

GENE 315 - Molecular Genetics
Fall 2009

- Lecture:** 8:55 - 10:10am TU TH Jett Hall, Rm 103
- Instructor:** Dr. Ian Ray Phone: 646-3819
Rm 342N, Skeen Hall Email: iaray@nmsu.edu
- Office Hours:** M, TH 4:30 to 6:00pm or by appointment.
- Textbook:** Genetics: Analysis & Principles (3rd edition), by R.J. Brooker, 2009. One copy on reserve in Zuhl library.
- Course Goals:** To provide detailed coverage of the central concepts of genetics from a molecular perspective. Topics to be covered include DNA structure/function, replication/repair, transcription, translation, gene regulation, DNA recombination at the molecular level, genomics and biotechnology.
- Grading:**
- | | |
|------------|--------------|
| Exam I | 20% |
| Exam II | 20% |
| Exam III | 20% |
| Exam IV | 20% |
| 4 Quizzes* | 5% each =20% |
- *A 10 to 15 minute quiz will be given in-class one week prior to each exam. Each quiz will be over the material covered since the last exam. Exams will essentially be cumulative in nature because subjects covered later in the course will build upon previous course concepts.
- Problem Sets, Study Questions, Quizzes, & Exams** You are strongly encouraged to utilize the problem sets and insights resources (i.e. Solved Problems, Conceptual Questions, and Experimental Questions) provided at the end of each chapter. These resources will strengthen your understanding of the course material, and consequently, benefit your performance on the quizzes and exams. Answers to ALL the problem sets and questions are provided on the McGraw-Hill Website. These answers will also be posted on a bulletin board outside of Skeen Hall Laboratory W121 (first floor west wing of Skeen Hall). Quiz and exam content will consist primarily of questions that are similar in nature to those provided at the end of each chapter. You will also be responsible for understanding any supplementary material covered in class.
- Class policies:** Missed exams may be taken within one week from the original exam date provided a valid excuse is presented. You must contact the instructor **BEFORE** the exam is missed (contact me by phone, voicemail or email) and present valid documentation of why you missed the exam (e.g. illness requiring doctors care or school-related activity). You will receive a zero for any missed exams.
- Academic misconduct:** Academic charges will be pursued for anybody caught in the act of cheating during an exam, which could lead to expulsion from the university. Cheating which includes plagiarism, copying or presenting other's work as your own ideas, on class/lab assignments and exams will be addressed as discussed in the Undergraduate Catalog.

Students with disabilities: If you have (or believe you have) a disability and would benefit from classroom accommodation(s), please contact the Services for Students with Disabilities (SSD) Office located at Corbett Center, Room 244 (phone: 646-6840). If you have a condition which may affect your ability to exit safely from the premises in an emergency, or which may cause an emergency during class, you are encouraged to discuss this in confidence with the instructor and/or the director of the Disabled Student Programs. If you have questions about the Americans with Disabilities Act (ADA), call the ADA coordinator at 646-7795.

COURSE SCHEDULE
Molecular Genetics – GENE 315
Fall 2009

| <u>DATE</u> | <u>LECTURE TOPIC</u> | <u>AFFILIATED READING IN TEXT</u> |
|-------------|---|-----------------------------------|
| August 20 | Overview of Genetics | Chapter 1 |
| | 25 Molecular Structure of DNA/RNA | Chapter 9 |
| | 27 Chromosome Organization and Structure | Chapter 10 |
| September | 1 Chromosome Organization and Structure | Chapter 10 |
| | 3 DNA Replication | Chapter 11 |
| | 7 Labor Day Holiday | |
| | 8 DNA Replication | Chapter 11 |
| | 10 Gene Transcription | Chapter 12 |
| Λ | 15 EXAM I (thru 9/8 lecture) | |
| | 17 Gene Transcription | Chapter 12 |
| | 22 Translation | Chapter 13 |
| | 24 Translation | Chapter 13 |
| | 29 Gene Regulation in Prokaryotes | Chapter 14 |
| October | 1 Gene Regulation in Eukaryotes | Chapter 15 |
| | 6 Gene Regulation in Eukaryotes | Chapter 15 |
| | 8 Gene Mutation and DNA Repair | Chapter 16 |
| Λ | 13 EXAM II (thru 10/6 lecture) | |
| | 14 Last day to drop with a "W" | |
| | 15 Gene Mutation and DNA Repair | Chapter 16 |
| | 20 Recombination and Transposition | Chapter 17 |
| | 22 Recombination and Transposition | Chapter 17 |
| | 27 Recombinant DNA Technology | Chapter 18 |
| | 29 Recombinant DNA Technology | Chapter 18 |
| November | 3 Biotechnology | Chapter 19 |
| | 5 Genomics I: DNA Analysis | Chapter 20 |
| Λ | 10 EXAM III (thru 11/3 lecture) | |
| | 12 Genomics I: DNA Analysis | Chapter 20 |
| | 17 Genomics II: Functional Genomics, Proteomics | Chapter 21 |
| | 19 Medical Genetics | Chapter 22 |
| (| 23-27 Thanksgiving Holiday | |
| December | 1 Medical Genetics | Chapter 22 |
| | 3 Developmental Genetics | Chapter 23 |
| Λ | 10 Exam IV (8:00AM to 10:00 PM Jett Hall Rm 103) | |