Cover Sheet: Request 15226

Animal Genetics Undergraduate Certificate

Info

Process	Certificate|New|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Raluca Mateescu RALUCA@UFL.EDU
Created	8/20/2020 6:23:20 PM
Updated	11/23/2020 8:19:13 AM
Description of request	New undergraduate certificate offered by the Department of Animal Sciences.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Animal Sciences 60090000	Saundra Tenbroeck		8/21/2020
CALS CC Checklist.pdf					8/20/2020
College	Approved	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Approved by the CALS CC on 9/25/20.	9/25/2020
No document changes					
Office of Institutional Planning and Research	Approved	PV - Office of Institutional Planning and Research	Cathy Lebo		11/17/2020
No document changes					
Associate Provost for Undergraduate Affairs	Approved	PV - Associate Provost for Undergraduate Affairs	Casey Griffith		11/23/2020
Catalog Copy - Animal Genetics Certificate.docx					11/19/2020
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			11/23/2020
No document changes					
Office of the Registrar					
No document changes					
OIPR Notified					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
Academic Assessment Committee Notified					
No document changes					
College Notified					
No document changes					

Certificate|New for request 15226

Info

Request: Animal Genetics Undergraduate Certificate
Description of request: New undergraduate certificate offered by the Department of Animal Sciences.
Submitter: Raluca Mateescu RALUCA@UFL.EDU
Created: 12/6/2020 7:29:52 PM
Form version: 2

Responses

Certificate Name Animal Genetics
Transcript Title Animal Genetics
Credits 11
Level Baccalaureate
CIP Code 01.0901
Degree Program Animal Sciences
Effective Term Earliest Available
Effective Year Earliest Available
Certificate Description This Animal Genetics certificate provides students a background in Mendelian, population and quantitative genetic inheritance, in-dept knowledge of genetic improvement and management programs, and the application of genetic principles towards the improvement of the health and production of livestock and domestic animals.
Requirements for Admission Sophomore standing or departmental permission.
Pre-requisite courses: ANS 3006 and BSC 2011 and BSC 2011L or equivalents.
The certificate program accepts both UF students and non-degree seeking students.
Requirements for Completion Eleven credits that consist of the courses listed below. Students must maintain a C or better in each course to earn the certificate.
ANS3384C Genetics of Domestic Animals (3 credit hours, letter graded)
ANS4388 Canine and Feline Genetics (3 credit hours, letter graded)
ANS4382 Equine Genetics (2 credit hours, letter graded)
ANS4XXX Genetic Analyses of Complex Traits in Livestock (3 credit hours, letter graded)
Rationale and Place in Curriculum The world demand for animal-based food products is anticipated to increase by 70% by 2050. Meeting this demand with a minimal impact on the environment will require the implementation of advanced technologies, and methods to improve the genetic quality of livestock are expected to make a major contribution. The University of Florida is uniquely poised to address these challenges by increasing the knowledge about animal genetics among undergraduate students, catalyze and coordinate genetics and genomics education to achieve advances that generate societal and environmental benefits.

Animals and livestock contribute 40 % of the global value of agricultural output and contribute to the livelihoods and food security of almost a billion people worldwide. Advances in animal breeding, genetics, and genomics are facilitating a more efficient and sustainable industry. The Animal Genetics certificate will attract students and postgraduate professionals to the field and to campus, will encourage students to engage in further study of genetics. Advances in genomic technologies already revolutionizes the field of animal genetics and this certificate will prepare and train students for future educational and employment opportunities. It is imperative that our students understand the complexities of agricultural systems and are educated about the innovation, diversity and technological advances characterizing this field.

It is expected that many students enrolling in this certificate program will have a major in Animal Sciences. Students interested in companion animals and agricultural science will develop expertise in the application of emerging technologies in genomics, computational biology and system biology in genetic improvement programs addressing current and future challenges facing livestock industries. Real life examples and practical applications will be key components of this program in order to appreciate the intricacies of genetics and the future of genomic research for the improvement and management of animals. The proposed Animal Genetics certificate is highly compatible as an academic component option within the current Animal Science major. The courses offered do not overlap with any other certificate offerings statewide.

