Supplemental Information
Course and Curriculum items
FS Academic Affairs Committee Review
December 15, 2015 Meeting

Graduate Course changes (12-1-15)

Pages 2-17

Graduate curriculum changes (12-1-15)

Pages 18-23

Graduate Course changes (12-1-15)

Non-Expedited New Course

Staley School of Leadership Studies

#1 LEAD 814. Graduate Studies in Leadership and Communication. (3) I, II. This course examines the intersections of community-engaged scholarship and leadership through practices of relationship, story, strategy, and action. Students are introduced to resources and opportunities for pursuing public engagement, community-engaged scholarship, and successful program completion.

IMPACT: This course does not impact another unit.

RATIONALE: This course will be required of all doctoral students in the Leadership Communication program in their first term. Students will become oriented with the graduate process specifically to this program and university. This program is in the proposal process.

EFFECTIVE DATE: Fall 2016

#2 LEAD 815. Seminar in Leadership and Communication. (1) I, II, S. This seminar provides doctoral students opportunities for collaboration and mentorship with peers, faculty, and visiting scholars, and exploration of career pathways in public engagement.

IMPACT: This course does not impact another unit.

RATIONALE: This course provides an opportunity for students in the Leadership and Communication doctoral program to stay connected to faculty, students, and current research through a seminar series. Students will be required to take this course at least three semesters. This program is in the proposal process.

EFFECTIVE DATE: Fall 2016

#3 LEAD 845. Approaches to Public/Community Engagement. (3) I, II. The course will provide students a survey of key concepts and theoretical frameworks associated with deliberative democracy and public engagement. A specific focus will be given to how forms of community-engaged scholarship intersect course content in both theory and practice.

IMPACT: Sociology reported no reservations with this course proposal on 9/2/2015. History, Political Science, and Landscape Architecture and Regional & Community Planning were contacted on 9/1/2015. There are no responses yet.

RATIONALE: This course provides the foundation for community-engaged scholarship related to leadership and communication in both theory and practice. This is intended to be part of the Leadership and Communication doctoral program. This program is in the proposal process.

EFFECTIVE DATE: Fall 2016

#4 LEAD 886. Seminar in Leadership Studies. (1-3) I, II, S. Seminar in Leadership Studies.

IMPACT: This course does not impact another unit.

RATIONALE: This will serve as a graduate level seminar course.

EFFECTIVE DATE: Fall 2016

#5 LEAD 999. Research in Leadership and Communication. (1-15) I, II, S. Doctoral research demonstrates the candidate's ability to conduct significant original research related to leadership and communication, to analyze the information obtained from the research, and to present the results in a dissertation format appropriate to the field.

IMPACT: None.

RATIONALE: This course serves as the research hours for students in the Leadership and Communication doctoral program. This program is in the proposal process.

EFFECTIVE DATE: Fall 2016

MKTG 881 Applied Business Data Analytics Credits: (3) Students will gain an understanding of econometric and statistical methods of analysis and their application to business problems. Through lectures and exercises, student will use software tools often used in business for data analysis. Students will also learn how to interpret and apply the results from the software in data analyses. Emphasis will be placed on the application of econometric and statistical methods of data analyses. Topics will include customer choice analysis, customer segmentation and targeting, customer lifetime value calculation, and forecasting.

Requisites Prerequisite: Graduate Student Standing

When Offered Fall

Rationale This graduate-level course is developed to meet the increasing demand for data analysis skills in the era of Big Data and will serve as a course in the new Data Analytics certificate. At this point we intend to offer the course only online through Global Campus. The main objective of the course is to provide a understanding of the econometric and statistical methods of data analyses that can be applied to business problems. The course will be based on lectures and hands on exercises to apply the concepts and methods covered in class to make students comfortable with practical software tools often used for data analysis in businesses. After completing this course, students will be able to understand and interpret the results of most of the econometric and statistical analyses used in data analyses. Furthermore, students should be able to successfully apply the appropriate methods in their own data analyses. The class will emphasize the application of econometric and statistical methods of data analyses. Topics will include customer choice analysis, customer segmentation and targeting, customer lifetime value calculation, and forecasting.

Impact on Other Units None.

Effective Date Fall 2016

Communications and Agricultural Education

Agricultural Communications

ADD: AGCOM 814. Graduate Studies in Leadership Communication. (3) Fall and Spring. This course examines the intersections of community-engaged scholarship and leadership through practices of relationship, story, strategy, and action. Students are introduced to resources and opportunities for pursuing public engagement, community-engaged scholarship, and successful program completion.

RATIONALE: This course will be required of all doctoral students in the Leadership Communication program in their first term. Students will become oriented with the graduate process specifically to this program and university. This program is in the proposal process.

IMPACT: Crosslisted as COMM 814, LEAD 814. No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: AGCOM 815. Seminar in Leadership Communication (1) Fall Spring and Summer. This seminar provides doctoral students opportunities for collaboration and mentorship with peers, faculty, and visiting scholars, and exploration of career pathways in public engagement. Repeatable.

RATIONALE: This course provides an opportunity for students in the Leadership Communication doctoral program to stay connected to faculty, students, and current research through a seminar series. Students will be required to take this course at least three semesters. This program is in the proposal process.

IMPACT: Crosslisted as COMM 815, LEAD 815. No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: AGCOM 845. Approaches to Public/Community Engagement (3) Fall and Spring. The course will provide students a survey of key concepts and theoretical frameworks associated with deliberative democracy and public engagement. A specific focus will be given to how forms of community-engaged scholarship intersect course content in both theory and practice.

