Cover Sheet: Request 15191

ANS4XXX - GENETIC ANALYSES OF COMPLEX TRAITS IN LIVESTOCK

Info

Process	Course|New|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Raluca Mateescu RALUCA@UFL.EDU
Created	7/22/2020 1:00:46 PM
Updated	9/16/2020 3:52:34 PM
Description of request	Create an undergraduate section for the existing ANS6387 Genetic Analyses of Complex Traits in Livestock course. With the new advances we have witness in the last few years relative to DNA technology and its use in animal agriculture it is imperative for our students to be exposed to these topics.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Animal Sciences 514909000	Saundra Tenbroeck		8/3/2020
No document changes					
College	Approved	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Edits requested by the CALS CC have been made.	9/16/2020
ANSI 4XXX Genetic Analyses Complex Traits Syllabus v2.docx ANSI 6387 Syllabus_Spring 2021.docx CALS CC Checklist.pdf					9/16/2020 9/16/2020 8/18/2020
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			9/16/2020
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|New for request 15191

Info

Request: ANS4XXX - GENETIC ANALYSES OF COMPLEX TRAITS IN LIVESTOCK
Description of request: Create an undergraduate section for the existing ANS6387 Genetic Analyses of Complex Traits in Livestock course. With the new advances we have witness in the last few years relative to DNA technology and its use in animal agriculture it is imperative for our students to be exposed to these topics.
Submitter: Raluca Mateescu RALUCA@UFL.EDU
Created: 9/16/2020 3:41:21 PM
Form version: 3

Responses
Recommended Prefix ANS
Course Level 4
Course Number XXX
Category of Instruction Joint (Ugrad/Grad)
Lab Code None
Course Title Genetic analyses of complex traits in livestock
Transcript Title Quant Genet Analyses
Degree Type Baccalaureate

Delivery Method(s) On-Campus, Online
Co-Listing Yes
Co-Listing Explanation Different exams will be prepared for undergraduate and graduate students. Undergraduate exams will have more general questions about the content presented in the lectures and will be worth 50 points each. Graduate exams will have additional/different questions which will require answers with greater detail and will be worth 100 points each.

Undergraduate students will not be required to present an article, each graduate student will be required to present an article.

Undergraduate students will be required to write a summary for each article, 20 points each. This will require the undergraduate student to reflect on each reading and to generate short, meaningful summaries.
Effective Term Earliest Available
Effective Year 2020
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 3

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description Comprehensive examination of principles of livestock inheritance, QTL mapping strategies and functional genomic approaches used for genomic selection and improvement programs in farm animals.
Prerequisites ANS3384C or equivalent
Co-requisites N/A
Rationale and Placement in Curriculum Analysis of complex traits including marker assisted selection and QTL mapping are important topics in animal and plant breeding. This course will expose students to recent DNA based technologies and their use in selection programs.
Course Objectives 1. Describe and illustrate different molecular methods of genotyping and gene characterization;
2.   Present and analyze the components of the basic genetic model for quantitative traits;
3.   Define and apply various statistics used in quantitative animal breeding: mean, variance, covariance, heritability, repeatability, selection, selection response, selection intensity;

4.   Classify the various factors that affect the rate of genetic change in animal breeding improvement;
5.   Describe and analyze different methods of gene mapping including linkage association analyses;
6.   Analyze various functional genomic approaches and discuss strategies to find genes responsible for genetic variation in complex traits.

