



## BIOL 2054 GENETICS

Spring January 14, 2019 - May 11, 2019

<b>Instructor:</b>	Dr. D. Vaden, Ph.D.
<b>Section # and CRN:</b>	P02, 28160 and P62, 26690 or P63, 28294
<b>Office Location:</b>	E.E. O'Banion Science Building, Biology Department, Suite 430AB
<b>Office Phone:</b>	(936) 261-3172
<b>Email Address:</b>	Use My Mail (eCourses email)
<b>Office Hours:</b>	Tues., 11AM-12:50AM, Wed., 10-10:50AM, 1-1:50PM, or by appointment
<b>Mode of Instruction:</b>	Face to Face
<b>Course Location:</b>	E.E. O'Banion Science Building
<b>Class Days &amp; Times:</b>	Lecture - TR, 9:30AM – 10:50AM, E.E. O'Banion Science Building Rm103 P62, Lab - MW, 11:00AM - 12:50AM, E.E. O'Banion Science Building, Rm 407 P63, Lab - MW, 2:00 pm - 3:50PM, E.E. O'Banion Science Building, Rm 407
<b>Catalog Description:</b>	BIOL 2054 Genetics. (2-4) Credit 4 semester hours. Analysis of the structure, function, and transmission of genetic materials. Laboratory fee required. **
<b>Prerequisites:</b>	BIOL 1015, 1025, 1034, or equivalent
<b>Co-requisites:</b>	NA
<b>Required Texts:</b>	<b>REQUIRED SMARTBOOK WITH CONNECT /LEARNSMART:</b> Students are required to purchase Connect with LearnSmart and LearnSmart Prep, a digital teaching and learning environment with an electronic textbook (SmartBook). Connect with LearnSmart and LearnSmart Prep is a web-based assignment and assessment platform that gives students the means to better connect with their coursework, with their instructors, and with the important concepts that they will need to know. Connect with LearnSmart and LearnSmart Prep is the only book required for this course. The LearnSmart, a SmartBook is an adaptive reading experience designed to transform the way students read. It creates a personalized reading experience that focuses on content based on a student's understanding and evaluates students' knowledge in real time to adapt the course textbook.  Connect with LearnSmart and LearnSmart Prep (electronic textbook) Genetics: Analysis and Principles, Robert Brooker, 6th Edition (~\$85.00, 6 months from McGraw Hill or ~ \$120.00 access card from PVAMU bookstore) ISBN: 9781260041057   ISBN10: 1260041069   ISBN13: 9781260041064 Author(s) Robert Brooker Publisher: McGraw-Hill Higher Education
	<b>Section web address:</b> <a href="http://connect.mheducation.com/class/d-vaden-spring-2018-p02">http://connect.mheducation.com/class/d-vaden-spring-2018-p02</a>
	*see eCourses for link to site **Connect with LearnSmart and LearnSmart Prep courtesy access (free access) available for 14 days**
<b>Optional Supplements:</b>	none

**Student Learning Outcomes:**

*Program Learning Outcome # Alignment: Knowledge of #1) the chemical basis of life, #2) the central concepts of Genetics; #3) Cell Biology; #4) Organismal Biology; and #5) scientific communication*

*Core Curriculum Outcome Alignment: Critical Thinking, Communication, Empirical and Quantitative Skills, and Teamwork*

	<b>Upon successful completion of this course, students will be able to:</b>	<b>Program Learning Outcome # Alignment</b>	<b>Core Curriculum Outcome Alignment</b>
<b>1</b>	Define and explain genetic concepts	#1 - #2	Critical Thinking
<b>2</b>	Apply critical thinking skills to scientific inquiry	#1 - #4	Critical Thinking
<b>3</b>	Analyze and interpret empirical and quantitative genetic data	#1 - #4	Empirical and Quantitative Skills
<b>4</b>	Demonstrate the ability to effectively communicate the fundamentals of genetics in a written report	#1 - #4	Communication
<b>5</b>	Demonstrate the ability to engage in productive teamwork	#2, #5	Teamwork

**Major Course Requirements**

**Method of Determining Final Course Grade**

**COURSE EVALUATION METHODS:**

The University's Academic Catalog grading policy is used in this course.

