M E M O R A N D U M

Faculty Senate Approved 1/26/2012

TO: Deans and Chairs

FROM: Becky Bitter, Assistant Registrar

DATE: January 23, 2012

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.

Prefix	Course Number	New Revise Drop	Current	Proposed	Effective Date
AMDT	**368**	**Revise**	**Illustration and Rendering Techniqu**es 3 (0-6) ~~Course Prerequisite: FINE ART 110.~~ Illustration and rendering used for costume and fashion design. (Crosslisted course offered as AMDT 368, FINE ART 369, THEAT 368).	**Illustration and Rendering Techniques** 3 (0-6) Illustration and rendering used for costume and fashion design. (Crosslisted course offered as AMDT 368, FINE ART 369, THEAT 368).	**8-12**
ARCH	**452**	**Revise**	**Computer-aided Design II** 2 (1-2) ~~Prereq certified Arch or Cst M major; Arch 451.~~ Continuation of Arch 451.	**Computer-aided Design II** 2 (1-2) Course Prerequisite: Certified major in Architecture or Construction Management. Continuation of Arch 451. Computer-aided design related to 3D modeling and construction documents.	**8-12**
BIOLOGY	**251**	**Revise**	**Introductory Human Physiology** 4 (3-3) Course Prerequisite: BIOLOGY 102, 106, or 107; cumulative WSU gpa of 2.5 or better. Basic physiological processes in humans from the cellular to the organismal level.	**Introductory Human Physiology** 4 (3-3) Course Prerequisite: Course Prerequisite: BIOLOGY 102, 106, or 107; cumulative WSU gpa of 2.5 or better. Basic physiological processes in humans from the cellular to the organismal level. Credit not granted for both Biology 251 and 353.	**5-12**
BIOLOGY	**353**	**Revise**	~~**Mammalian** **Physiology** 4 (3-3)~~	**Advanced Human Physiology** 4	**5-12**

			Course Prerequisite: BIOLOGY 352 or 354. Function and control at the organ-organismic level with emphasis on mammals, including humans; emphasis on human health science applications.	(3-3) Course Prerequisite: BIOLOGY 352 or 354. Function and control at the organ-organismic level with emphasis on mammals, including humans; emphasis on human health science applications. Credit not granted for both Biology 251 and 353.	
BIOLOGY	**582**	**Revise**	**Professional Communication in Biology** 2 Mechanics and style of publishing biological findings; adaptation of writing to various venues and audiences.	**Professional Communication in Biology - Grant Writing** 2 Mechanics and style of publishing biological research and findings; adaptation of writing to various venues and audiences with emphasis on grant writing.	**8-12**
E E	**476**	**Revise**	**Analog Integrated Circuits** 3 Course Prerequisite: E E 311 with a C or better; ~~E E 351 with a C or better or concurrent enrollment; E E 489 with a C or better or concurrent enrollment;~~ certified 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 E E 576. Offered at 400 and 500 level.	**Analog Integrated Circuits** 3 Course Prerequisite: E E 311 with a C or better; certified 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 E E 576. Offered at 400 and 500 level.	**8-12**
ECE	**349**	**Revise**	**Principles of Solid State Devices** 3 Course Prerequisite: ~~ECE 302;~~ ECE 325. Semiconductor theory; carrier diffusion and drift, direct and indirect energy materials, homo and hetereojunctions, operations principles of bipolar junctions and MOS field effect transistors, metal-semiconductor contacts.	**Principles of Solid State Devices** 3 Course Prerequisite: ECE 325 or concurrent enrollment. Fundamentals of semiconductor theory; carrier diffusion and drift, direct and indirect energy materials, homo and hetereojunctions, operations principles of bipolar junctions and MOS field effect transistors, metal-semiconductor contacts.	**8-12**
ECE	**366**	**Revise**	**Introduction to VLSI Design** 3 (2-3) Course Prerequisite: ~~ECE 214; ECE 325 or concurrent enrollment~~. CMOS devices and	**Introduction to VLSI Design** 3 (2-3) Course Prerequisite: ECE 214; ECE 349. CMOS devices and deep-submicron fabrication	**8-12**