Course Textbook(s) and/or Other Assigned Reading Text
No formal text is required. Students will be provided handouts, which are current and relevant to topics discussed in class. Optional references include:
-       Lynch and Walsh, Genetics and Analysis of Quantitative Traits, Sinauer, 1998
-       Cockett and Kole, Genome Mapping and Genomics in Domestic Animal, Springer, 2010

Students will be expected to read and discuss several journals articles from the following:
•   Benefits and limitations of genome-wide association studies. Nature Reviews Genetics. 20(8):467-484. 2019
•   Applied Animal Genomics: Results from the Field. Annual Review of Animal Biosciences 2:105-139. 2014
•   Accelerating Improvement of Livestock with Genomic Selection. Annual Review of Animal Biosciences 1:221-237. 2013
•   Genomics to systems biology in animal and veterinary sciences: Progress, lessons and opportunities. Livestock Science 166:232-248. 2014
•   Understanding and predicting complex traits: knowledge from cattle. Human Molecular Genetics, 21:45-51. 2012
•   Genetics of complex traits: prediction of phenotype, identification of causal polymorphisms and genetic architecture. Proceedings Biological Sciences, 27:283(1835). 2016
•   Towards sequence-based genomic selection of cattle. Nature Genetics, 46(8):807-809. 2014
•   Harnessing genomic information for livestock improvement. Nature Reviews Genetics. 20(3):135-156. 2019
•   Integration of summary data from GWAS and eQTL studies predicts complex trait gene targets. Nature Genetics. 48(5):481-487. 2016
•   Genome-wide association studies for complex traits: consensus, uncertainty and challenges. Nature Reviews. Genetics, 9(5):356–69. 2008
•   Invited review: quantitative trait nucleotide determination in the era of genomic selection. Journal of Dairy Science, 94(3):1082–90. 2011
•   Mapping, fine mapping, and molecular dissection of quantitative trait loci in domestic animals. Annual Review of Genomics and Human Genetics, 8:131–62. 2007
•   Turning science on robust cattle into improved genetic selection decisions. Animal: An International Journal of Animal Bioscience, 6(4):551–6. 2012
•   Symposium review: How to implement genomic selection. Journal of Dairy Science. 103(6):5291-5301. 2020
•   Livestock 2.0 – genome editing for fitter, healthier, and more productive farmed animals. Genome Biology, 26;19(1):204. 2018
•   Genome editing approaches to augment livestock breeding programs. Journal of Experimental Biology. 7:223. 2020

Weekly Schedule of Topics   Monday   Wednesday   Friday
Week 1 Introduction, overview animal breeding; Overview of Population Genetics
Week 2 Basic statistics; Heritability; Genetic evaluation
Week 3 Genetic evaluation, cont.; Predicting response to selection
Week 4 Factors influencing rate of genetic change; Comparing Selection Programs; Adding genomic information in selection
Week 5 Exam 1; Principles of Marker-based Analysis; Marker-based Analysis
Week 6 Molecular Markers; Genotyping methods
Week 7 Linkage Disequilibrium; Genetic maps; Mapping QTL
Week 8 Experimental populations; Experimental populations: backcross or F2; Article 1 Presentation/Discussion
Week 9

Spring Break
Week 10   Article 2 Presentation/Discussion; Exam 2; QTL detection Strategies: Candidate gene

approach
Week 11   Linkage Mapping; Article 3 Presentation/Discussion; Article 4 Presentation/Discussion
Week 12   Association mapping; Article 5 Presentation/Discussion
Week 13   Exam 3; Marker Assisted Selection
Week 14   Article 6 Presentation/Discussion; Article 7 Presentation/Discussion
Week 15   Genomic Selection; Article 8 Presentation/Discussion
Week 16   Genetical Genomics; Article 9 Presentation/Discussion
Week 17   Final Exam

Grading Scheme Exams (24.6%)
There will be 3 exams worth 150 points each. The final exam is not comprehensive. The material covered in the exam will be detailed prior to each exam. (see important dates)

Problem Sets (16.4%)
There will be 4 problem sets worth 25 points each. Instructions and due dates will be provided in class.

Article Summaries (29.5%)
There will be 9 assignments to demonstrate understanding of articles. Each summary will be worth 20 points. Each summary should be a clear, concise (25 words or less), and coherently organized statement of the main ideas in the article. Summaries will be graded on a specific rubric.