<b>Course Grade Requirement</b>	<b>Value</b>	<b>Total</b>
1) Lecture & Lab Exams (cumulative chapter exams, and 1 post-assessment cumulative final)	50%	50
2) Class assignments: LearnSmart Assignments/ Connect Quizzes/lab exercises / lecture quizzes	45%	45
3) *Lab and lecture performance/participation	5%	5
<b>Total:</b>	<b>100%</b>	<b>100</b>

**Grading Criteria and Conversion:**

A = 90-100; B = 80-89; C = 70-79; D = 60-69; F = Below 60

**Detailed Description of Major Assignments:**

**Assignment Title or Grade Requirement**

**Description**

Lecture & Lab Exams

At least four lecture exams will be conducted during the semester. The dates for each exam will be announced at least one week prior to the administration of the exam. The final lecture exam will be cumulative in terms of genetic topics tested. Some of the content of the other exams may cover chapters that had been taught from the first day of class to the class day immediately before the exam. The average of all lecture exams will constitute seventy percent (50%) of the semester grade. The Department of Biology assessment of student learning and achievement, for accreditation, is measured by student's performance on the final exam (post assessment). The performance on the final exam is very important in determining the knowledge obtained during the semester and often reflect the over-all grade for the semester.

Class assignments

Class assignments that assesses a student's proficiency and knowledge within a specific course will consist of: 1) McGraw Hill LearnSmart Assignments (online interactive, adaptive study tool), 2) McGraw Hill Connect Quizzes, 3) problem solving worksheets (Investigations), 4) case studies (classroom discussions and small group learning), 5) class quizzes, 6) lab exercises and 7) a written report. Unannounced quizzes may be given by the instructor in order to evaluate how well students are learning the most recent genetics concepts taught.

Lab and lecture Performance/participation

The average of all graded class assignments will count for 45% of the total grade. The Lab and lecture performance component (5%) is determined by complying with The Student Laboratory Contract, attendance, use of classroom response systems,

preparation for lab, turning assignments in on time, participation & interaction with lab partner and keeping work station clean.

### **Course Procedures or Additional Instructor Policies**

1. **CLASS ATTENDANCE:** The University Attendance Policy requires students to be present for each scheduled class. Students with or without official excuses for missing class will be tested and evaluated the same as students who attend class. However, students attending class will have the advantage of being taught knowledgeable information which they are expected to know. Students are responsible for materials covered during their absences. Classes will start at the prescribed time and end at the prescribed time. Absences are accumulated beginning with the first day of class. The University catalog provides more detailed information.
2. **MAKE-UP EXAMS:** Students are strongly advised to take all exams at the scheduled time. Plan and schedule your activities so that you can be present to take all exams at the scheduled time. Students with non-valid or non-official excuses for missing an exam will earn a grade of zero (0) for the missed exam. Students may request a make-up exam if an official excuse is provided. However, the instructor will schedule the time and place of the make-up exam which will not interrupt the teaching of the class or delay the complete coverage of the course topics. Students who are scheduled for the make-up exam and miss it will not be provided a second opportunity to take an exam for the original exam that was missed.
3. **CHEATING.** Students caught cheating will receive a grade of F for the course. Students are prohibited from participation in acts of academic dishonesty, including tampering with records or falsifying admissions or other information. Disciplinary action will be taken against any student who alone or with others engages in any act of academic fraud or deceit. The undergraduate catalog provides more detailed information. It is the responsibility of students and faculty members to maintain academic integrity at the University by refusing to participate in or tolerate academic dishonesty.
4. Cellular phones, I-Pods, Palm pilots, CD players, Radios, Cameras, Computers and other sorts of high technology communication instruments are not allowed to be used during any part of lectures and exams. They are instruments of cheating. They must be turned off and locked so that they cannot be seen or used. Students that are caught using these or any other instruments used to cheat, will be charged with cheating and therefore earn a failing grade of zero and F.
5. **PLEASE DO NOT BRING FOOD OR DRINKS INTO THE CLASSROOM.**
6. **BE CERTAIN TO TURN OFF ALL CELL PHONES, IPODS AND LAPTOPS DURING CLASS.**
7. **Students Academic Appeals Process:** Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.
8. **DISABILITY SERVICES:** If you have a disability, please inform me so that I can assist you to get "reasonable accommodation" related to the disability. Students with disabilities who believe they may need adjustment in this class are encouraged to contact the Office of Disabilities Services at (936) 261-3585 as soon as possible. Once you receive a letter of adjustment from the office, please make an appointment with me to discuss adjustments for this class.
9. **CLASSROOM CIVILITY:** Each student is encouraged to help create an environment during class that promotes learning, dignity, and mutual respect for everyone. Students who speak at inappropriate times, sleep in class, display inattention, take frequent breaks, interrupt the class by coming to class late, engage in loud or distracting behaviors, use cell phone in class, use inappropriate language, are verbally abusive, display defiance or disrespect to others, or behave aggressively toward others could be asked to leave the class and subjected to disciplinary action under the Code of Student Rights, Responsibilities and Disciplinary Procedures.

