

## MEMORANDUM

TO: Deans and Chairs

FROM: Becky Bitter, Assistant Registrar

DATE: April 3, 2013

SUBJECT: Minor Change Bulletin No. 8

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
BIO ENG	210	Revise	<b>Bioengineering Analysis 2</b> (1-3) Course Prerequisite: <del>CHE 201 with a C or better; MATH 220 with a C or better or concurrent enrollment.</del> Analytical problem solving, modeling and computer methods for bioengineering applications.	<b>Bioengineering Analysis 2</b> (1-3) Course Prerequisite: <u>MATH 220 or concurrent enrollment; certified major in Bioengineering.</u> Analytical problem solving, modeling and computer methods for bioengineering applications.	8-13
BIO ENG	322	Revise	<b>[M] Mechanics of Biological Materials Lab 1</b> (0-3) Course Prerequisite: <del>BIO ENG 321 with a C or better or concurrent enrollment; and MATH 370 with a C or better or concurrent enrollment, or MATH 423 with a C or better or concurrent enrollment; certified major in Bioengineering.</del> Laboratory experiments focused on mechanics of biological and engineering materials; experimental design and statistical analysis of data; scientific writing.	<b>[M] Mechanics of Biological Materials Lab 1</b> (0-3) Course Prerequisite: BIO ENG 321 or concurrent enrollment; and MATH 370 or concurrent enrollment, or MATH 423 or concurrent enrollment; certified major in Bioengineering. Laboratory experiments focused on mechanics of biological and engineering materials; experimental design and statistical analysis of data; scientific writing.	8-13
BIO ENG	340	Revise	<b>Unified Systems Bioengineering I 4</b> (3-3) Course Prerequisite: E E	<b>Unified Systems Bioengineering I 4</b> (3-3) Course Prerequisite: <u>BIO</u>	8-13

			261 with a C or better; certified major in Bioengineering. Foundation for dynamic modeling and design of physiological systems; part one of two-semester course.	<u>ENG 210 or concurrent enrollment</u> ; E E 261 with a C or better; certified major in Bioengineering. Foundation for dynamic modeling and design of physiological systems; part one of two-semester course.	
<b>BIO ENG</b>	<b>440</b>	<b>Revise</b>	<b>Unified Systems Bioengineering II 4 (3-3)</b> Course Prerequisite: <del>BIO ENG 321 with a C or better; BIO ENG 322 with a C or better; BIO ENG 330 with a C or better;</del> BIO ENG 340 with a C or better. Continuation of BIO ENG 340; emphasis on feedback control system analysis and design, with examples from physiological systems.	<b>Unified Systems Bioengineering II 4 (3-3)</b> Course Prerequisite: <u>BIO ENG 210 with a C or better;</u> BIO ENG 340 with a C or better. Continuation of BIO ENG 340; emphasis on feedback control system analysis and design, with examples from physiological systems.	<b>8-13</b>
<b>CE</b>	<b>405</b>	<b>Revise</b>	<del><b>Sustainability Engineering II 3</b></del> Course Prerequisite: <del>Senior standing;</del> certified major in Architecture, Construction Management, Civil Engr, Electrical Engr, Bioengineering, Chemical Engr, Mechanical Engr, Computer Science, Materials Science Engr, or Computer Engr. Focus on the LEED green building rating system with topics on sustainable site selection, alternative transportation, heat island effect, light pollution, water and energy efficiency/use, regional and global climate/air issues, use/reuse of many material and resources, and indoor environmental quality. Offered at 400 and 500 level.	<u><b>Sustainability: Green Engineering 3</b></u> Course Prerequisite: Certified major in Architecture, Construction Management, Civil Engr, Electrical Engr, Bioengineering, Chemical Engr, Mechanical Engr, Computer Science, Materials Science Engr, or Computer Engr; <u>senior standing</u> . Focus on the LEED green building rating system with topics on sustainable site selection, alternative transportation, heat island effect, light pollution, water and energy efficiency/use, regional and global climate/air issues, use/reuse of many material and resources, and indoor environmental quality. Offered at 400 and 500 level.	<b>8-13</b>
<b>COM</b>	<b>295</b>	<b>Drop</b>	<b>Writing in</b>	--N/A--	<b>8-13</b>

