

RECEIVED

MAY 2 2013

OFFICE OF THE  
SENATE COUNCIL**1. General Information**

1a. Submitted by the College of: AGRICULTURE

Date Submitted: 5/6/2013

1b. Department/Division: Veterinary Science

1c. Contact Person

Name: Ernest Bailey

Email: ebailey@uky.edu

Phone: 218-1105

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Specific Term/Year<sup>1</sup> Fall 2013

1e. Should this course be a UK Core Course? No

**2. Designation and Description of Proposed Course**

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: VS 307

2c. Full Title: Genetics of Horses

2d. Transcript Title:

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 3

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 3

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

2j. Course Description for Bulletin: This course covers the basic principles of genetics and genomics with specific applications to the horse including evolution, coat color genetics, hereditary diseases, cytogenetics, genetics of performance, pedigree studies, population genetics of horse breeds and the genetic relationship among members of the order Perissodactyla.

2k. Prerequisites, if any: prereq: BIO 148, BIO 152, CHE 107, CHE 113 or consent of instructor

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Fall,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 25

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: No

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: [var7InterestExplain]

8. Check the category most applicable to this course: Traditional – Offered in Corresponding Departments at Universities Elsewhere,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: No

If YES, name the proposed new program:

b. Will this course be a new requirement for ANY program?: No

If YES, list affected programs:

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

b. The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from 10.a above) are attached: Yes

## Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6. How do course requirements ensure that students make appropriate use of learning resources?

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10. Does the syllabus contain all the required components? NO

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|MHT222|Mats H Troedsson|Dept approval for ZCOURSE\_NEW VS 307|20121009

SIGNATURE|LGRABAU|Larry J Grabau|College approval for ZCOURSE\_NEW VS 307|20121010

SIGNATURE|JMETT2|Joanie Ett-Mims|Undergrad Council approval for ZCOURSE\_NEW VS 307|20130202

e

Courses	Request Tracking
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### New Course Form

<https://myuk.uky.edu/sap/bc/soap/rfc?services=>

[Open in full window to print or save](#)

Generate F

Attachments:

Upload File

	ID	Attachment
Delete	1786	VS307Syllabus Fall13 Revised.docx

First 1 Last

Select saved project to retrieve...

New

(\*denotes required fields)

**1. General Information**

- a. \* Submitted by the College of: AGRICULTURE Today's Date: 5/6/2013
- b. \* Department/Division: Veterinary Science
- c.
  - \* Contact Person Name: Ernest Bailey Email: ebailey@uky.edu Phone: 218-1105
  - \* Responsible Faculty ID (if different from Contact) Email: Phone:
- d. \* Requested Effective Date:  Semester following approval OR  Specific Term/Year<sup>1</sup> Fall 2013
- e. Should this course be a UK Core Course?  Yes  No

If YES, check the areas that apply:

- Inquiry - Arts & Creativity  Composition & Communications - II
- Inquiry - Humanities  Quantitative Foundations
- Inquiry - Nat/Math/Phys Sci  Statistical Inferential Reasoning
- Inquiry - Social Sciences  U.S. Citizenship, Community, Diversity
- Composition & Communications - I  Global Dynamics

**2. Designation and Description of Proposed Course.**

- a. \* Will this course also be offered through Distance Learning?  Yes<sup>4</sup>  No
- b. \* Prefix and Number: VS 307
- c. \* Full Title: Genetics of Horses
- d. Transcript Title (if full title is more than 40 characters):
- e. To be Cross-Listed<sup>2</sup> with (Prefix and Number):
- f. \* Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours<sup>3</sup> for each meeting pattern type.
 