RATIONALE: This course provides the foundation for community-engaged scholarship related to leadership and communication in both theory and practice. This is intended to be part of the Leadership Communication doctoral program. This program is in the proposal process.

IMPACT: Crosslisted as COMM 845, LEAD 845. No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: AGCOM 916. Communication Theories and Engagement (3) Fall and Spring. Focusing on the intersections of communication theory and engagement, this course reviews the paradigmatic evolution of communication theories as they relate to culture, organizations, leadership, social influence, emerging media technologies and other pertinent areas. Additionally, students will be exposed to philosophical and theoretical work pertaining to community engaged research.

RATIONALE: This course provides foundational communication theories in the context of engagement. It is being proposed as a course in the Leadership Communication doctoral program. This program is in the proposal process.

IMPACT: Crosslisted as COMM 916, LEAD 916. No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: AGCOM 945. Public Problem-Solving (3) Fall and Spring. This course is a rigorous and applied exploration of the fundamentals of social science research, social sector evaluation, and knowledge mobilization.

RATIONALE: This course is designed for students to understand and practice applied public problem solving. This is an advanced course being proposed as part of the Leadership Communication doctoral program. This program is in the proposal process.

IMPACT: Crosslisted as COMM 945, LEAD 945. No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: AGCOM 999. Research in Leadership Communication (1-15) Fall, Spring and Summer. Doctoral research demonstrates the candidate's ability to conduct significant original research related to leadership and communication, to analyze the information obtained from the research, and to present the results in a dissertation format appropriate to the field.

RATIONALE: This course serves as the research hours for students in the Leadership Communication doctoral program. This program is in the proposal process.

IMPACT: Crosslisted as COMM 999, LEAD 999. No impact on other units.

EFFECTIVE DATE: Fall 2016

Agronomy

ADD: AGRON 700. Agricultural Meteorology. (3) Fall, Even. Fundamental concepts of meteorology and climatology and their applications to agriculture. Three hours recitation a week. Recommended Prerequisite: PHYS 113

RATIONALE: This course presents current topics in atmospheric sciences and their impact on plants and animals. This knowledge prepares students to address important issues related to crop and animal production in a changing environment and meets important needs in our academic curriculum.

IMPACT: No impact on other departments outside the College of Agriculture.

EFFECTIVE DATE: Fall 2016

ADD: AGRON 881. Grazing Ecology and Management. (3) Fall, Even. This course discusses the ecological principles of domesticated livestock grazing and their application to manage grazing lands. Theoretical and applied models of plant/animal interactions will be presented. Grazing systems and their management of ecosystem services will be presented as balance between production and conservation outcomes.

RATIONALE: This Web-based distance AG*IDEA course expands the courses available for those pursuing a graduate certificate in Grassland Management.

IMPACT: No impact on other departments outside the College of Agriculture.

EFFECTIVE DATE: Fall 2016

ADD: AGRON 902. International Agronomy Experience for Graduate Students. (0–6) Fall, Spring. Students will apply knowledge gained in their graduate curriculum focused on international crops, soils, and agronomic systems. Topics vary by offering depending on the agronomic systems studied and locations visited. Recommended Prerequisites: AGRON 360 and 375.

RATIONALE: This course will provide a mechanism to develop and offer international educational and research experiences for graduate students. The course will also provide the means to regularly advertise international experiences, encourage student participation in international experiences, and track student participation in these experiences.

IMPACT: No impact on other departments outside the College of Agriculture.

EFFECTIVE DATE: Fall 2016

Animal Sciences and Industry

ADD: ASI 741. Quantitative Genetics Applications of Matrix Algebra. (1) Fall. The goal of this course is development of skills in matrix algebra to describe and solve problems in the agricultural and life sciences, with particular focus on quantitative genetics. The course is designed for students with no prior knowledge of matrix algebra, and whose formal training in mathematics may be somewhat limited. It will consider the vocabulary, concepts, application and, to a lesser extent, theory of matrix algebra that is relevant to graduate students in the agricultural and life sciences. Application exercises will consider ecological systems, genotypic transition matrices, selection indices, and the numerator relationship matrix. Application of methods such as least squares and canonical transformation to solve problems in the biological sciences using matrix algebra will also be introduced.

RATIONALE: The following courses are part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program,

and allow a venue for distance students to get credit for the course through K-State. The goal of this course is development of skills in matrix algebra to describe and solve problems in the agricultural and life sciences, with particular focus on quantitative genetics. The course is designed for students with no prior knowledge of matrix algebra, and whose formal training in mathematics may be somewhat limited. It will consider the vocabulary, concepts, application and, to a lesser extent, theory of matrix algebra that is relevant to graduate students in the agricultural and life sciences. Application exercises will consider ecological systems, genotypic transition matrices, selection indices, and the numerator relationship matrix. Application of methods such as least squares and canonical transformation to solve problems in the biological sciences using matrix algebra will also be introduced.

IMPACT: The department of Mathematics offers Applied Matrix Theory (Math 551) for 3 credits. It has a calculus prereq, which many genetic grad students would not have. The proposed course is shorter, less in depth, and covers concepts specific to the applications of matrices in animal genetics problems (very little theory). Math 551 is also not online, so not available to AG*IDEA students. Andy Bennett was contacted via email 8-3-15. He sent it on to Math course and curriculum committee which will reply within a few weeks.