Article Discussion (29.5%)
There will be 9 lecture times assigned to article discussions worth 20 points each. Students will be graded on their participation in the discussion. Presentations will be conducted by graduate students. Students are expected to read the article carefully and highlight sections which are either not clear or interesting and making important points. Students should be prepared to discuss these in class. In addition, students will have to formulate 2 questions to be discussed during class - please pay attention when you formulate these questions as you will be graded on their accuracy and clarity. To receive full credit, post your questions before midnight the day before the article is presented. Participation will be evaluated on a specific rubric provided in class.

Scoring Rubric for Article Discussion

Student: _____
Article: _____
Date:_____

o   Questions posted on time on CANVAS (5 pts)
o   Questions are relevant, clearly formulated (5 pts)
o   Participation in class discussion and demonstration of a basic understanding of the concept presented. (10 pts)

Scoring Rubric for Article Summary

1. Structural Format (5 pts)
- Is the summary 25 words or less?
- Is the summary a coherent sentence, or sentences?
2. Clarity of Thought and Expression (10 pts)
- Are the ideas expressed well, well thought out, and integrated?
- Are correct grammar and syntax used?
3. Delineation of Core Message (5 pts)
- Does the summary accurately reflect the reading's essential message(s)?

Instructor(s) Raluca Mateescu
Attendance & Make-up Yes
Accomodations Yes

UF Grading Policies for assigning Grade Points Yes
Course Evaluation Policy Yes

ANS 4XXX – Spring 2021
Genetic Analyses of Complex Traits In Livestock
3 Credit Hours

Lecture times   **Mondays** and **Wednesdays** 11:45am - 1:00pm
Instructor

    Dr. Raluca Mateescu

        Office: 106 ANS; Phone: 392-2367;

        e-mail: raluca@ufl.edu

Office Hours : M & W, 1:00pm – 2:00pm or by appointment (contact Dr. Mateescu)

Course Description
Comprehensive examination of principles of livestock inheritance, QTL mapping strategies and functional genomic approaches used for genomic selection and improvement programs in farm animals.

Course Objectives
By the end of the semester, the student should be able to:
1. Describe and illustrate different molecular methods of genotyping and gene characterization.
2. Present and analyze the components of the basic genetic model for quantitative traits.
3. Define and apply various statistics used in quantitative animal breeding: mean, variance, covariance, heritability, repeatability, selection, selection response, selection intensity.
4. Classify various factors that affect the rate of genetic change in animal breeding improvement.
5. Describe and analyze different methods of gene mapping including linkage association analyses.
6. Analyze various functional genomic approaches and discuss strategies to find genes responsible for genetic variation in complex traits.

Attendance Policy
All exam information will be covered during the course of the lectures. **Attendance is strongly encouraged, and students are responsible for all material covered in lecture** . It is highly recommended that you attend class if you expect to obtain a satisfactory grade.

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies

Contacting the Instructor
The instructor will be available for students. Please make arrangements to visit at your convenience. If you call and I am not available, leave your name and telephone number or e-mail address and you will be contacted as soon as the message is received. **The best method to reach me is through e-mail. DO NOT WAIT UNTIL EXAMINATION TIME!**

Please ask questions in class and do not be apprehensive about concepts that might not be clear. It is important to keep up and not fall behind.   Get started on the first day of class – do your homework on time – attend class – get help when you need it – and remember there is no substitute for **DAILY PREPARATION. It is much easier on all of us if you get answers to questions one or two days after class rather than one or two days before an exam.**

Text
No formal text is required. Students will be provided handouts, which are current and relevant to topics discussed in class. Optional references include:
- Lynch and Walsh, Genetics and Analysis of Quantitative Traits, Sinauer, 1998
- Cockett and Kole, Genome Mapping and Genomics in Domestic Animal, Springer, 2010

Students will be expected to read and discuss several journals articles from the following:
- Benefits and limitations of genome-wide association studies. *Nature Reviews Genetics.* 20(8):467-484. 2019
- Applied Animal Genomics: Results from the Field. *Annual Review of Animal Biosciences* 2:105-139. 2014
- Accelerating Improvement of Livestock with Genomic Selection. *Annual Review of Animal Biosciences* 1:221-237. 2013
- Genomics to systems biology in animal and veterinary sciences: Progress, lessons and opportunities. *Livestock Science* 166:232-248. 2014

