

			enrolling for 800 credit. S, U grading.	should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	
MBIOS	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Molecular Biosciences PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
ME	406	Revise	[M] Experimental Design 3 (1-6) Course Prerequisite: ME 220; ME 304; ME 306; ME 316 ; certified major in Mechanical Engineering, Materials Science and Engineering, Civil Engineering, or Electrical Engineering. Designing, conducting, and reporting of experimental investigations involving mechanical equipment. Recommended preparation: ME 348. Typically offered Fall, Spring, and Summer.	[M] Experimental Design 3 (1-6) Course Prerequisite: <u>ENGLISH 402</u> or concurrent enrollment; ME 220; ME 304; ME 306; <u>ME 348</u> ; certified major in Mechanical Engineering, Materials Science and Engineering, Civil Engineering, or Electrical Engineering. Designing, conducting, and reporting of experimental investigations involving mechanical equipment. Typically offered Fall, Spring, and Summer.	8-16
ME	416	Revise	[CAPS] [T] Mechanical Systems Design 3 (1-6) Course Prerequisite: ME 304; ME 316 ; ME 348; ME 414 or concurrent enrollment; 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] [T] Mechanical Systems Design 3 (1-6) Course Prerequisite: ME 304; ME 348; <u>ME 415</u> ; 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.	8-16
ME	800	Revise	Doctoral Research,	Doctoral Research, Dissertation,	1-16

			<p>Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Mechanical Engineering or Engineering Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	
MGMT	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Business Administration - Management PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
MGTOP	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Business Administration - Operations and Management Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
MIS	800	Revise	<p>Doctoral Research,</p>	<p>Doctoral Research, Dissertation,</p>	1-16

			<p>Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Business Administration - Information Systems PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	
MKTG	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Business Administration - Marketing PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
MPS	800	Revise	<p>Doctoral Research, Dissertation and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Molecular Plant Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
MSE / CE	543 / 593	Revise	<p>Polymer Materials and Engineering 3 Preparation and structure-property relationship of polymer materials with</p>	<p>Polymer Materials and Engineering 3 Preparation and structure-property relationship of polymer materials with emphasis</p>	1-17

			emphasis on fracture mechanics and toughening. (Crosslisted course offered as CE 593, MSE 543). Required preparation must include MSE 402. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	on fracture mechanics and toughening. (Crosslisted course offered as <u>MSE 543, CE 593</u>). Required preparation must include MSE 402. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	
MSE / CE	545 / 595	Revise	Polymer and Composite Processing 3 Polymer and composite processing from fundamental principles to practical applications. (Crosslisted course offered as CE 595, MSE 545). Typically offered Spring. Cooperative: Open to UI degree-seeking students.	Polymer and Composite Processing 3 Polymer and composite processing from fundamental principles to practical applications. (Crosslisted course offered as <u>MSE 545, CE 595</u>). Typically offered Spring. Cooperative: Open to UI degree-seeking students.	1-17
NATRS	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Environmental and Natural Resource Sciences PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
NEP	465	Drop	[M] Nutrition and Exercise Assessment 3 (2-3) Course Prerequisite: Certified major in nutrition and exercise physiology, or admitted to the Master of Science in Coordinated Program in Dietetics, Nutrition, and Exercise Physiology. Field and laboratory techniques and tools required to properly assess nutritional and physiological parameters.	--N/A--	1-17
NEP	470	Drop	Sports Nutrition 3 Course Prerequisite: Certified major in	--N/A--	1-17

			<p>nutrition and exercise physiology, or admitted to the Master of Science in Coordinated Program in Dietetics, Nutrition, and Exercise Physiology. Identification of energy, macro/micronutrients and fluid requirements during exercise; evaluation of dietary practices and ergogenic aids for pre- and post-competition, weight maintenance.</p>		
NEP	490	Revise	<p>Exercise and Nutrition Internship V 10 (0-30) to 15 (0-45) Supervised offsite exercise field experience to assess normal and diseased populations and develop/apply exercise prescriptions and nutrition recommendations. S, F grading.</p>	<p>Exercise Internship V 10 (0-30) to 15 (0-45) <u>Course Prerequisite: By department permission.</u> Supervised offsite exercise field experience to assess normal and diseased populations and develop/apply exercise prescriptions and nutrition recommendations. S, F grading.</p>	8-16
NEP	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Nutrition and Exercise Physiology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
NEUROSCI	425	Revise	<p>Integrated Physiology 3 Course Prerequisite: BIO ENG 210, MBIOS 301, MBIOS 303, NEUROSCI 301, NEUROSCI 302, or PSYCH 372. Neural regulation of systems physiology examined at the system, cellular, and molecular levels. Typically offered Spring and Summer.</p>	<p>Foundations of Medical Physiology 3 Course Prerequisite: BIO ENG 210, MBIOS 301, MBIOS 303, NEUROSCI 301, NEUROSCI 302, or PSYCH 372. <u>Integrated functioning of organ systems, focusing on mechanisms of disease, organ dysfunction, and disturbances to whole-animal homeostasis and health.</u> Typically offered Spring and Summer.</p>	8-16
NEUROSCI	426	Revise	<p>Integrative Physiology -</p>	<p>Foundations of Medical</p>	8-16

			<p>Laboratory 1 (0-3) Course Prerequisite: Concurrent enrollment in NEUROSCI 425. Optional laboratory component of NEUROSCI 425; Laboratory to complement Integrative Physiology; quantitative and modeling based examination of physiological systems and aspects of their regulation. Typically offered Spring and Summer.</p>	<p>Physiology Lab (0-3) Course Prerequisite: Concurrent enrollment in NEUROSCI 425. Optional laboratory component of NEUROSCI 425; Laboratory to complement Integrative <u>Practical analysis of organ function and health using medical diagnostic equipment and clinical cases.</u> Typically offered Spring and Summer.</p>	
NEUROSCI	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Neuroscience PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
NURS	800	Revise	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Nursing PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	1-16
PHARMSCI	578		<p>Biomedical Statistics 3 Research process; techniques for conducting health services research and evaluation; critique published health services research and collect, utilize, and evaluate primary and secondary data. Typically offered Fall.</p>	<p><u>Applied Biostatistics</u> 3 Research process; techniques for conducting health <u>sciences</u> research and evaluation; critique published health <u>sciences</u> research and collect, utilize, and evaluate primary and secondary data. Typically offered Fall.</p>	1-17

PHARMSCI	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Pharmaceutical Sciences PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
PHYSICS	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Physics PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
PL P	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Plant Pathology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
POL S	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Political Science PhD program.</u>	1-16

			students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	
PREV SCI	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Prevention Sciences PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
PSYCH	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Psychology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
SOC	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Sociology PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their	1-16

			advisor/committee chair before enrolling for 800 credit. S, U grading.	major advisor/committee chair before enrolling for 800 credit. S, U grading.	
SOIL SCI	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Soil Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
SPEC ED	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Special Education PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
TCH LRN	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to one of the following PhD programs: Cultural Studies and Social Thought in Education, Math and Science Education, or Language, Literacy, and Technology.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S,	1-16

				U grading.	
VET CLIN	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Veterinary Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
VET MICR	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Veterinary Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
VET PATH	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Veterinary Science PhD program.</u> Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.	1-16
VET PH	800	Revise	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. Independent research and advanced study for	Doctoral Research, Dissertation, and/or Examination V 1-18 May be repeated for credit. <u>Course Prerequisite: Admitted to the Veterinary Science PhD program.</u>	1-16

		<p>students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	<p>Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.</p>	
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