			<p><b>Communication 3 (2-3)</b>  Course Prerequisite:  Certified major or minor in Communication.  Journalistic and persuasive writing. (The typing proficiency may be waived on an individual basis for otherwise qualified students.)</p>		
<b>COMSTRAT</b>	<b>409</b>	<b>Drop</b>	<p><b>(COM) Quantitative Research Methods 3</b>  Course Prerequisite:  Certified major or minor in Communication.  Measurement, questionnaire construction, sampling, data collection techniques, analysis and hypothesis testing in communication research.</p>	--N/A--	<b>8-13</b>
<b>COMSTRAT</b>	<b>412</b>	<b>Revise</b>	<p><b>[M] (P R) Public Relations Management and Campaign Design 3</b>  Course Prerequisite:  COMSTRAT 312;  <del>COMJOUR 333 or JOUR 305</del>; COMSTRAT 409;  certified major in Communication.  Application of public relations principles, management, persuasion theory and research methods to public relations issues.</p>	<p><b>[M] Public Relations Management and Campaigns 3</b> Course  Prerequisites: <u>COMSTRAT 309</u>; COMSTRAT 312; <u>COMSTRAT 383</u>; certified major in Communication.  Application of public relations principles, management, persuasion theory, and research methods to public relations issues.</p>	<b>8-13</b>
<b>CST M</b>	<b>356</b>	<b>Revise</b>	<p><del><b>Sub-Structures 3</b></del> Course  Prerequisite: <del>ARCH 352</del>; <del>CST M 262</del>; certified major in Construction Management. Methods and procedures for site work, excavation, dewatering, building foundation and equipment, productivity, finance and safety requirements.</p>	<p><b><u>Earthwork and Equipment 3</u></b> Course  Prerequisite: <u>CE 322</u>; certified major in Construction Management or Civil Engineering; <u>3rd year Construction Management student</u>.  Methods and procedures for site work, excavation, dewatering, building foundation and equipment,</p>	<b>8-13</b>

				productivity, finance and safety requirements.	
<b>ECON S</b>	<b>431/531</b>	<b>Revise</b>	<b>Economic Analysis of Environmental Policies 3</b> Course Prerequisite: ECONS 301. Nature and practice of environmental policy analysis using economics concepts and <del>tools including benefit-cost, social indicators and environmental accounts.</del> Offered at 400 and 500 level.	<b>Economic Analysis of Environmental and Natural Resource Policies 3</b> Course Prerequisite: ECONS 301. Nature and practice of environmental policy analysis using economics concepts and <u>the analysis of models applied to natural resource problems and issues.</u> Offered at 400 and 500 level.	<b>8-13</b>
<b>ECON S</b>	<b>532</b>	<b>Revise</b>	<b>Natural Resource Economics and Policy 3</b> Economic principles and models applied to natural resource problems, issues, and policies.	<b>Environmental and Natural Resource Economics 3</b> Economic principles and models applied to natural resource <u>and environmental</u> problems, issues, and policies.	<b>8-13</b>
<b>H D</b>	<b>430</b>	<b>Revise</b>	<b>Professional Skills 3</b> Course Prerequisite: H D 385; junior standing. Examination and development of skills important for effective professionals: communication, leadership, ethical behavior, cultural competence, grant writing, evaluation, and others.	<b>Professional and Grant Writing Skills 3</b> Course Prerequisite: H D 385; junior standing. Examination and development of skills important for effective professionals; communication, leadership, ethical behavior, cultural competence, grant writing, evaluation, and others.	<b>8-13</b>
<b>MATH</b>	<b>103</b>	<b>Revise</b>	<b>Algebra Methods and Introduction to Functions 3</b> Fundamental algebraic operations and concepts, linear systems and inequalities, polynomial and rational functions, introduction to exponential and logarithmic functions. ( <del>This material is currently not available on the Pullman campus.</del> )	<b>Algebra Methods and Introduction to Functions 3</b> Course Prerequisite: <u>ALEKS math placement score of 30%.</u> Fundamental algebraic operations and concepts, linear systems and inequalities, polynomial and rational functions, introduction to exponential and logarithmic functions.	<b>5-13</b>
<b>MATH</b>	<b>105</b>	<b>Revise</b>	<b>[QUAN] Exploring</b>	<b>[QUAN] Exploring</b>	<b>8-13</b>