- Understanding and predicting complex traits: knowledge from cattle. *Human Molecular Genetics* , 21:45-51. 2012
- Genetics of complex traits: prediction of phenotype, identification of causal polymorphisms and genetic architecture. *Proceedings Biological Sciences* , 27:283(1835). 2016
- Towards sequence-based genomic selection of cattle. Nature Genetics, 46(8):807-809. 2014
- Harnessing genomic information for livestock improvement. *Nature Reviews Genetics.* 20(3):135-156. 2019
- Integration of summary data from GWAS and eQTL studies predicts complex trait gene targets. Nature Genetics. 48(5):481-487. 2016
- Genome-wide association studies for complex traits: consensus, uncertainty and challenges. *Nature Reviews. Genetics* , *9* (5):356–69. 2008
- Invited review: quantitative trait nucleotide determination in the era of genomic selection. *Journal of Dairy Science* , *94* (3):1082–90. 2011
- Mapping, fine mapping, and molecular dissection of quantitative trait loci in domestic animals. *Annual Review of Genomics and Human Genetics* , *8* :131–62. 2007
- Turning science on robust cattle into improved genetic selection decisions. *Animal: An International Journal of Animal Bioscience* , *6* (4):551–6. 2012
- Symposium review: How to implement genomic selection. *Journal of Dairy Science* . 103(6):5291-5301. 2020
- Livestock 2.0 – genome editing for fitter, healthier, and more productive farmed animals. *Genome Biology* , 26;19(1):204. 2018
- Genome editing approaches to augment livestock breeding programs. *Journal of Experimental Biology* . 7:223. 2020

Exams

There will be 3 exams worth 50 points each. The final exam is not comprehensive. The material covered in the exam will be detailed prior to each exam. (*see important dates*)

Problem Sets

There will be 4 problem sets worth 25 points each. Instructions and due dates will be provided in class.

Article Discussion

There will be 9 lecture times assigned to article discussions worth 20 points each. Students will be graded on their participation in the discussion. Presentations will be conducted by graduate students. Students are expected to read the article carefully and highlight sections which are either not clear or interesting and making important points. Students should be prepared to discuss these in class. In addition, students will have to formulate 2 questions to be discussed during class - please pay attention when you formulate these questions as you will be graded on their accuracy and clarity. To receive full credit, post your questions before midnight the day before the article is presented. Participation will be evaluated on a specific rubric provided in class.

Article Summary

Students will be required to reflect on each reading and to generate short, meaningful summaries. Each summary will be worth 20 points. Each summary should be a clear, concise (25 words or less), and coherently organized statement of the main ideas in the article. Summaries will be graded on a specific rubric.

Grade Distribution

3 Exams

150 points

24.6%

4 Problem Sets 100 points

16.4%

9 Article Discussions 180 points   29.5%

9 Article Summaries 180 points

_____   -
____ 29.5%

Total

610 points

100%
Letter grades will be assigned based upon the following scale:

A 93-100%
A- 90-92.9%
B+ 87-89.9%
B 83-86.9%
B- 80-82.9%
C+ 77-79.9%
C 73-76.9%
C- 70-72.9%
D+ 67-69.9%
D 63-66.9%-
D- 60-62.9%-
E 60% and Below

The scale may be lowered but it will not be raised.