EFFECTIVE DATE: Fall 2016

ADD: ASI 742. Cybersheep: A Genetic Simulation Game. (1) Fall. The goal of this course is for students to be able to make informed and effective decisions in a livestock breeding program. In order to accomplish this goal, the course will provide hands-on experience with selection and mating decisions, and their consequences through a genetic simulation. Genetic gains require time to achieve and there is very little opportunity for students to witness the consequences of breeding decisions in a course. The simulation is designed to offer an opportunity to see in real-time, the outcome of decision-making, and to experience the stochastic (chance) elements of a breeding program

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The overarching goal of this course is for students to be able to make informed and effective decisions in a livestock breeding program. In order to accomplish this goal, the course will provide “hands-on” experience with selection and mating decisions, and their consequences. The vehicle for this instruction is “CyberSheep,” a web-based genetic simulation game played by teams of students. The genetic gains achieved in livestock breeding programs have the advantages of being permanent, cumulative and, in most cases, highly cost effective. Still, such gains require time to achieve; in the course of an academic degree, let alone a semester or quarter, there is very little opportunity for students to witness the consequences of breeding decisions in any of our livestock species. Thus, CyberSheep is designed to offer you a virtual opportunity to “see,” in real-time, the outcome of your decision-making, and to experience the stochastic (chance) elements of a breeding program.

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: ASI 810. History and Perspectives in Animal Breeding and Genetics. (1) Fall. The goal of this course is to provide students with a historical perspective of the discipline of Animal Breeding and Genetics and an appreciation for the

contributions of several scientists that have significantly impacted the discipline. Weekly lectures will consist of pre-recorded interviews with scientists that have had an international impact in the field of animal breeding and genetics.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this course is to provide students with a historical perspective of the discipline of Animal Breeding and Genetics and an appreciation for the contributions of several scientists that have significantly impacted the discipline. Weekly lectures will consist of pre-recorded interviews with scientists that have had an international impact in the field of animal breeding and genetics.

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: ASI 811. Primer to Quantitative Genetics. (1) Spring. The goal of this course is to provide students with an introduction to the language and basic principles of quantitative genetics. Its purpose is to develop foundational knowledge for students entering a graduate program in animal breeding and genetics. Topics included will be the basic model for quantitative genetics (additive and non-additive genetic effects, including Mendelian sampling, and environmental effects), sources of variation, heritability, family resemblance and repeatability, selection response, and family selection. Expected values and concepts in applied statistics (e.g., linear regression) will also be considered.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this course is to provide students with an introduction to the language and basic principles of quantitative genetics. Its purpose is to develop foundational knowledge for students entering a graduate program in animal breeding and genetics. Topics included will be the basic model for quantitative genetics (additive and non-additive genetic effects, including Mendelian sampling, and environmental effects), sources of variation, heritability, family resemblance and repeatability, selection response, and family selection. Expected values and concepts in applied statistics (e.g., linear regression) will also be considered.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

ADD: ASI 812. Selection Index Theory and Application. (1) Spring. The overall goal of this course is to increase your skills and knowledge related to the design of animal breeding programs. The focus will be on the application of index theory to the definition of breeding objectives in animal agriculture. The course will also introduce approaches for deriving economic weights, which are useful when predicting economic response to selection.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The overall goal of this course is to increase your skills and knowledge related to the design of animal breeding programs. The focus will be on the application of index theory to the definition of breeding objectives in animal agriculture. The course will also introduce approaches for deriving economic weights, which are useful when predicting economic response to selection.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

ADD: ASI 813. Economic Breeding Programs. (1) Spring. The primary goal of this course is to provide a survey of methodology for developing an economic basis for multiple trait selection to improve the profitability of production. Much of the material is abstracted from the scientific literature, from which a sampling of relevant references will be provided. Therefore, an overarching goal of this course is to instill the capacity to critically analyze relevant literature as an aid to solving future problems. Specific topics included are: a review of concepts relevant to selection index, an introduction to the concept of systems analysis, linear programming, and simulation with emphasis on economic values useful for selection index.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The primary goal of this course is to provide a survey of methodology for developing an economic basis for multiple trait selection to improve the profitability of production. Much of the material is abstracted from the scientific literature, from which a sampling of relevant references will be provided. Therefore, an overarching goal of this course is to instill the capacity to critically analyze relevant literature as an aid to solving future problems. Specific topics included are: a review of concepts relevant to selection index, an introduction to the concept of systems analysis, linear programming, and simulation with emphasis on economic values useful for selection index.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

ADD: ASI 814. Heterosis and Crossbreeding Systems. (1) Spring. The goal of this course is to provide students with an introduction to the principles of heterosis and mating systems utilizing crossbreeding. Students completing this course should be able to evaluate and compare various crossbreeding mating schemes through predicted performance of the potential progeny and overall system performance.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this course is to provide students with an introduction to the principles of heterosis and mating systems utilizing crossbreeding. Students

completing this course should be able to evaluate and compare various crossbreeding mating schemes through predicted performance of the potential progeny and overall system performance.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

ADD: ASI 815. An Introduction to "R" Programming. (1) Spring. The goal of this module is to familiarize students the R environment for statistical computing. Part of the course will be devoted to the use of R as a high-level programming language and a gateway for more formal low-level languages. No prior exposure to the language is necessary.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this module is to familiarize students the R environment for statistical computing. Part of the course will be devoted to the use of R as a high-level programming language and a gateway for more formal low-level languages. No prior exposure to the language is necessary.