			deep-submicron fabrication technology; interconnect modeling, power and clock distribution, area, power and speed optimization.	technology; CMOS circuits and layout extending from gates and inverters to the design of large logic blocks; interconnect modeling, power and clock distribution, area, power and speed optimization; hands on design experience in the laboratory.	
ECE	**471**	**Revise**	**Antenna Design and Analysis** 3 (2-3) Course Prerequisite: ~~ECE 425~~. Antenna types and radiation, wire antennas, antenna arrays broadband and aperture antennas; theory and simulation of antenna performance, laboratory testing and measurement.	**Antenna Design and Analysis** 3 (2-3) Course Prerequisite: ECE 370. Antenna types and radiation, wire antennas, antenna arrays broadband and aperture antennas; theory and simulation of antenna performance, laboratory testing and measurement.	**8-12**
ECE	**486**	**Revise**	**Solid State Device Design and Modeling** 3 (2-3) Course Prerequisite: ECE 349. Cross-sectional design of CMOS devices; simulation and optimization of device design using CAD tools for process integration; devicemodel extraction for circuit simulation and parametric testing.	**Solid State Device Design and Modeling** 3 (2-3) Course Prerequisite: ECE 349 or concurrent enrollment, or MECH 431. Cross-sectional design of CMOS devices; simulation and optimization of device design using CAD tools for process integration; devicemodel extraction for circuit simulation and parametric testing.	**8-12**
ED AD	**590**	**Revise**	**Internship** V ~~3~~-6 May be repeated for credit; cumulative maximum 12 hours. Course Prerequisite: By interview only. Internship in professional positions. S, F grading.	**Internship** V 1-6 May be repeated for credit; cumulative maximum 12 hours. Course Prerequisite: By interview only. Internship in professional positions. S, F grading.	**8-12**
ED PSYCH	**511**	**Revise**	~~**Large Scale Educational Assessment and Testing**~~ 3 Course Prerequisite: ED PSYCH 508; ED PSYCH 509. Large-scale educational assessment and test development and evaluation; history and policy uses of achievement tests.	**Classical and Modern Test Theory** 3 Course Prerequisite: ED PSYCH 508; ED PSYCH 509. Large-scale educational assessment and test development and evaluation; history and policy uses of achievement tests.	**8-12**
ENVR SCI	**414**	**Revise**	**Environmental Biophysics** 2 Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and	**Environmental Biophysics** 2 Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and	**8-12**

			animal systems. (Crosslisted course offered as SOIL SCI 414/514, ENVR SCI 414/514). ~~Cooperative course taught by WSU, open to UI students (BIOL 415).~~ Recommended preparation: Introductory biology and physics. Offered at 400 and 500 level.	animal systems. (Crosslisted course offered as SOIL SCI 414/514, ENVR SCI 414/514). Recommended preparation: Introductory biology and physics. Offered at 400 and 500 level.	
ENVR SCI	**415**	**Revise**	**Environmental Biophysics Laboratory** 1 (0-3) Course Prerequisite: Soil Sci 414 or concurrent enrollment. Experimental methods and procedures in environmental measurements; temperature, wind, radiation, and humidity measurements in biological environments. (Crosslisted course offered as SOIL SCI 415, ENVR SCI 415~~). Cooperative course taught by WSU, open to UI students (BIOL 436).~~ Offered at 400 and 500 level.	**Environmental Biophysics Laboratory** 1 (0-3) Course Prerequisite: Soil Sci 414 or concurrent enrollment. Experimental methods and procedures in environmental measurements; temperature, wind, radiation, and humidity measurements in biological environments. (Crosslisted course offered as SOIL SCI 415, ENVR SCI 415). Offered at 400 and 500 level.	**8-12**
ENVR SCI	**514**	**Revise**	**Environmental Biophysics** 2 Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and animal systems. (Crosslisted course offered as SOIL SCI 414/514, ENVR SCI 414/514). Recommended preparation: Introductory biology and physics. Offered at 400 and 500 level.	**Environmental Biophysics** 2 Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and animal systems. (Crosslisted course offered as SOIL SCI 414/514, ENVR SCI 414/514). Cooperative course taught by WSU, open to UI students (SOIL 514). Recommended preparation: Introductory biology and physics. Offered at 400 and 500 level.	**8-12**
ES/RP	**416**	**Drop**	**Radiation Biology** 4 (3-3) Prereq introductory radiological physics, or one course each in biology and radiological physics; Rec ES/RP 406. Effects of ionizing radiation at the molecular, cellular, organ and organism level. Credit not granted for both ES/RP 416 and 516.	--N/A--	**1-12**
ES/RP	**420**	**Drop**	**Field and Laboratory**	--N/A--	**1-12**