			<b>Mathematics 3 Course</b> Prerequisite: MATH 101 with a C or better, MATH 103 with a C or better, or ALEKS math placement score of <u>35%</u> . Nature and scope of modern mathematics, and its relationships to other disciplines.	<b>Mathematics 3 Course</b> Prerequisite: MATH 101 with a C or better, MATH 103 with a C or better, or ALEKS math placement score of <u>40%</u> . Nature and scope of modern mathematics, and its relationships to other disciplines.	
<b>MATH</b>	<b>106</b>	<b>Revise</b>	<b>College Algebra 3 Course</b> Prerequisite: MATH 101 with a C or better, or Math 103 with a C or better, or ALEKS math placement score of <u>40%</u> . Graphs, properties and applications of polynomial, rational, exponential and logarithmic functions. Credit not normally granted for both MATH 106 and 107.	<b>College Algebra 3 Course</b> Prerequisite: MATH 101 with a C or better, or Math 103 with a C or better, or ALEKS math placement score of <u>55%</u> . Graphs, properties and applications of polynomial, rational, exponential and logarithmic functions. Credit not normally granted for both MATH 106 and 107.	<b>8-13</b>
<b>MATH</b>	<b>140</b>	<b>Revise</b>	<b>[QUAN] Calculus for Life Scientists 4 (3-3) Course</b> Prerequisite: MATH 106 with a C or better and MATH 108 with a C or better, or MATH 107 with a C or better, or ALEKS math placement score of <u>60%</u> . Differential and integral calculus with emphasis on life science applications. Credit not normally granted for more than one of MATH 140, 171, 202, 206.	<b>[QUAN] Calculus for Life Scientists 4 (3-3) Course</b> Prerequisite: MATH 106 with a C or better and MATH 108 with a C or better, or MATH 107 with a C or better, or ALEKS math placement score of <u>70%</u> . Differential and integral calculus with emphasis on life science applications. Credit not normally granted for more than one of MATH 140, 171, 202, 206.	<b>8-13</b>
<b>MATH</b>	<b>151</b>	<b>Revise</b>	<b>Calculus for Middle School Teachers 3 Course</b> Prerequisite: MATH 106 with a C or better, or ALEKS math placement score of <u>50%</u> . Differential and integral calculus in relation to middle school mathematics and real world problems through visualization, hands-on	<b>Calculus for Middle School Teachers 3 Course</b> Prerequisite: MATH 106 with a C or better, or ALEKS math placement score of <u>65%</u> . Differential and integral calculus in relation to middle school mathematics and real world problems through visualization, hands-on	<b>8-13</b>

			activities and technology.	activities and technology.	
<b>MATH</b>	<b>171</b>	<b>Revise</b>	<b>[QUAN] Calculus I 4 (3-3)</b> Course Prerequisite: MATH 106 with a C or better and MATH 108 with a C or better, or MATH 107 with a C or better, or ALEKS math placement score of <del>70</del> %. Differential and integral calculus of one variable with associated analytic geometry. Credit not normally granted for more than one of MATH 140, 171, 202, 206.	<b>[QUAN] Calculus I 4 (3-3)</b> Course Prerequisite: MATH 106 with a C or better and MATH 108 with a C or better, or MATH 107 with a C or better, or ALEKS math placement score of <u>80</u> %. Differential and integral calculus of one variable with associated analytic geometry. Credit not normally granted for more than one of MATH 140, 171, 202, 206.	<b>8-13</b>
<b>MATH</b>	<b>201</b>	<b>Revise</b>	<b>Mathematics for Business and Economics 3</b> Course Prerequisite: MATH 101 with a C or better, MATH 103 with a C or better, or ALEKS math placement score of <del>40</del> %. Mathematical analysis using polynomial, exponential, and logarithmic functions; linear systems, linear programming and probability, for business and economic applications.	<b>Mathematics for Business and Economics 3</b> Course Prerequisite: MATH 101 with a C or better, MATH 103 with a C or better, or ALEKS math placement score of <u>55</u> %. Mathematical analysis using polynomial, exponential, and logarithmic functions; linear systems, linear programming and probability, for business and economic applications.	<b>8-13</b>
<b>MATH</b>	<b>202</b>	<b>Revise</b>	<b>[QUAN] Calculus for Business and Economics 3</b> Course Prerequisite: MATH 106 with a C or better, MATH 107 with a C or better, MATH 201 with a C or better, or ALEKS math placement score of <del>50</del> %. Differential and integral calculus of the polynomial, exponential, and logarithmic functions. Credit not normally granted for more than one of MATH 140, 171, 202, 206.	<b>[QUAN] Calculus for Business and Economics 3</b> Course Prerequisite: MATH 106 with a C or better, MATH 107 with a C or better, MATH 201 with a C or better, or ALEKS math placement score of <u>65</u> %. Differential and integral calculus of the polynomial, exponential, and logarithmic functions. Credit not normally granted for more than one of MATH 140, 171, 202, 206.	<b>8-13</b>
<b>MATH</b>	<b>251</b>	<b>Revise</b>	<b>Fundamentals of Elementary Mathematics I 3 (2-2)</b> Course	<b>Fundamentals of Elementary Mathematics I 3 (2-2)</b> Course	<b>8-13</b>