3 Lecture	Laboratory <sup>1</sup>	Recitation	Discussion
Indep. Study	Clinical	Colloquium	Practicum
Research	Residency	Seminar	Studio
Other	If Other, Please explain:		
- g. \* Identify a grading system:  Letter (A, B, C, etc.)  Pass/Fail
- h. \* Number of credits: 3
- i. \* Is this course repeatable for additional credit?  Yes  No
  - If YES: Maximum number of credit hours:
  - If YES: Will this course allow multiple registrations during the same semester?  Yes  No

j. \* Course Description for Bulletin:

This course covers the basic principles of genetics and genomics with specific applications to the horse including evolution, coat color genetics, hereditary diseases, cytogenetics, genetics of performance, pedigree studies, population genetics of horse breeds and the genetic relationship among members of the order Perissodactyla.

k. Prerequisites, if any:

prereq: BIO 148, BIO 152, CHE 107, CHE 113 or consent of instructor

l. Supplementary teaching component, if any:  Community-Based Experience  Service Learning  Both

3. \* Will this course be taught off campus?  Yes  No

If YES, enter the off campus address:

4. Frequency of Course Offering.

a. \* Course will be offered (check all that apply):  Fall  Spring  Summer  Winter

b. \* Will the course be offered every year?  Yes  No

If No, explain:

5. \* Are facilities and personnel necessary for the proposed new course available?  Yes  No

If No, explain:

6. \* What enrollment (per section per semester) may reasonably be expected? 25

7. Anticipated Student Demand.

a. \* Will this course serve students primarily within the degree program?  Yes  No

b. \* Will it be of interest to a significant number of students outside the degree pgm?  Yes  No

If YES, explain:

VS 307 is designed as an elective for students in the majors of Animal Sciences, Equine Science and Management, and Biology.

8. \* Check the category most applicable to this course:

- Traditional – Offered in Corresponding Departments at Universities Elsewhere
- Relatively New – Now Being Widely Established
- Not Yet Found in Many (or Any) Other Universities

9. Course Relationship to Program(s).

a. \* Is this course part of a proposed new program?  Yes  No

If YES, name the proposed new program:

b. \* Will this course be a new requirement<sup>2</sup> for ANY program?  Yes  No

If YES<sup>2</sup>, list affected programs:

10. Information to be Placed on Syllabus.

a. \* Is the course 400G or 500?  Yes  No

If YES, the differentiation for undergraduate and graduate students must be included in the information required in 10.b. You must include: (i) Ident additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b.  \* The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if appl 10.a above) are attached.

- Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
- The chair of the cross-listing department must sign off on the Signature Routing Log.
- In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, is two hours per week for a semester for one credit hour. (from SR 5 2 1)
- You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.
- In order to change a program, a program change form must also be submitted.

Rev 8/09

[Submit as New Proposal](#)   [Save Current Changes](#)   [Delete Form Data and Attachments](#)

Veterinary Science 307  
VS 307-001

## Genetics of Horses

Fall 2013

This course will cover the basic principles of genetics and genomics with specific applications to the horse including evolution, coat color genetics, hereditary diseases, cytogenetics, genetics of performance, pedigree studies, population genetics of horse breeds and the genetic relationship among members of the order Perissodactyla.

**Faculty Instructor:**

Ernie Bailey  
[ebailey@uky.edu](mailto:ebailey@uky.edu)  
323 Gluck Equine Research Center

859-218-1105

Office hours are Wednesdays 2-4 PM or by appointment.

**Prerequisites:** Biology 148 & 152 and Chemistry 105 & 107 or 104 & 108 or consent of instructor

**Communication and Reporting:** I use email extensively. You will receive articles, changes to the syllabus and individual correspondence by email. Please check your email messages daily. If I send a message and it does not bounce back to me, I will assume that you have received it. Consider it an assignment to check your email messages daily.

**Lectures:** There will be two lectures weekly on Tuesday and Thursday at 9:30AM to 10:45 AM.

**Course Material:** The material presented in the course will focus on a variety of topics related to the genetics of the horse. The material will be presented as readings in the text book, supplemented readings, lecture, class discussion and student presentations.

**The student outcomes include:**

- 1) Students will compare the diverse modes of inheritance, including Mendelian genetics, mitochondrial genetics, sex-linked inheritance and sex-limited traits, and distinguish them from traits resulting from management.
- 2) Students will compare the different molecular DNA changes that can change health, color and performance and predict when DNA mutations will be neutral or have an impact.
- 3) Students will discuss the nature of variation among diverse equids and assess those characteristics associated with breed and species distinctions..