			Techniques in Environmental Science 2 (1-3) Prereq Biol 372; Chem 105. Fundamentals and hands-on experience on the use of field and laboratory techniques and instruments utilized in environmental science. Field trips required.		
ES/RP	**481**	**Drop**	**Economics of Environmental Issues** 3 Prereq Econ 101; Rec Econ 301. Same as Econ 481.	--N/A--	**1-12**
ES/RP	**516**	**Drop**	**Radiation Biology** 4 (3-3) Prereq introductory radiological physics, or one course each in biology and radiological physics; Rec ES/RP 406. Graduate-level counterpart of ES/RP 416; additional requirements. Credit not granted for both ES/RP 416 and 516.	--N/A--	**1-12**
ES/RP	**524**	**Drop**	**Environmental Health Assessment** 2 Prereq one course each in biology, calculus, chemistry, general ecology and physics. Environmental transport, fate and effects of radioactive and hazardous materials.	--N/A--	**1-12**
FS	**406**	**Revise**	**Evaluation of Dairy Products I** 1 Identifying defects in dairy products and relating these defects to their probable cause; remedies. Credit not granted for both FS 406 and FS 506**.** ~~Offered at 400 and 500 level.~~ Cooperative course taught jointly by WSU and UI (FS 406).	**Evaluation of Dairy Products I** 1 Identifying defects in dairy products and relating these defects to their probable cause; remedies. Cooperative course taught jointly by WSU and UI (FS 406).	**8-12**
FS	**407**	**Drop**	**Evaluation of Dairy Products II** 1 (0-3) Identifying defects in dairy products and intense training for Collegiate Dairy Products Evaluation Competition. Credit not granted for both FS 407 and FS 507. Recommended preparation: FS 406. Offered at 400 and 500 level. Cooperative course taught jointly by WSU and	--N/A--	**8-12**

			UI (FS 407).		
FS	**506**	**Drop**	**Evaluation of Dairy Products I** 1 Identifying defects in dairy products and relating these defects to their probable cause; remedies. Credit not granted for both FS 406 and FS 506. Offered at 400 and 500 level. Cooperative course taught jointly by WSU and UI (FS 406).	--N/A--	**8-12**
FS	**507**	**Drop**	**Evaluation of Dairy Products II** 1 (0-3) Identifying defects in dairy products and intense training for Collegiate Dairy Products Evaluation Competition. Credit not granted for both FS 407 and FS 507. Recommended preparation: FS 406. Offered at 400 and 500 level. Cooperative course taught jointly by WSU and UI (FS 407).	--N/A--	**8-12**
FS	**517**	**Revise**	~~**Seminar Written**~~ 2 May be repeated for credit. ~~Planning, writing, reporting, reviewing and evaluating current food-related research.~~	**Scientific Writing** 2 May be repeated for credit. Fundamentals of good technical writing and presentation; preparing and writing thesis/dissertation, scientific publications, and research grants; bibliography organization and citing, statistical data analysis, and preparation of graphics, tables, and posters; reviewing and evaluating current research. Cooperative course taught jointly by WSU and UI (FS 517).	**8-12**
H D	**482**		~~**[M]**~~ **Child Assessment and Evaluation** 3 Prereq H D 201 or 340; 6 additional hours in H D; junior standing. Understanding aspects of assessment and evaluation of young children; selection, administration, summary development, ethics and professional responsibilities, evaluation and follow-up.	**Child Assessment and Evaluation** 3 Prereq H D 201 or 340; 6 additional hours in H D; junior standing. Understanding aspects of assessment and evaluation of young children; selection, administration, summary development, ethics and professional responsibilities, evaluation and follow-up.	**8-12**