Important Dates

Tentative Outline

(Note: This schedule is subject to revision as the course progresses)

Intro/overview animal breeding	Overview of Population Genetics
Basic statistics	Heritability
MLK (no class)	Genetic evaluation
Predicting response to selection	Comparing Selection Programs
Exam 1	Principles of Marker-based Analysis
Molecular Markers	Linkage Disequilibrium
Genetic maps	Experimental populations: backcross or F2
Article 1 Presentation/Discussion	QTL detection Strategies: Candidate gene appro
Spring Break	
Article 2 Presentation/Discussion	**Exam 2**
Linkage Mapping	Article 3 Presentation/Discussion
Association mapping	Article 4 Presentation/Discussion
Exam 3	Article 5 Presentation/Discussion
Article 6 Presentation/Discussion	Article 7 Presentation/Discussion
Genomic Selection	Article 8 Presentation/Discussion
Genetical Genomics	Article 9 Presentation/Discussion
Final Exam	

The instructor reserves the right to modify the syllabus during the semester with verbal or written announcements in class. It is the student's responsibility to stay informed of such announcements.

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General information

Grades and Grade Points
For information on current UF policies for assigning grade points, see
https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/ .

Attendance and Make-Up Work
Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Information on privacy related issues:

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Online Course Evaluation Process
Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals.
Guidance on how to give feedback in a professional and respectful manner is available at:
https://gatorevals.aa.ufl.edu/students/ . Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/ . Summaries of course evaluation results are available to students at: https://gatorevals.aa.ufl.edu/public-results/ .

Academic Honesty
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: " *We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment* ."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code .

Software Use:
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation
0001 Reid Hall, 352-392-8565, https://disability.ufl.edu/

Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well- being are encouraged to

utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

University Counseling & Wellness Center, 3190 Radio Road,   352-392-1575,

vw.counseling.ufl.edu   Counseling Services Groups and Workshops Outreach and Consultation Self-Help Library Wellness Coaching

U Matter We Care,   **www.umatter.ufl.edu/**

Career Connections Center, First Floor JWRU, 392-1601,   https://career.ufl.edu/ .

Student Success Initiative,   http://studentsuccess.ufl.edu .

Student Complaints:

Residential Course: https://sccr.dso.ufl.edu/policies/student-honor-code-student-   conduct-code/.
Online Course: http://www.distance.ufl.edu/student-complaint-process

Lecture times **Mon. & Wed.** 11:45am – 1:00pm, Room: **ANS 201 (Larson Bld)**
Instructor

   Dr. Raluca Mateescu

      Office: 100B ANS; Phone: 392-2367;

      e-mail: raluca@ufl.edu

Office Hours : M, W 1:00pm - 2:00pm or by appointment (contact Dr. Mateescu)

Course Description
Comprehensive examination of principles of livestock inheritance, QTL mapping strategies and functional genomic approaches used for genomic selection and improvement programs in farm animals.

Course Objectives
By the end of the semester, the student should be able to:
1. Describe and illustrate different molecular methods of genotyping and gene characterization.
2. Present and analyze the components of the basic genetic model for quantitative traits.
3. Define and apply various statistics used in quantitative animal breeding: mean, variance, covariance, heritability, repeatability, selection, selection response, selection intensity.
4. Classify various factors that affect the rate of genetic change in animal breeding improvement.
5. Support different methods of gene mapping including linkage association analyses.
6. Analyze various functional genomic approaches and develop strategies to find genes responsible for genetic variation in complex traits.
7. Discuss potential application of marker-assisted selection and genomics in the future of animal breeding.

Attendance Policy
All exam information will be covered during the course of the lectures. **Attendance is strongly encouraged and students are responsible for all material covered in lecture** . It is highly recommended that you attend class if you expect to obtain a satisfactory grade.

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Contacting the Instructor
The instructor will be available for students. Please make arrangements to visit at your convenience. If you call and I am not available, leave your name and telephone number or e-mail address and you will be contacted as soon as the message is received. **The best method to reach me is through e-mail. DO NOT WAIT UNTIL EXAMINATION TIME!**

Please ask questions in class and do not be apprehensive about concepts that might not be clear. It is important to keep up and not fall behind.   Get started on the first day of class – do your homework on time – attend class – get help when you need it – and remember there is no substitute for **DAILY PREPARATION. It is much easier on all of us if you get answers to questions one or two days after class rather than one or two days before an exam.**

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- Genome editing approaches to augment livestock breeding programs. *Journal of Experimental Biology* . 7:223. 2020

Exams

There will be 3 exams worth 100 points each. The final exam is not comprehensive. The material covered in the exam will be detailed prior to each exam. (*see important dates*)

Problem Sets

There will be 4 problem sets worth 25 points each. Instructions and due dates will be provided in class.