Academic Learning Compact: The Undergraduate Certificate in Animal Genetics is offered by the Department of Animal Sciences. Completion of the certificate will enable students to think critically and apply principles and knowledge of animal genomics, computational biology, molecular and cell biology, and quantitative genetics to develop animal production systems and alternative strategies to maximize animal, human, environmental, and economic health. Students will gain knowledge to evaluate genetic diversity, develop and critically evaluate selection schemes for implementing genetic improvement in livestock and domestic animals. Students will acquire knowledge about adoption of new technology and innovative practices in genetic improvement programs while maintaining sustainability. This program provides a solid foundation for those planning careers in medicine, agriculture and the pharmaceutical industry in diverse public and private settings. Students can also combine their studies of genetics with related fields such as business or public policy, with a view to managerial positions in biotechnology fields, or positions in government or law.
Student Learning Outcomes Student Learning Outcomes:

Content
1. Identify and characterize basic principles of animal breeding and genetics, use them to predict phenotype based on genotype. (ANS3384C, ANS4388, ANS4382). Assessment types: course-related quiz/exam; writing assignment.
2. Describe the mode of inheritance for various traits in domestic and companion animals. (ANS3384C, ANS4388, ANS4382). Assessment types: course-related quiz/exam; writing assignment.
3. Classify various factors that affect the rate of genetic change in animal breeding improvement. (ANS3384C, ANS4XXX). Assessment types: course-related quiz/exam; writing assignment.

Critical Thinking
4. Describe and analyze different methods of gene mapping including linkage association analyses. (ANS3384C, ANS4388, ANS4382, ANS4XXX) Assessment types: course-related quiz/exam; writing assignment.
5. Describe the symptoms and implications of genetic disease in horses, cats and dogs. (ANS4388, ANS4382) Assessment types: course-related quiz/exam; writing assignment; final project
6. Discuss applications of biotechnology and genomics to animal breeding and genetics. (ANS3384C, ANS4388, ANS4382, ANS4XXX) Assessment types: course-related quiz/exam; writing assignment; final project

Communication
7. Evaluate and report the use of current genetic tests to plan a breeding program. (ANS4388, ANS4382, ANS4XXX). Assessment types: course-related quiz/exam; writing assignment; final project
8. Propose functional genomic approaches and develop strategies to find genes responsible for genetic variation in complex traits. (ANS4XXX). Assessment types: course-related quiz/exam; writing assignment; final project

CALS Curriculum Committee
Submission Checklist

NOTE: This checklist must be included with all course and certificate submissions.

The checklist below is intended to facilitate course and certificate submissions to the University of Florida Academic Approval Tracking System (https://approval.ufl.edu/). The checklist consists of the most common items that can cause a submission to require changes or be recycled. Contrary to information provided on the UF approval site, the CALS Curriculum Committee requires a syllabus be submitted with each new course or course modification request. Please note that submitters are encouraged to attend the CALS CC meeting at which their item is being reviewed. This allows the submitter to answer any potential questions that may arise that could cause the item to not be approved. Also, be aware that when completing the UCC form the section Description of Request is asking for a brief statement about what you are doing. This is **not** the place for a course description. A statement such as "Proposal of a new undergraduate course" is all that is needed. Please do not submit documents in pdf format. All documents should be submitted in Word to facilitate editing on our end if necessary.

CHECKLIST: PLEASE INITIAL OR MARK N/A FOR EACH STATEMENT TO INDICATE YOUR COMPLIANCE.

X___ It is required when making a submission that you consult your department's representative to the CALS CC. A list of current members can be found on the committee site located at: https://cals.ufl.edu/faculty-staff/committees/.