			Prerequisite: Math 101 with a C or better, Math 103 with a C or better, Math 106 with a C or better, or ALEKS math placement score of 40%. Comprehensive development of number systems emphasizing place-value, integers, rational numbers, and associated algorithms; methods of problem solving.	Prerequisite: Math 101 with a C or better, Math 103 with a C or better, Math 106 with a C or better, or ALEKS math placement score of 45%. Comprehensive development of number systems emphasizing place-value, integers, rational numbers, and associated algorithms; methods of problem solving.	
<b>ME</b>	<b>310</b>	<b>Revise</b>	<b>Manufacturing Processes 2</b> Course Prerequisite: MSE 201; certified major in Mechanical Engineering, Materials Science Engineering, Civil Engineering, or Electrical Engineering. Manufacturing processes, material fabrication, and nontraditional processing; <del>manufacturing processes laboratory in machining, joining, forming; manufacturing project.</del>	<b>Manufacturing Processes 2</b> Course Prerequisite: MSE 201; certified major in Mechanical Engineering, Materials Science Engineering, Civil Engineering, or Electrical Engineering. Manufacturing processes, material fabrication, and nontraditional processing.	<b>8-13</b>
<b>MGTO P/STAT</b>	<b>519</b>	<b>Revise</b>	<b>Applied Multivariate Analysis 3</b> Principal components, factor analysis, discriminant function, cluster analysis, <del>multivariate normal distribution</del> , Hotelling's T2 and MANOVA. (Crosslisted course offered as MGTOP 519, STAT 519). Recommended preparation: STAT 443.	<b>Applied Multivariate Analysis 3</b> <u>Multivariate normal distribution</u> , principal components, factor analysis, discriminant function, cluster analysis, <u>Hotelling's T2</u> and MANOVA. (Crosslisted course offered as MGTOP 519, STAT 519). Recommended preparation: STAT 443.	<b>8-13</b>
<b>STAT/MATH</b>	<b>205</b>	<b>Revise</b>	<b>[QUAN] Statistical Thinking 3</b> Course Prerequisite: MATH 103 or ALEKS math placement score of 35%. Scientific explanation; correlations and causality; presenting statistical evidence;	<b>[QUAN] Statistical Thinking 3</b> Course Prerequisite: MATH 101, MATH 103, or ALEKS math placement score of 40%. Scientific explanation; correlations and causality; presenting	<b>8-13</b>

			graphical and numerical methods; chance and gambling; the bell-shaped distribution. (Crosslisted course offered as STAT 205, MATH 205). Recommended preparation: Previous college algebra.	statistical evidence; graphical and numerical methods; chance and gambling; the bell-shaped distribution. (Crosslisted course offered as STAT 205, MATH 205).	
<b>STAT/ MATH</b>	<b>212</b>	<b>Revise</b>	<b>[QUAN] Introduction to Statistical Methods 4 (3-2)</b> Course Prerequisite: Math 101, 103, or ALEKS math placement score of <del>35</del> <u>35</u> %. Introduction to descriptive and inferential statistics: t-tests, chi-square tests, one-way ANOVA, simple linear regression and correlation. (Crosslisted course offered as STAT 212, MATH 212).	<b>[QUAN] Introduction to Statistical Methods 4 (3-2)</b> Course Prerequisite: MATH 101, Math 103, or ALEKS math placement score of <u>40</u> %. Introduction to descriptive and inferential statistics: t-tests, chi-square tests, one-way ANOVA, simple linear regression and correlation. (Crosslisted course offered as STAT 212, MATH 212).	<b>8-13</b>
<b>VET MED</b>	<b>350</b>	<b>Revise</b>	<b>Skeletal Preparation 1</b> May be repeated for credit; cumulative maximum 3 hours. Technique of skeletal preparation is mastered by undertaking and completing project. Skeleton becomes property of student. S, M, F grading.	<b>Skeletal Preparation 1</b> May be repeated for credit; cumulative maximum 3 hours. Course Prerequisite: <u>Second year Veterinary Medicine students.</u> Technique of skeletal preparation is mastered by undertaking and completing project. Skeleton becomes property of student. S, M, F grading.	<b>8-13</b>