MBIOS	**305**	**Revise**	**General Microbiology** 3 Prereq Biol ~~106 and~~ 107; Chem 102 or 345 . Structure, function, nutrition, physiology, and genetics of microbes and their application to immunology, pathology, microbial diversity, and environmental microbiology.	**General Microbiology** 3 Course Prerequisite: BIOLOGY 107; CHEM 102 or 345. Structure, function, nutrition, physiology, and genetics of microbes and their application to immunology, pathology, microbial diversity, and environmental microbiology. Recommended preparation: MBIOS 303.	**8-12**
ME	**216**	**Revise**	**Integrated CAD Design** 2 (0-6) Course Prerequisite: ME 116. CAD based analysis for engineering design, the application of motion, FEA and CFD, CAD simulations to the engineering design process.	**Integrated CAD Design** 2 (0-6) Course Prerequisite: ME 116; CE 215 or concurrent enrollment. CAD based analysis for engineering design, the application of motion, FEA and CFD, CAD simulations to the engineering design process.	**8-12**
MGMT	**584**	**Revise**	**Seminar in Entrepreneurship** 3 Advanced, doctoral-level topics in entrepreneurship.	**Seminar in Entrepreneurship** 3 Course Prerequisite: Admission to the Ph.D. in Business Administration. Advanced, doctoral-level topics in entrepreneurship.	**1-12**
MGMT	**594**	**Revise**	**Seminar in Organizational Theory** 3 Advanced, doctoral-level topics in organizational theory.	**Seminar in Organizational Theory** 3 Course Prerequisite: Admission to the Ph.D. in Business Administration. Advanced, doctoral-level topics in organizational theory.	**1-12**
MGMT	**595**	**Revise**	**Seminar in Strategic Management** 3 Advanced, doctoral-level topics in Strategic Management.	**Seminar in Strategic Management** 3 Course Prerequisite: Admission to the Ph.D. in Business Administration. Advanced, doctoral-level topics in Strategic Management.	**1-12**
MGMT	**597**	**Revise**	**Seminar in International Management** 3 Advanced, doctoral-level topics in International Management.	**Seminar in International Management** 3 Course Prerequisite: Admission to the Ph.D. in Business Administration. Advanced, doctoral-level topics in International Management.	**1-12**
MPS	**571**	**Drop**	**Research Proposal** 2 May be repeated for credit; cumulative maximum 4 hours. Written and oral presentation of an area of	--N/A--	**8-12**

			molecular plant sciences.		
NATRS	**320**	**Drop**	**Forest Engineering and Harvesting** 3 Course Prerequisite: NATRS 204. Survey of logging equipment capabilities; intro to cable logging systems, road layout, and design; cost analysis of logging systems; development of road and logging plans. Three days of field trips. (Fall only). Cooperative course taught by UI, open to WSU students (FORP 430).	--N/A--	**8-12**
NATRS	**321**	**Drop**	**Wood Anatomy and Identification** 3 (2-2) Course Prerequisite: BIOLOGY 107. Physiology of woody plants, anatomy and nomenclature of wood, physical and chemical nature of wood, identification of commercial wood species. Two lec and 2-hr lab a wk. (Fall only). Cooperative course taught by UI, open to WSU students (FORP 277).	--N/A--	**8-12**
NATRS	**432**	**Drop**	**Low-volume Forest Roads** 3 Course Prerequisite: NATRS 320. Road classification; design of forest roads; construction techniques; costing, environmental considerations, design project. Three days of field trips. Cooperative course taught by UI, open to WSU students (FORPR 432).	--N/A--	**8-12**
NEP	**458**	**Revise**	**Nutrition and Exercise Throughout the Life Cycle** 4 Course Prerequisite: Certified major in nutrition and exercise physiology. Physical activity relating to nutritional needs and dietary patterns from infancy through old age and including maternal nutrition.	**Nutrition and Exercise Throughout the Life Cycle** 3 Course Prerequisite: Certified major in Nutrition and Exercise Physiology. Physical activity relating to nutritional needs and dietary patterns from infancy through old age and including maternal nutrition.	**8-12**
NURS	**556**	**Revise**	~~**Community-Based/Population-**~~	**Advanced Population Health** V	**5-12**