IMPACT: The Stat department offers an S+/R course. That course includes S+ (which isn't part of the proposed course, and isn't used in animal breeding), and isn't offered online. Dr. Breen and Dr. Gadbury were contacted 8-3-15, no response.

EFFECTIVE DATE: Spring 2017

ADD: ASI 870. Linear Models in Animal Breeding. (1) Fall. Students completing this course will learn about linear models used in Animal Breeding. These models will be discussed in the context of the random variable that is to be predicted. Specifically, the course will cover animal models, sire/maternal grandsire models, and sire models. Models including a single record, repeated records, and models with both direct and maternal effects will be discussed.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. Students completing this course will learn about linear models used in Animal Breeding. These models will be discussed in the context of the random variable that is to be predicted. Specifically, the course will cover animal models, sire/maternal grandsire models, and sire models. Models including a single record, repeated records, and models with both direct and maternal effects will be discussed.

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: ASI 871. Genetic Prediction. (1) Fall. The goal of this course is to increase student understanding of best linear unbiased prediction and to develop skills in genetic prediction. A wide array of material will be covered with emphasis on real-world datasets designed to develop applied analytical skills relative in animal breeding. Topics will include data integrity diagnosis, contemporary grouping strategies, adjusting for known non-genetic effects, and use of software to perform genetic evaluations. Students will develop procedures for the utilization of various sources of information for the calculations of predictions of genetic merit in the form of estimated breeding values.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this course is to extend the concepts learned in Selection Index Theory and Application and Linear Models in Animal Breeding to increase student understanding of best linear unbiased prediction and to develop skills in genetic prediction. A wide array of material will be covered with emphasis on real-world datasets designed to develop applied analytical skills relative in animal breeding. Topics will include data integrity diagnosis, contemporary grouping strategies, adjusting for known non-genetic effects, the AWK Programming Language, UNIX/Linux scripting, and use of the Animal Breeder's Toolkit to perform genetic evaluations. Students will develop procedures for the utilization of various sources of information for the calculations of predictions of genetic merit in the form of estimated breeding values.

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: ASI 872. Applied Variance Component Estimation in Livestock Genetics. (1) Fall. The goal of this course is to extend upon content covered in linear models and genetic prediction, with specific emphasis on estimation of (co)variance components and genetic parameters required to solve mixed models typical in livestock genetics. Upon successful completion of this module, students should have an applied knowledge of approaches used to estimate the G and R sub-matrices of the mixed model equations. Several tools will be used to demonstrate the models and approaches most commonly used in parameter estimation. Where appropriate, scientific literature that explains their implementation, and some attributes of the solutions obtained will be used.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this course is to extend upon content covered in linear models and genetic prediction, with specific emphasis on estimation of (co)variance components and genetic parameters required to solve mixed models typical in livestock genetics. Upon successful completion of this module, students should have an applied knowledge of approaches used to estimate the G and R sub-matrices of the mixed model equations. Several tools will be used to demonstrate the models and approaches most commonly used in parameter estimation. Where appropriate, scientific literature that explains their implementation, and some attributes of the solutions obtained will be used. A general knowledge of linear models, matrix algebra, moment statistics, rules of expectation and familiarity with UNIX/Linux Operating Systems will be assumed, including scripting tools such as awk, octave, join, sort, paste, wc, etc. This module will begin in a

somewhat historical manner, proceeding on to methods and software currently used for research and field data implementation.

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: ASI 873. Prediction and Control of Inbreeding in Breeding Programs. (1) Fall. The goal of this course is for students to be introduced to, and to gain an understanding of, the concepts of inbreeding and genetic diversity, the impact of inbreeding on animal breeding and production populations, and of strategies to control and manage rates of inbreeding in animal breeding and production populations. The use of genomic data to assess and control inbreeding also will be discussed.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this course is for students to be introduced to, and to gain an understanding of, the concepts of inbreeding and genetic diversity, the impact of inbreeding on animal breeding and production populations, and of strategies to control and manage rates of inbreeding in animal breeding and production populations. The use of genomic data to assess and control inbreeding also will be discussed.

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016

ADD: ASI 874. Marker Assisted and Gene-Assisted Selection. (1). Spring. The goal of this module is to increase student understanding of potential methods for incorporating marker genetic information into selection decisions. Topics will include but are not limited to recombination, single-gene tests, molecular breeding values, suggested producer guidelines for use of the technologies, and incorporation of genomic information into genetic prediction procedures.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this module is to extend the concepts learned in Linear Models in Animal Breeding and Genetic Prediction to increase student understanding of potential methods for incorporating marker genetic information into selection decisions. This field is rapidly changing as new biotechnologies are developed and as statistical methodologies follow to analyze the vast amounts of information becoming available from new DNA technologies related to livestock genomes, as such a wide array of material will be covered with emphasis on application to real-world scenarios. Topics will include but are not limited to recombination, single-gene tests, molecular breeding values, suggested producer guidelines for use of the technologies, and incorporation of genomic information into genetic prediction procedures.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

