Graduate Certificate in Reproductive and Genomic Technologies for Livestock

The graduate certificate program, Reproductive and Genomic Technologies for Livestock, is designed to support creation of a new operational model to transfer complex technologies in reproduction and genomics to U.S. livestock producers. The graduate certificate program will support the unmet need for advanced training in these disciplines for students and industry professionals. The program will be an avenue for students from the University of Missouri and beyond to receive training that is otherwise unavailable. The certificate can stand-alone or may be earned as part of an approved animal science or veterinary training program. The certificate program will be administered through the Division of Animal Sciences with an initial focus on beef cattle. The intent is to provide further training and expertise in the area of beef cattle reproduction and genomics for animal science graduate students, post-baccalaureate students, veterinary students and professionals. This certificate program will be supported through the National Center for Applied Reproduction and Genomics (NCARG). The center is a USDA-funded initiative stemming from a partnership between the MU College of Agriculture, Food, and Natural Resources and the MU College of Veterinary Medicine. The primary mission of NCARG is to accelerate the adoption of profitable reproductive and genomic technologies in the livestock industry.

Requirements

To complete this certificate program, students must complete 12 course hours from the listing below. Coursework can be completed in 36 weeks, and must be completed within 5 years after the student is accepted into the program. No grade lower than a C will be accepted toward certificate completion. Practicum courses will consist of online and in-person instruction, whereas all other courses will be on-line exclusively. The online nature of these courses facilitates completion of many of the requirements for the certificate program to be completed off campus, making the program more attractive to a broader audience, including students attending minority-serving institutions and working professionals.

Required Courses		
AN_SCI 7904	Physiological Principles and Fundamentals of Bovine Reproduction	2
AN_SCI 7914	Applications of Reproductive Technologies	2
AN_SCI 7903	Applied Livestock Genetics	2
AN_SCI 7913	Introduction to Genomics	1
AN_SCI 7905	Marketing & Advocating Reproductive and Genomic Services	1
Select Four Courses		
AN_SCI 7XXX/8XXX	Estrus Synchronization & AI Practicum	1
AN_SCI 7XXX/8XXX	Prebreeding Evaluation of Heifers & Bulls Practicum	1
AN_SCI 7XXX/8XXX	Pregnancy Diagnosis Practicum	1
AN_SCI 8XXX	In-Vitro Fertilization and Embryo Transfer Practicum	1
AN_SCI 8XXX	Advanced Genomic Applications	1
AN_SCI 8XXX	Next-generation Breeding Technologies	1

* All courses are being created and subject to change. They are not currently listed within the catalog.

Sample Plan of Study

First Year			
Fall	**CR**	**Spring**	**CR**
AN_SCI 7904::Physiological Principles and Fundamentals of Bovine Reproduction	2	AN_SCI 7903::Applied Livestock Genetics	2
AN_SCI 7914::Applications of Reproductive Technologies	2	AN_SCI 7913::Introduction to Genomics	1
AN_SCI 7905::Marketing & Advocating Reproductive and Genomic Services	1	AN_SCI 7XXX/8XXX::Estrus Synchronization & AI Practicum	1
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Second Year			
Fall	**CR**		
AN_SCI 7XXX/8XXX::Pregnancy Diagnosis Practicum	1		
AN_SCI 8XXX::In-Vitro Fertilization and Embryo Transfer Practicum	1		
AN_SCI 8XXX::Advanced Genomic Applications	1		
	3		
Total Credits: 12			