**Textbook:** *Horse Genetics* by Ernest Bailey and Samantha Brooks (2013) CABI publishers, Oxford.

**Format:** Lecture/Discussion will be led by instructor or guest lecturers on topics described in the syllabus. Student will read text assignments and participate in discussions

**Participation (30%):** This class is not just about collecting facts. Your participation is very important. Consequently, attendance, response to questions, raising questions and sharing your insights are part of the grade. Besides, it is very boring for both of us if I just lecture. Evaluation of participation is based a record of attendance in classes and on an expectation that students will pose at least one question or make one oral contribution in each class.

**Weekly Quizzes (15%):** The main point of this exercise is to ensure that you are prepared to participate in class discussions. At the beginning of each section a 10 minute, open book quiz will be given. Open book makes it possible for you to find the detailed answer to questions. 10 minutes means that you need to be familiar with the chapter and the issues in the book to finish in time.

**Tests (40%):** Tests will cover reading and material presented in reading or covered in lectures and discussions. (Take good notes.) The format will include short answer, fill in the blank or multiple choice questions. For final grading the lowest test score will be dropped from the semester tests.

**Final Exam (15%):** The final exam is a test conducted in the regular classroom on date listed in the College Schedule. Half of the final exam covers the material since the last exam and half the final is comprehensive using some of the questions taken directly from the weekly quizzes.

**Grading:**

Participation and attendance	30%
Weekly Quizzes	15%
4/5 Tests	40%
<u>Final Exam</u>	<u>15%</u>

Total 100%

- Attendance is required; see the policy on absence;
- Lowest scored test will be dropped from grading.

Grades:	A = 90% or more
	B = 80% -89%
	C = 70%-79%
	D = 60%-69%
	E = less than 60%

**Mid-term** grades will be posted in myUK by the deadline established in the Academic Calendar (<http://www.uky.edu/Registrar/AcademicCalendar.htm>)

**Accommodations due to disability:** If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: [jkarnes@email.uky.edu](mailto:jkarnes@email.uky.edu)) for coordination of campus disability services available to students with disabilities.

**Policy on Absences:**

The University of Kentucky recognizes the following as valid reasons for missing class or an exam: ([http://www.uky.edu/Ombud/ForStudents\\_ExcusedAbsences.php](http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php))

- 1) Illness of the student or serious illness of the student's immediate family. The instructor shall have the right to request appropriate verification.
- 2) The death of a member of the student's immediate family. The instructor shall have the right to request appropriate verification.
- 3) Trips for members of student organizations sponsored by an academic unit, trips for University classes and field trips for participation in intercollegiate athletic events. When feasible, the student must notify the instructor prior to the occurrence of such absences, but in no case shall notification occur more than one week after the absence. Instructors may request formal notification from the appropriate University personnel to document the participation in the trip.
- 4) Major religious holidays. Students are responsible for notifying the instructor in writing the anticipated absences due to the observation of such holidays no later than the last day for adding a class.
- 5) Any other circumstances which the instructor finds reasonable cause for non-attendance.

**Please Note:**

No make-up presentations or assignments will be allowed unless there is a valid reason for missing the work. A grade of 0 will be given for work missed during un-excused absences. Work must be made up within 2 weeks and it is the responsibility of the student to schedule the time.

**Academic Ombud Office:** The academic Ombud office is an important resource to assist students and faculty resolve points of miscommunication or other issues which arise in connection with classes.

“At the University of Kentucky, the Office of Academic Ombud Services is responsible for assisting students and instructors work through and resolve academic related problems and conflicts. The major arenas of activity for UK's Academic Ombud include both Student Academic Rights and Academic Offenses. The primary focus of Academic Ombud Services is the process by which decisions are made, and the primary task of the Ombud is to ensure fair policies, processes, and procedures that are equitably implemented. Thus, the Academic Ombud is a neutral party working as an advocate for fairness and equity.” (<http://www.uky.edu/Ombud/index.php>)

"It's interesting that you have tried to train blood and flesh to the perfection of a machine but that it's still blood and flesh."

- William Faulkner in 1955 at the Kentucky Derby.

"How do you catch a loose horse? Make a noise like a carrot."

- British Cavalry joke

"Fly from him like the plague because he is brother to the cow!"

– Arab proverb regarding pinto horses.