ADD: ASI 875. Introduction to Marker Association Analysis and QTL Detection. (1) Spring. The goal of this course is to introduce the basic concepts of using genetic markers to identify QTL and of estimating marker-trait associations, and to expose students to applications of these methodologies. Materials will cover the basics of linkage and linkage disequilibrium, alternate designs or population structures for QTL mapping, and statistical methods for QTL detection, including QTL interval mapping and genome-wide association analyses. Properties, advantages, disadvantages, and requirements of alternate designs and analysis strategies will be discussed.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this course is to introduce the basic concepts of using genetic markers to identify QTL and of estimating marker-trait associations, and to expose students to applications of these methodologies. Materials will cover the basics of linkage and linkage disequilibrium, alternate designs or population structures for QTL mapping, and statistical methods for QTL detection, including QTL interval mapping and genome-wide association analyses. Properties, advantages, disadvantages, and requirements of alternate designs and analysis strategies will be discussed.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

ADD: ASI 876. From Markers to Gene Function: Functional Change. (1) Spring. This course takes the results from association analyses and learns how these markers translate into functional changes in the animal genome and in animal performance. Topics covered in the course include an introduction to the tools used to generate genomic data followed by introduction and application of key bioinformatics websites, databases to identify causative genetic variation, and develop gene pathways and networks.

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The one-credit course, From Markers to Gene Function: Functional Change, builds upon the course, Introduction to Marker Association Analysis and QTL Detection, by taking the results from association analyses and helping the students learn how these markers translate into functional changes in the animal genome. Students then learn how these changes translate into differences in animal performance. Topics covered in the course include an introduction to the tools used to generate genomic data followed by introduction and application of key bioinformatics websites, databases to identify causative genetic variation, and develop gene pathways and networks. Ultimately, the whole course is tied back to the overriding concept of this program: livestock genetic improvement.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

ADD: ASI 877. MCMC Methods in Animal Breeding: A Primer (1) Spring**.** The goal of this course is to introduce computational techniques based on simulation that have become a staple in the field of animal breeding (and beyond) over the last 20 years. An overview of the most popular Monte Carlo methods will be provided to the students with an emphasis on hands on reproducible examples developed through the R software. Minimal exposure to the R programming language will be required while no previous exposure to Monte Carlo methods is required. While a few examples in the class will be set in a Bayesian framework, no previous exposure to Bayesian statistics is required

RATIONALE: This course is part of the graduate animal breeding curriculum through the AG*IDEA consortium. Approving this course through K-State will allow our graduate students to participate in the program, and allow a venue for distance students to get credit for the course through K-State. The goal of this course is to introduce the student to computational techniques based on simulation that have become a staple in the field of animal breeding (and beyond) over the last 20 years. An overview of the most popular Monte Carlo methods will be provided to the students with an emphasis on hands on reproducible examples developed through the R software. Minimal exposure to the R programming language will be required while no previous exposure to Monte Carlo methods is required. While a few examples in the class will be set in a Bayesian framework, no previous exposure to Bayesian statistics is required.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

Entomology

ADD: ENTOM 800. Professional Development in Entomology and Related Sciences. (2) Spring. This course will teach students to develop and effectively communicate scientific research and results, including skills in: critical reading of primary literature, developing meaningful hypotheses, outlining a thesis/dissertation literature review, constructing and writing a well-designed scientific proposal, presenting data, communicating effectively to professional and lay audiences, acquiring meaningful peer-review experience, and learning the basics for writing publishable journal articles.

RATIONALE: This course supports 3 of 4 Student Learning Outcomes for all Department graduate degree programs. It will allow the Department to ensure that Entomology graduate students are fully prepared to succeed in their graduate programs and professional careers. This course should be taken the year a student enters the graduate program, so students can develop effective reasoning and communication skills prior to developing their research proposals.

IMPACT: No impact on other units.

EFFECTIVE DATE: Spring 2017

ADD: ENTOM 880. Ecological Genomics. (3) Spring, odd years. Methodology and approaches for testing population genetic and community level hypotheses using next generation sequencing data. Emphasis on evaluating current technologies and applying methods appropriate for specific hypothesis tests. Course will include hands-on data analysis through exercises and a final project. Recommended Prerequisite: ENTOM 910 or BIOL 705; STAT 701 or STAT 703.

RATIONALE: Genomics research is a cross-campus research strength in both the natural and agricultural sciences. There are several course offerings available in several departments, but there are currently no available courses that focus on genomic applications in natural populations and communities. Further, the entomology department wishes to enhance course offerings in the area of genetics, a growing research discipline within the department.

IMPACT: Other genomics courses are offered in Plant Pathology (612/920), Agronomy (980), and Biology (890 and 734). These courses cover command line computing (BIOL 890), bioinformatics algorithms (BIOL 734), genomics applied to genome assembly and individual level processes (PLPTH 920), and population genomics applied to crop improvement AGRON 980. Of these courses, AGRON 980 probably has the most overlap, but there is an important distinction: that course focuses on domesticated populations and targeted manipulations, whereas the proposed course will focus on processes in natural populations.

A request for input was sent to each of the three unit heads (Department of Agronomy, Department of Plant Pathology, and Division of Biology) on September 3, 2015 by e-mail. Dr. Mickey Ransom, Chair of the Course and Curriculum Committee and Assistant Head for Teaching in the Department of Agronomy sent back the response from the Department of Agronomy as follows: "Geoff Morris and I have reviewed the proposal for the new course, ENTOM 880. This course will be complimentary to our existing courses in plant genetics/genomics. Geoff's course focuses on crop improvement applications whereas the proposed course is geared to basic research in ecology and evolution. Geoff and Greg Ragland have been in communication in regard to the course content of the proposed ENTOM 880 course. Therefore, we support this course proposal. It has no adverse impact on our department".