Article Discussion

There will be 9 lecture times assigned to article discussions worth 30 points each. Students will be graded on their presentation as well as participation in the discussion. Each student will be required to present at least one journal article and lead the discussion following the presentation.

Powerpoint presentations should be utilized for paper discussions. Student presenters will be expected to present and discuss the following aspects of the article:
- Brief background and objectives of the work
- Explanation of specific studies (i.e. explaining individual figures and tables) which includes a discussion of the methods utilized
- Interpretation of results
- General discussion of outcomes and future perspectives

Presentations will be graded on the following criteria (specific rubric will be provided in class and feedback will be provided following the student presentation):
- Comprehension of scientific basis for research
- Ability to describe and discuss the scientific methods utilized
- Capacity to discuss and interpret results of experiments and their implications
- Ability to lead class discussion

When not presenting, students are expected to participate in paper discussions. Students are expected to read the article carefully and highlight sections which are either not clear or interesting and making important points. Students should be prepared to discuss these in class. In addition, students will have to formulate 2 questions to be discussed during class - please pay attention when you formulate these questions as you will be graded on their accuracy and clarity. To receive full credit, post your questions before midnight the day before the article is presented.
Participation will be evaluated on a specific rubric provided in class.

Grade Distribution

3 Exams

300 points

39.5%
4 Problem Sets 100 points

13.2%
9 Article questions   90 points   11.8%
9 Article Discussions 270 points

_____   -
____ 35.5%
Total

760 points

100%

Letter grades will be assigned based upon the following scale:

A 93-100%
A- 90-92.9%
B+ 87-89.9%
B 83-86.9%
B- 80-82.9%
C+ 77-79.9%
C 73-76.9%
C- 70-72.9%
D+ 67-69.9%
D 63-66.9%-
D- 60-62.9%-
E 60% and Below

The scale may be lowered but it will not be raised.

Important Dates

Tentative Outline
(Note: This schedule is subject to revision as the course progresses.)

Intro/overview animal breeding	Overview of Population Genetics
Basic statistics	Heritability
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Genomic Selection	Article 8 Presentation/Discussion
Genetical Genomics	Article 9 Presentation/Discussion
Final Exam	

The instructor reserves the right to modify the syllabus during the semester with verbal or written announcements in class. It is the student's responsibility to stay informed of such announcements.

General information

Grades and Grade Points
For information on current UF policies for assigning grade points, see
https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/ .

Attendance and Make-Up Work
Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Information on privacy related issues:

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Online Course Evaluation Process
Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals.
Guidance on how to give feedback in a professional and respectful manner is available at:
https://gatorevals.aa.ufl.edu/students/ . Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/ . Summaries of course evaluation results are available to students at: https://gatorevals.aa.ufl.edu/public-results/ .

Academic Honesty
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: " *We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*" You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment* ."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:
http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code .

Software Use:
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues.
Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation
0001 Reid Hall, 352-392-8565, https://disability.ufl.edu/

Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well- being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,*
  www.counseling.ufl.edu   Counseling Services Groups and Workshops Outreach and Consultation Self-Help Library Wellness Coaching
- U Matter We Care,   **www.umatter.ufl.edu/**
- *Career Connections Center,* First Floor JWRU, 392-1601,   https://career.ufl.edu/ .
- Student Success Initiative,   http://studentsuccess.ufl.edu .

Student Complaints:

- Residential Course: https://sccr.dso.ufl.edu/policies/student-honor-code-student-   conduct-code/.
- Online Course: http://www.distance.ufl.edu/student-complaint-process

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.