(Note: Although spotting patterns were highly selected following domestication of the horse, Arabs never did like them, possibly because pink skin under the white spots was sensitive to the sun.)

"Wherever man has left his footprint in the long ascent from barbarism to civilization we will find the hoofprint of the horse beside it."

~John Moore

# Genetics of the Horse

VS 307-001

Tentative Lecture Schedule (Fall 2013)

(Topics and schedule may change based on class interactions)

Based on 30 classes of 75 minutes (2 per week over the semester)

Date	Lecture	Topic and Reading
Aug 29	1	<b>Introduction to Course: Evolution and Domestication</b> Assignment: Read Class Text, Chapter 1, beginning of Chapter 2
Sept 3	2	<b>Basic Genetics: nature of DNA</b> Assignment: Read Class Text, Chapter 2
Sept 5	3	<b>Basic Genetics: Cells, Chromosomes, Mitosis and Meiosis</b> Assignment: Read Class Text, Chapter 2
Sept 10	4	<b>Basic Genetics: Alleles, Zygosity, Segregation, and Nomenclature</b> Assignment: Study for Test #1
Sept 12	5	<b>Test #1 over Chapter 1 &amp; 2</b> Assignment: Read Class Text, Chapter 2
Sept 17	6	<b>Basic Genetics: Punnett Squares, Mendelian ratios, Homozygous Lethals</b> Assignment: Study for Test #1
Sept 19	7	<b>Basic Genetics: Polygenic traits and Linkage</b> Assignment: Read Class Text, Chapter 3
Sept 24	8	<b>Genomics</b> Assignment: Read Class Text, Chapter 3
Sept 26	9	<b>Genomics</b> Assignment: Study for Test #2
Oct 1	10	<b>Test #2- Chapters 2 &amp; 3</b> Assignment: Read Class Text, Chapters 4 & 5
Oct 3	11	<b>Bay, Chestnut and Black/ Dilution Coat Colors</b> Assignment: Read Class Text, Chapter 6
Oct 8	12	<b>Tobiano, Sabino and White (KIT)</b> Assignment: Read Class Text, Chapter 7 & 8
Oct 10	13	<b>Grey, Frame Overo and Splashed White</b> Assignment: Read Class Text, Chapter 9 & 10
Oct 15	14	<b>Leopard Complex and overview</b>

		Assignment: Study for Test #3
Oct 17	15	<b>Test #3 –Chapters 4-10</b> Assignment: Read Class Text, Chapter 11
Oct 22	16	<b>Parentage</b> Assignment: Read Class Text, Chapter 12
Oct 24	17	<b>Veterinary Medical Genetics</b> Assignment: Read Class Text, Chapter 12
Oct 29	18	<b>Veterinary Medical Genetics</b> Assignment: Read Class Text, Chapter 13
Oct 31	19	<b>Cytogenetics</b> Assignment: Study for Test #4
Nov 5	20	<b>Test #4: Chapters 11, 12, 13</b> Assignment: Read Class Text, Chapter 14
Nov 7	21	<b>Genetics of Performance</b> Assignment: Read Class Text, Chapter 14
Nov 12	22	<b>Genetics of Performance</b> Assignment: Read Class Text, Chapter 15
Nov 14	23	<b>Pedigrees</b> Assignment: Read Class Text, Chapter 16
Nov 19	24	<b>Mitochondria, Y-chromosome and Epigenetics</b> Assignment: Read Class Text, Chapter 16
Nov 21	25	<b>Mitochondria, Y-chromosome and Epigenetics</b> Assignment: Study for Test #5
Nov 26	26	<b>Review</b>
Nov 28		<b>Thanksgiving Holiday</b>
Dec 3	27	<b>Test #5: Chapters 14, 15, 16</b> Assignment: Read Class Text, Chapter 17
Dec 5	28	<b>Genetic Nature of Breeds</b> Assignment: Read Class Text, Chapter 17
Dec 10	29	<b>Genetic Nature of Breeds</b> Assignment: Read Class Text, Chapter 18

Dec 12      30      **Genetics of Perissodactyla and *Equus***  
Assignment: Study for Final Exam

December 16-20: Finals