X___ Review the CALS Syllabus Policy. This document can be viewed at the committee site (https://cals.ufl.edu/faculty-staff/committees/) by clicking on the Curriculum Committee – Information & Documents heading and scrolling down to Forms, Checklists, and Other documents. The other items included here are all very helpful when making a curriculum submission. Some will be mentioned in other checklist items below.

X___ Joint course submissions must include both graduate and undergraduate syllabuses and a separate statement outlining the substantial (more than one) differences in assignments between the two courses. These assignments must account for at least a 15% difference in graded material between the two levels. If this is a new course submission both courses must be submitted for approval simultaneously.

X___ The course description on the UCC form and in the syllabus must match. Any other information you wish to include needs to be under a different heading such as background or additional information.

x___ The course learning objectives must be consistent with Bloom's taxonomy. Please see the following link at the CALS Curriculum site. (https://cals.ufl.edu/content/PDF/Faculty_Staff/cals-course-objectives.pdf). Do not use the words demonstrate or understand when listing learning objectives.

x___ The course schedule should be concise and include the appropriate number of weeks in the semester.

x___ All graduate course submissions must include a reading list if a textbook is not required. The reading list should include at least some current readings (within the last 5 years). All readings do not need to be current.

x___ Outside consultations are required if there is a possibility of the proposed course covering material taught in another department or college on campus. There must be a consult form completed by the chair of the department from who you are seeking the consult. Instructors may provide additional consults. The form can be found at: https://registrar.ufl.edu/pdf/uccconsult.pdf.

x___ Prerequisite courses are required for 3000 and 4000 level courses. This line of the approval form cannot be "none" or left blank. Junior or senior standing is an acceptable option. A phrase such as "a course in basic biology" is not acceptable.

x___ Decimal points must be included in the grading scale if grade cut-offs are based on percentages. While this is not a university policy it is a CALS standard practice to avoid any confusion when final grades for the course are determined.

x___ The attendance and make-up policy in a syllabus cannot contradict the university's policy. Do not include any additional wording to this policy. A statement and link regarding this is included in the CALS Syllabus Statements. For the approval process the college suggests a less is more view when it comes to this policy.

x___ The most recent version of the CALS Syllabus Statements boiler plate must be included in all syllabuses. This document is included in the CALS Syllabus Policy and can be copied and pasted to the syllabus. Do not use the boilerplate statements from an old syllabus as they are likely to be out of date.

Certificates

If proposing a new undergraduate or graduate level certificate that includes any courses outside of the submitters department a statement regarding any possible impact on those courses needs to be included. An email from the instructor is acceptable. Also, any courses required for the certificate must have permanent prefixes and course numbers.

Animal Genetics

certificate

Animal Genetics Certificate

This Animal Genetics certificate provides students a background in Mendelian, population and quantitative genetic inheritance, in-dept knowledge of genetic improvement and management programs, and the application of genetic principles towards the improvement of the health and production of livestock and domestic animals.

College: Agricultural and Life Sciences
Credits: 11 | Completed with minimum grades of C
Certificates must contain at least nine credits of coursework that are unique to that program out of all other certificates and minors.

Department Information

The Department of Animal Sciences creates new solutions to tomorrow's problems in the areas of teaching, research, and extension, by integrating the most modern technologies available with personal expertise and attention to the needs of both students and industry.

Website

CONTACT

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2250 Shealy Drive

GAINESVILLE FL 32608

Map

Curriculum

Animal Sciences
Combination Degrees

Academic Learning Compact

Students of sophomore standing or higher may enroll in this certificate, or with department permission.

Required Courses

Code	Title	Credits
ANS 3384C	Genetics of Domestica Animals	3
ANS 4388	Canine and Feline Genetics	3
ANS 4382	Equine Genetics	2
ANS 4XXX (course approved by UCC, pending Statewide Course Number)	Genetic Analyses of Complex Traits in Livestock	3
Total Credits		**11**

Course List