### **Taskstream**

Taskstream is a tool that Prairie View A&M University uses for assessment purposes. One of your assignments may be considered an "artifact," an item of coursework that serves as evidence that course objectives are met. More information will be provided during the semester, but for general information, you can visit Taskstream via the link in eCourses.

**TENTATIVE LECTURE SCHEDULE AND COURSE OUTLINE:**

<b>PART</b>	<b>Chapter</b>	<b>Lecture</b>
PART I INTRODUCTION	1	Overview of Genetics
PART II PATTERNS OF INHERITANCE	2	Mendel's Principles of Heredity
	3	Chromosome Transmission During Cell Division and Sexual Reproduction
	4	Extensions of Mendelian Inheritance
	EXAM 1	
	5	Non-Mendelian Inheritance
	6	Genetic Linkage and Mapping in Eukaryotes
	7	Genetic Transfer and Mapping in Bacteria
	8	Variation in Chromosome Structure and Number
EXAM 2		
PART III MOLECULAR STRUCTURE & REPLICATION OF THE GENETIC MATERIAL	9	Molecular Structure of DNA and RNA
	10	Chromosome Organization and Molecular Structure
	11	DNA Replication
EXAM 3		
PART IV MOLECULAR PROPERTIES OF GENES	12	Gene Transcription and RNA Modification
	13	Translation of mRNA
	14	Gene Regulation in Bacteria
	15	Gene Regulation in Eukaryotes I: Transcriptional and Translational Regulation
	16	Gene Regulation in Eukaryotes II: Epigenetics
	17	Non-coding RNAs
	18	Genetics of Viruses
	19	Gene Mutation and DNA Repair
	20	Recombination, Immunogenetics, and Transposition
	EXAM 4	
EXAM 5 (Post-assessment Exam/Cumulative) BIOL 2054 LECTURE FINAL EXAM, <b>Lab section P62, Thursday, May 2, 10:30am - 12:30pm, room 407</b> <b>Lab section P63, Thursday, May 2, 1:30pm – 3:30pm, room 407</b>		
<b>Chapters Cover in Laboratory</b>		
PART V GENETIC TECHNOLOGIES	21	Molecular Technologies
	22	Biotechnology
	23	Genomics I: Analysis of DNA
	24	Genomics II: Functional Genomics, Proteomics, and Bioinformatics
PART VI GENETIC ANALYSIS OF INDIVIDUALS AND POPULATIONS	25	Medical Genetics and Cancer
	26	Developmental Genetics
	27	Population Genetics
	28	Complex and Quantitative Traits
	29	Evolutionary Genetics

**\*\* PART VI Chapters 21-24 GENETIC TECHNOLOGIES and PART VI GENETIC ANALYSIS OF INDIVIDUALS AND POPULATIONS will be covered during Genetics Laboratory.**

**Student Support and Success**

**John B. Coleman Library**

The library and its partners have as their mission "to provide resources and instructional material in support of the evolving curriculum, as a partner in Prairie View A&M University's mission of teaching, research, and service" and to support the University's core values of "access and quality, diversity, leadership, relevance, and social responsibility" through emphasis on ten key areas of service. It maintains library collections and access both on campus, online, and through local agreements to further the educational goals of students and faculty.