Although we did not receive responses from the unit heads or their designees of the Department of Plant Pathology and the Division of Biology, the instructor, Dr. Greg Ragland, of the proposed course has been in communication with the relevant instructors of these units and has sent the course proposal and syllabus to them for their input. The instructors' responses from these units didn't indicate any concern with this proposed new course.

EFFECTIVE DATE: Spring 2017

Horticulture, Forestry, and Recreational Resources

Horticulture

ADD: HORT 796. Professional Development in Urban Food Systems (0-1). Fall and Spring. A team instructed seminar course that provides urban food systems students with a suite of skills complimentary to their research experience but still necessary for professional career success. Urban Food System students will be expected to enroll in this course 4 semesters. Repeatable. Prerequisite: Senior Standing

RATIONALE: The Urban Food Systems faculty and students are already meeting regularly each semester to cover topics not included in other parts of the curriculum. Formalizing this important part of the specialization by making it a class will allow the faculty and students to get credit.

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016

Grain Science and Industry

ADD: GRSC 891. Study Abroad Experience in Grain Science (0-3) Fall, Spring, Summer. Travel seminar coruse designed to prepare graduate students before their international study abroad experience and analyze, critique, and report about their faculty-led study tours or short courses. The academic topics will vary with each international activity. Prerequisite: Consent of course instructor.

RATIONALE:This course offers a study abroad experience for graduate students similar to the existing faculty-led study abroad coruse (GRSC 491) at the undergraduate level enabling graduate students to benefit from study abroad experiences.

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016

School of Family Studies and Human Services

Course Add
ECED 720 Challenging Behaviors in Early Childhood **Credits:** (3) The application of developmental principles and evidence-based practices to design and implement a positive learning environment for young children, including children with disabilities. Creating an environment that supports young children's social emotional competence, teaches social skills, and promotes self-regulation is emphasized. **When Offered:** Fall **Pre-Requisite:** ECED 428

Rationale: An understanding of how to appropriately support the behavior of young children, including children with disabilities is critical for early childhood teachers. A course focused specifically on children during the early childhood years is needed to ensure that the social emotional supports and behavior management approaches used by teachers of young children are appropriate.

IMPACT: None.

Effective: Fall 2016

Non-Expedited Course Changes

Staley School of Leadership Studies

FROM: ~~GRAD~~ 801. Foundations of Leadership. (3) I, II. Study of the key issues in the theory, research, and application of leadership in organizations. This includes defining leadership, understanding situational characteristics that facilitate / hinder effective leadership, understanding effective / dysfunctional leadership, and gaining greater insight into one's own leadership style and functioning.

TO: LEAD 801. Foundations of Leadership. (3) I, II. Study of the key issues in the theory, research, and application of leadership in organizations. This includes defining leadership, understanding situational characteristics that facilitate / hinder effective leadership, understanding effective / dysfunctional leadership, and gaining greater insight into one's own leadership style and functioning.

IMPACT: This change will impact the College of Business. We have been in communication with Dr. Stacy Kovar about this course over the last year. She agreed to change the prefix in August 2015.

RATIONALE: The GRAD prefix was originally created as a platform for interdisciplinary leadership courses. This course has previously been offered by the College of Business as part of the graduate certificate in Organizational Leadership. The Staley School is working with the College of Business to continue to offer this course to students in the certificate program through the LEAD prefix with Staley School faculty. Additionally, the Staley School has taught this course on campus for graduate students in any program. The course prefix should be changed to reflect that the Staley School is providing the instruction for this course.

EFFECTIVE DATE: Spring 2016

Change From:
ACCTG ~~434~~ - Accounting for Not-For-Profit Entities, Credits: ~~(2)~~
An introduction to the source of authoritative guidance, rules and regulations that govern current reporting to external entities by not-for-profit entities.
Requisites Prerequisite: ACCTG 641.
When Offered ~~Fall,~~ Spring

Change To:

ACCTG 857 - Accounting for Not-For-Profit Entities, Credits: (3)
An introduction to the source of authoritative guidance, rules and regulations that govern current reporting to external entities by not-for-profit entities.
Requisites Prerequisite: ACCTG 641.
When Offered Spring
Impact On Other Units None
Rationale Course is being changed from an undergraduate to graduate course because of changes to both the bachelor's and master's program in accounting.
Effective Date Fall 2017

Graduate Curriculum changes (12-1-15)

Non-Expedited Curriculum Changes

School of Family Studies and Human Services

Financial Therapy Graduate Certificate The Financial Therapy graduate certificate is offered through the School of Family Studies and Human Services. The program is completely on-line, combining self-study with a mentoring classroom-type experience. Students will develop skills to help clients improve financial well-being from a holistic perspective where psychological, emotional, relational, and economic aspects of financial health are considered and addressed. **Required Courses (~~15~~ credit hours)** ~~PFP 624: Fundamentals of Financial Planning (3)~~ PFP 768: Introduction to Financial Therapy (3) PFP 769: Relationships and Money (3) PFP 770: Applied Behavioral Finance (3) PFP 771: Financial Therapy Research & Theory (3) ~~*Students who have obtained the Certified Financial Planner ™ or Accredited Financial Counselor designations may substitute FSHS 700: Financial Ethics and Mediation for FSHS 624. All others will be required to complete the FSHS 624 as part of the Financial Therapy certificate.~~	**Financial Therapy Graduate Certificate** The Financial Therapy graduate certificate is offered through the School of Family Studies and Human Services. The program is completely on-line, combining self-study with a mentoring classroom-type experience. Students will develop skills to help clients improve financial well-being from a holistic perspective where psychological, emotional, relational, and economic aspects of financial health are considered and addressed. Students will be required to have completed a Fundamentals in Personal Finance equivalent course that covers basic financial planning concepts. The course can be an undergraduate or graduate course and must have been taken at an accredited university. **Required Courses (12 credit hours)** PFP 768: Introduction to Financial Therapy (3) PFP 769: Relationships and Money (3) PFP 770: Applied Behavioral Finance (3) PFP 771: Financial Therapy Research & Theory (3)