			~~**Focused Role Practicum**~~ V 2 (1-3) to 6 (2-12) Prereq permission of instructor. Culminating analysis, development, and enactment of advanced practice roles in teaching, practice, or administration of community-based/population-focused nursing.	2 (1-3) to 6 (2-12) Prereq permission of instructor. Culminating analysis, development, and enactment of advanced practice roles in teaching, practice, or administration of community-based/population-focused nursing.	
NURS	**572**	**Revise**	~~**Nursing Science: Chronic Biobehavioral Nursing Outcomes**~~ ~~3~~ Course prerequisite: NURS 536. Concepts, theories and research relevant to preventing and managing chronic conditions across the lifespan.	**Nursing Science: Research and Theory of Chronic Conditions** 2 Course prerequisite: NURS 536. Concepts, theories and research relevant to preventing and managing chronic conditions across the lifespan.	**5-13**
NURS	**574**	**Revise**	~~**Nursing Sciences: Acute Biobehavioral Nursing Outcomes**~~ 2 Course prerequisite: NURS 536. Research methods, procedures and analysis of acute phenomena in nursing with a focus on vulnerable populations.	**Nursing Sciences: Research and Theory of Acute Conditions** 2 Course prerequisite: NURS 536. Research methods, procedures and analysis of acute phenomena in nursing with a focus on vulnerable populations.	**1-13**
NURS	**584**	**Revise**	~~**Nursing Science:**~~ **Systems of Health Care Delivery** ~~3~~ Course prerequisite: NURS 536. Health care delivery systems in the US and worldwide addressing barriers to care, social justice, vulnerability and access disparity.	**Theory and Policy Development in Systems of Health Care Delivery** 2 Course prerequisite: NURS 536. Health care delivery systems in the US and worldwide, addressing barriers to care, social justice, vulnerability and access disparity.	**8-12**
PSYCH	**543**	**Revise**	**Child Clinical Psychology: Empirical Approaches to Assessment and Therapy** 3 Research on ~~developmental psychopathology,~~ child assessment~~,~~ and ~~child~~ therapy.	**Child Clinical Psychology: Empirical Approaches to Assessment and Therapy** 3 Research on child assessment and therapy.	**1-13**
PSYCH	**550**	**Revise**	~~**Attitudes and Social Cognition**~~ 3 Attitude structure, function, and change; social cognition and motivation, and attributions. Cooperative course taught by WSU, open to UI students (PSYC 520).	**Social Psychology** 3 Attitude structure, function, and change; social cognition and motivation, and attributions. Cooperative course taught by WSU, open to UI students (PSYC 520).	**8-12**
PSYCH	**574**	**Revise**	~~**Physiological Psychology**~~ 3	**Clinical and Experimental**	**8-12**