**Center for Academic Support**

The Center for Academic Support (CAS) offers Tutoring via peer tutoring. The services include workshops (i.e., Save My Semester, Recalculate Your Route), seminars (i.e., Tools You Can Use: TI-84), group review sessions (i.e., College Algebra Topic Reviews, GRE Preparation), group study opportunities (i.e., TSIA, HESI, Study Break, Exam Cram), and test-taking strategies (How to take Notes, Study Buddy, 5 Day Study Guide). The Tutoring

Center is a nationally certified tutoring program through the National Tutoring Association. The peer tutors are trained and certified by the coordinator each semester. Location: J.B. Coleman Library

### **COMPASS**

The Center for the Oversight and Management of Personalized Academic Student Success (COMPASS) is designed to help Prairie View students in their second year and beyond navigate towards graduation by providing the following services: Academic Advisement, Targeted Tutorials for Personalized Learning, Campus-Wide Referrals, and Academic & Social Workshops. Location: J.B. Coleman Library

### **Writing Center**

The Writing Center provides student consultants on all aspects of the writing process and a variety of writing assignments. Writing Center consultations assist students in such areas as prewriting, brainstorming, audience awareness, organization, research, and citation. Location: Hilliard Hall 121

## **University Rules and Procedures**

### **Disability statement (See Student Handbook):**

Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

### **Academic misconduct (See Student Handbook):**

You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

### **Forms of academic dishonesty:**

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

### **Nonacademic misconduct (See Student Handbook)**

The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

### **Sexual misconduct (See Student Handbook):**

Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

### **Attendance Policy**

Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

### **Student Academic Appeals Process**

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in

the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

**Disability statement (See Student Handbook):**

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**TECHNICAL CONSIDERATIONS**

**Minimum Recommended Hardware and Software:**

- Intel PC or Laptop with Windows 7; Mac with OS X; Smartphone or iPad/Tablet with Wi-Fi
- High speed Internet access
- 8 GB Memory
- Hard drive with 320 GB storage space
- 15" monitor, 800x600, color or 16 bit
- Sound card w/speakers
- Microphone and recording software
- Keyboard & mouse
- Most current version of Google Chrome, Safari, Internet Explorer or Firefox

**Note:** Be sure to enable Java & pop-ups

**Participants should have a basic proficiency of the following computer skills:**

- Sending and receiving email
- A working knowledge of the Internet
- Proficiency in Microsoft Word (or a program convertible to Word)
- Proficiency in the Acrobat PDF Reader
- Basic knowledge of Windows or Mac O.S.

**Netiquette (online etiquette):**

Students are expected to participate in all discussions and virtual classroom chats as directed. Students are to be respectful and courteous to others on discussions boards. Foul or abusive language will not be tolerated.

**Technical Support:**

Students should go to <https://mypassword.pvamu.edu/> if they have password issues. The page will provide instructions for resetting passwords and contact information if login issues persist. For other technical questions regarding eCourses, call the Office of Distance Learning at 936-261-3283

**Communication Expectations and Standards:**

Emails or discussion postings will receive a response from the instructor, usually in less than 48 hours. Urgent emails should be marked as such. Check regularly for responses.

**Discussion Requirement:**

Online courses often require minimal to no face-to-face meetings. However, conversations about the readings, lectures, materials, and other aspects of the course can take place in a seminar fashion. This will be accomplished by the use of the discussion board. The exact use of discussion will be determined by the instructor.

**It is strongly suggested** that students type their discussion postings in a word processing application and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, it should be copied and pasted to the discussion board.