Rationale: Due to budget constraints, PFP 624 will not be offered currently. However, it is essential that all financial therapy students have a foundation in personal finance concepts. Therefore, in order to streamline the required coursework in the program and to prepare for sustainability of courses offered, students will be required to have taken an equivalent of Fundamentals in Personal Finance at either an undergraduate or graduate level from an accredited university as a prerequisite to the program.

Impact: None

Effective Term: Spring 2016

Special Education, Counseling, and Student Affairs

Doctor of Philosophy in Counseling and Student Development (Counselor Education and Supervision)

From:	To:
The Special Education, Counseling, and Student Affairs graduate program offers a Doctor of Philosophy in Counseling and Student Development with an emphasis in Counselor Education and Supervision. The program requires ~~51 hours of coursework plus research culminating in a dissertation that is a unique contribution to the field. The research will include a three-hour seminar in counseling research and may include up to 12 hours of laboratory research work~~. Training extends beyond that found in the entry-level, basic master's program. The doctoral program addresses the professional leadership roles in counselor education, supervision, advanced counseling practice, and research competencies. The program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).	The Special Education, Counseling, and Student Affairs graduate program offers a Doctor of Philosophy in Counseling and Student Development with an emphasis in Counselor Education and Supervision. The program requires a minimum of 96 hours post baccalaureate. Training extends beyond that found in the entry-level, basic master's program. The doctoral program addresses the professional leadership roles in counselor education, supervision, advanced counseling practice, and research competencies. The program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).
Professional courses (~~15-21~~ credit hours)	Professional courses (21- 24 credit hours)
EDCEP 999 – Research: Clinical Appraisal Laboratory (3) -OR- EDCEP 967 – Advanced Counseling Appraisal (3) EDCEP 924 – Theories of Vocational Counseling (3) EDCEP 955 – Professional Counseling Ethics (3) EDCEP 958 – Advanced Group Counseling (3) EDCEP 985 – Advanced Counseling Theory (3) EDCEP 987 – Counseling Supervison Practicum (3)	EDCEP 924 – Theories of Vocational Counseling (3) EDCEP 955 – Professional Counseling Ethics (3) EDCEP 958 – Advanced Group Counseling (3) EDCEP 967 – Advanced Counseling Appraisal (3) EDCEP 985 – Advanced Counseling Theory (3) EDCEP 987 – Counseling Supervison Practicum (3) EDCEP 821 – Fundamentals of Program Evaluation (3)
Choose one of the following EDCEP 999 – Research: Supervised Teaching Laboratory (3) -OR- EDCI 943 – Principles of College Teaching (3)	Choose one of the following: EDCEP 999 – Research: Supervised Teaching Laboratory (3) -OR- EDCI 943 – Principles of College Teaching (3)

Cognate area (~~12~~ credit hours) Students will develop an area of ~~professional expertise~~ constructed of courses outside of the department planned with concurrence of the committee. Practicum/Internship (9 credit hours) EDCEP 977 – Advanced Counseling Practicum (3) ~~Choose one of the following:~~ ~~EDCEP 999 – Research: Clinical Internship Laboratory Credits: (6) –OR-~~ EDCEP 991 – Internship in Counseling and Educational Psychology Credits: (~~1~~ 18) Research courses (~~9~~ credit hours) EDLEA 838 – Qualitative Research in Education (3) EDCEP 817 – Statistical Methods in Education (3) EDCEP 917 – Experimental Design in Educational Research (3) Research (30 credit hours) EDCEP 999 – Research: Counseling Research Laboratory (3) EDCEP 999 – Research (27)	Cognate area (6 credit hours) Students will develop an area of focus constructed of courses outside of the department planned with concurrence of the committee. Practicum/Internship (9 credit hours) EDCEP 977 – Advanced Counseling Practicum (3) EDCEP 991 – Internship in Counseling and Educational Psychology (6) Research courses (15 credit hours) EDLEA 838 – Qualitative Research in Education (3) EDLEA 938 – Advanced Data Analysis in Qualitative Methods (3) EDCEP 817 – Statistical Methods in Education (3) EDCEP 917 – Experimental Design in Educational Research (3) Elective (3) – A quantitative or qualitative course approved by program committee or EDLEA 828 – Scholarly Orientation to Graduate Studies (3) Research (12-15 credit hours) EDCEP 999 – Research (12-15)

IMPACT: None.

RATIONALE: This change is proposed as a result of a Graduate School policy change in the number of 999 Research hours required for doctoral degrees. This change provided the opportunity to strengthen the program and require a minimum of 96 hours post baccalaureate which is consistent with requirements of CACREP.