			Neuroanatomical, neurochemical, and other biological cases of human and animal behavior. Cooperative course taught by WSU, open to UI students (PSYC 565).	**Biopsychology** 3 Neuroanatomical, neurochemical, and other biological cases of human and animal behavior. Cooperative course taught by WSU, open to UI students (PSYC 565).	
SHS	**378**	**Revise**	**Speech and Hearing Sciences** 3 Basis of acoustics, acoustic phonetics, psychoacoustics, ~~and~~ speech perception, and instrumentation for measurement of related phenomena.	**Speech and Hearing Sciences** 3 Course Prerequisite: SHS 377. Basis of acoustics, acoustic phonetics, psychoacoustics, speech production, speech perception, and instrumentation for measurement of related phenomena.	**8-12**
SHS	**461**	**Revise**	**Clinical Apprenticeship in Speech-Language Pathology and Audiology** 2 (1-3) Pre-practicum preparation; observation of and assisting in therapy; state laws; clinical methods.	**Clinical Apprenticeship in Speech-Language Pathology and Audiology** 2 (1-3) Course Prerequisite: Concurrent enrollment in SHS 480 or SHS 478. Pre-practicum preparation; observation of and assisting in therapy; state laws; clinical methods.	**8-12**
SHS	**570**	**Revise**	**Advanced Internship in Speech-Language Pathology** V 1-18 May be repeated for credit. Course Prerequisite: SHS 566 or SHS 568; ~~and~~ SHS 575. Advanced practicum in diagnosis of and therapy for communication disorders. SHS graduate student; all undergraduate prerequisite courses completed. S, F grading.	**Advanced Internship in Speech-Language Pathology** V 1-18 May be repeated for credit. Course Prerequisite: SHS 566 or SHS 568; SHS 575; by interview only. Advanced practicum in diagnosis of and therapy for communication disorders. SHS graduate student; all undergraduate prerequisite courses completed. S, F grading.	**8-12**
SOIL SCI	**454**	**Revise**	**Pedology** 3 (2-3) ~~Course Prerequisite: SOIL SCI 201.~~ Morphology, genesis, and classification of soils; distribution of soils as related to environmental processes and factors. Cooperative course taught by UI, open to WSU students (SOIL 454).	**Pedology** 3 (2-3) Morphology, genesis, and classification of soils; distribution of soils as related to environmental processes and factors. Cooperative course taught by UI, open to WSU students (SOIL 454). Recommended preparation: SOIL SCI 201.	**8-12**
SOIL SCI	**514**	**Revise**	**Environmental Biophysics** 2	**Environmental Biophysics** 2	**8-12**

			Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and animal systems. (Crosslisted course offered as SOIL SCI 414/514, ENVR SCI 414/514). Recommended preparation: Introductory biology and physics. Offered at 400 and 500 level.	Physical environment of living organisms (temperature, humidity, radiation, wind); heat and mass exchange and balance in plant and animal systems. (Crosslisted course offered as SOIL SCI 414/514, ENVR SCI 414/514). Cooperative course taught by WSU, open to UI students (SOIL 514). Recommended preparation: Introductory biology and physics. Offered at 400 and 500 level.	
SOIL SCI	**515**	**Revise**	**Environmental Biophysics Laboratory** 1 (0-3) Course Prerequisite: Soil Sci 514 or concurrent enrollment. Experimental methods and procedures in environmental measurements; temperature, wind, radiation, and humidity measurements in biological environments. (Crosslisted course offered as SOIL SCI 415, ENVR SCI 415). Offered at 400 and 500 level.	**Environmental Biophysics Laboratory** 1 (0-3) Course Prerequisite: Soil Sci 514 or concurrent enrollment. Experimental methods and procedures in environmental measurements; temperature, wind, radiation, and humidity measurements in biological environments. (Crosslisted course offered as SOIL SCI 415, ENVR SCI 415). Cooperative course taught by WSU, open to UI students. (Soil 516). Offered at 400 and 500 level.	**8-12**
SOIL SCI	**531**	**Revise**	**Soil Microbiology** 3 (2-3) Biology and significance of organisms inhabiting soil and their role in nutrient cycling, ecosystem function, agriculture, and bioremediation. ~~Cooperative course taught by WSU, open to UI students (Soil 531).~~	**Soil Microbiology** 3 (2-3) Biology and significance of organisms inhabiting soil and their role in nutrient cycling, ecosystem function, agriculture, and bioremediation.	**8-12**