## Academic Calendar Spring 2019 – Full Term

The Prairie View A&M Academic Calendar is subject to change

Jan 10 - Jan 11 Thurs through Fri	Regular Registration Period	Mar 27 Wed	Founders Day/Honors Convocation
Jan 14 Mon	First Class Day	Mar 27 Wed	Last day to apply for spring graduation (ceremony participation)
Jan 14 Mon	Tuition payment deadline is 5:00 p.m. for all students who registered for the spring semester	Mar 28 - Apr 30 Thurs through Tues	Apply for degree conferral only for spring graduation (no ceremony participation or name listed in program)
Jan 14 - Jan 16 Mon through Wed	Late registration for the spring semester for all students who have not yet registered. To complete registration, students must pay by 5:00 p.m. on Wednesday, February 6.	Mar 29 Fri	Last day for withdrawal from course(s) with record ("W")
Jan 14 - Jan 18 Mon through Fri	Add/Drop for all students for the spring semester. Tuition payment for all students who add/drop for spring must pay by 5:00 p.m. on Wednesday, February 6.	Apr 08 - Apr 12 Mon through Fri	Priority registration for continuing students for summer and fall semesters <a href="#">Priority Registration Schedule</a>
Jan 21 Mon	Dr. Martin Luther King Day (University Closed)	Apr 15 - May 24 Mon through Fri	Pre-registration for all students for the summer and fall semester
Jan 22 Tues	Class resumes	Apr 19 Fri	Good Friday (Student Holiday)
Jan 30 Wed	12th Class Day (Census Date)	Apr 29 - Apr 30 Mon through Tues	Course Review Days (Classes must convene and instructors will prepare students for final exams)
Jan 30 Wed	Last day to drop/withdraw from course(s) without academic record. A financial record will still exist.	Apr 30 Tues	Last day to withdraw from the university with record
Jan 31 - Mar 29 Thurs through Fri	Withdrawal from course(s) with record ("W")	Apr 30 Tues	Last day to apply for degree conferral only for spring graduation (no ceremony participation or name listed in program)
Feb 06 Wed	Tuition payment deadline is 5:00 p.m. for all students who late registered and add/drop for spring semester	Apr 30 Tues	Last day to submit application for Tuition Rebate for spring graduation undergraduate candidates
Feb 11 Mon	20th class day	Apr 30 Tues	Last Class Day
Feb 12 - Apr 30 Tues through Tues	Submit application for Tuition Rebate for spring graduation undergraduate candidates	May 01 - May 07 Wed through Tues	Final Examinations
Mar 07 - Mar 09 Thurs through Sat	Mid-semester examination	May 09 Thurs	Final grades due for graduation candidates by Noon
Mar 11 - Mar 16 Mon through Sat	Spring Break (University Closed 3/15/2019)	May 11 Sat	Spring Commencement
Mar 18 Mon	Class resumes	May 14 Tues	Final grades due for all other students by 11.59 p.m.
Mar 19 Tues	60% of Term		
Mar 19 Tues	Mid-semester grades due by 11:59 p.m.		

## FINAL EXAM SCHEDULE SPRING 2019 SEMESTER EXAM WEEK

TIMES	Wednesday May 1	Thursday May 2	Friday May 3	Saturday May 4	Monday May 6	Tuesday May 7
8:00am–10:00am	M-W-F, 8:00 am	TU-THUR, 8:00 am	M-W-F, 9:00 am	SAT, 8:00 a m	M-W-F, 10:00 am	TU-THUR, 9:30 am
10:30am12:30pm	M-W-F, 11:00 am	TU-THUR, 11:00 am	M-W-F, 12:00 pm	SAT, 11:00 am	M-W-F, 1:00 pm	TU-THUR, 12:30 pm
1:30pm–3:30pm	M-W-F , 2:00 pm	TU-THUR, 2:00 pm	M-W-F , 3:00 pm	SAT, 2:00 pm	M-W-F, 4:00 pm	TU-THUR, 3:30 pm
4:00pm–6:00pm	M-W-F , 5:00 pm	TU-THUR , 5:00 pm	M-W-F , 6:00 pm	COMMON EXAM	COMMON EXAM	COMMON EXAM
6:30pm–8:30pm	COMMON EXAM	COMMON EXAM	COMMON EXAM	COMMON EXAM	COMMON EXAM	COMMON EXAM

**NOTES:**

1. All NROTC and AROTC examinations will be scheduled by the professors of NROTC and AROTC during this final exam period.
2. All HEALTH AND HUMAN PERFORMANCE practice examinations will be scheduled by the head of the Department of Health and Human Performance during this final exam period.
3. Instructors should contact the Office of the Registrar as soon as possible at the beginning of the semester to schedule rooms for common exams.
4. Final Exam schedules for 8-week sessions will follow the Academic Calendar.