EFFECTIVE DATE: Spring 2016

Special Education, Counseling, and Student Affairs

Doctor of Philosophy in Counseling and Student Development (Student Affairs in Higher Education)

From:	To:
Offered through the Special Education, Counseling, and Student Affairs graduate program, the Ph.D. in Counseling and Student Development with specialization in Student Affairs in Higher Education requires a minimum hours ~~of 93~~ post baccalaureate. Doctoral degree requirements A designated core of 15 hours of graduate credit, typically a part of the master's degree in college student personnel work, is required. These courses may be part of a master's degree or must be completed in addition to the doctoral course work. These courses include the following: EDCEP 812 – History and Philosophy of Higher Education (3) EDCEP 816 – Research Methods in Education (3) EDCEP 818 – Principles of College Student Personnel Services (3) EDCEP 838 – ~~The College Student and the College Environment~~ (3) EDCEP 830 – Diversity in Higher Education (3) 1. Professional courses (~~15~~ credit hours) EDCEP 923 – Higher Education Law (3) EDCEP 925 – Higher Education Finance (~~1 18~~) ~~Note: EDCEP 925 must be taken for 3 credit hours.~~ EDCEP 926 – Enrollment Management in Higher Education: (3) EDCEP 927 – Higher Education Administration (3) EDCEP 948 – Advanced Student Development Theory in College Student Affairs (3) 2. Outside area/specialization (9 credit hours) This specialization is developed in consultation with the major professor and ~~ust~~ be approved by the student's program of study committee.	Offered through the Special Education, Counseling, and Student Affairs graduate program, the Ph.D. in Counseling and Student Development with specialization in Student Affairs in Higher Education requires a minimum 90 hours post baccalaureate. Doctoral degree requirements A designated core of 15 hours of graduate credit, typically a part of the master's degree in college student personnel work, is required. These courses may be part of a master's degree or must be completed in addition to the doctoral course work. These courses include the following: EDCEP 812 – History and Philosophy of Higher Education (3) EDCEP 816 – Research Methods in Education (3) EDCEP 818 – Principles of College Student Personnel Services (3) EDCEP 838 – Student Development Theory (3) EDCEP 830 – Diversity in Higher Education (3) 1. Professional courses (18 credit hours) EDCEP 923 – Higher Education Law (3) EDCEP 925 – Higher Education Finance (3) EDCEP 926 – Enrollment Management in Higher Education (3) EDCEP 927 – Higher Education Administration (3) EDCEP 948 – Advanced Student Development Theory in College Student Affairs (3) EDLEA 828 – Scholarly Orientation to Graduate Studies (3) 2. Outside area/specialization (9 credit hours) This specialization is developed in consultation with the major professor and must be approved by the student's program of study committee.

3. Research courses (~~9~~ credit hours) EDLEA 838 – Qualitative Research in Education (3) EDCEP 817 – Statistical Methods in Education (3) EDCEP 917 – Experimental Design in Educational Research (3)	3. Research courses (15 credit hours) EDLEA 838 – Qualitative Research in Education (3) EDLEA 938 – Advanced Data Analysis in Qualitative Methods (3) EDCEP 817 – Statistical Methods in Education (3) EDCEP 917 – Experimental Design in Educational Research (3) Elective (3) – A quantitative or qualitative course approved by program committee
4. Dissertation research (~~30~~ credit hours) Preliminary examination. Candidates must successfully complete completion of all segments of a monitored, written examination of at least 12 hours overall all areas of the program of study. EDCEP 999 – Research in Counseling and Educational Psychology (~~1-18~~)	4. Dissertation research (18 credit hours) Preliminary examination. Candidates must successfully complete completion of all segments of a monitored, written examination of at least 12 hours overall all areas of the program of study. EDCEP 999 – Research in Counseling and Educational Psychology

IMPACT: None.

RATIONALE: This change is proposed as a result of a Graduate School policy change in the number of 999 Research hours required for doctoral degrees. This change provided the opportunity to strengthen the program and require a minimum of 90 hours post baccalaureate.

EFFECTIVE DATE: Spring 2016

Horticulture, Forestry, and Recreational Resources

M.S. Horticulture, Urban Food Systems Specialization
http://catalog.k-state.edu/preview_program.php?catoid=2&poid=308

FROM: **TO:**

Required: HORT 791 Urban Agriculture (2 hrs) HORT 792 Practicum (1hr.) HORT 794 Urban Food Systems (2 hrs)	Required: HORT 791 Urban Agriculture (2 hrs) HORT 792 Practicum (1hr.) HORT 794 Urban Food Systems (2 hrs) HORT 796 Professional Development in Urban Food Systems (0-1 hrs.) (no credit requirement, but must enroll in it for 4 semesters)

Specialization Elective, must choose at least 3 credit hours from the following: HORT 725 Postharvest Technology and Physiology of Horticultural Crops (3 hrs.) HORT 790 Sustainable Ag (2 hrs) HORT 793/FDSCI 793 Farm to Fork Produce Safety (2 hrs.) HORT 795 Urban Agriculture Study tours (1 hr.) Total: 8 credit hours	Specialization Elective, must choose at least 3 credit hours from the following: HORT 725 Postharvest Technology and Physiology of Horticultural Crops (3 hrs.) HORT 790 Sustainable Ag (2 hrs) HORT 793/FDSCI 793 Farm to Fork Produce Safety (2 hrs.) HORT 795 Urban Agriculture Study tours (1 hr.) Total: 8 credit hours

RATIONALE: HORT 796 Professional Development in Urban Food Systems is being proposed to formalize an existing component of the program in which the Urban Food Systems faculty and students are already meeting regularly each semester to cover topics not included in other parts of the curriculum

IMPACT: No impact on other units.

EFFECTIVE DATE: Fall 2016