THE UNIVERSITY OF TEXAS AT SAN ANTONIO

FALL 2007 SCHEDULE-- GENETICS (BIO 2313) SECTION 002

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MON. & WED. (2:00 P.M. to 3:15 P. M.)
COURSE ROOM: SCI BLDG RM. 2.02.06

DATES	LECTURES AND TOPICS	ASSIGNMENTS
AUG. 22	Introduction, Overview of Course and Concepts Biosocial Genetics	Chapter 1 & Assigned Literature
AUG. 27 & AUG. 29	Cell Structure, Cellular Division, and Chromosomes	Chapter 2
SEPT. 03	**LABOR DAY**	
SEPT. 05, 10 & SEPT. 12	Molecular Genetics, Chemical Nature & Organization of Genes	Chapters 10 & 11
SEPT. 17, 19 & 24	Gene Function, Protein Synthesis and Gene Regulation	Chapters 12 - 15 & 16 [Part]
SEPT. 24	REVIEW SESSIONS AS SCHEDULED	
SEPTEMBER 26	**FIRST HOUR EXAM *[20 %]***	**CHAPTERS 1 & 2, 10-15 & 16**
OCTOBER 01	Recombinant DNA and Applications	Chapter 18, 19 & Assigned Literature
OCT.03, 08, & 10	Mendelian / Transmission Genetics, Chi Square Analysis & Probabilities	Chapter 3 & 6
OCTOBER 15	Sex-Linked Genes & Sex Determination	Chapter 4
OCT. 17, 22 & 24	Multiple Alleles, Dominance Relations, Lethals, Environmental Effects & Gene Interactions	Chapter 5
OCTOBER 24	REVIEW SESSIONS AS SCHEDULED	
OCTOBER 29	**SECOND HOUR EXAM *[20 %]***	**CHAPTERS 3 - 6, 18 & 19**

DATES	LECTURES AND TOPICS	ASSIGNMENTS
OCT. 31 & NOV 05	Linkage, Recombination and Gene Mapping	Chapter 7
NOV. 07,12 & 14	Multiple Genes and Quantitative Analysis	Chapter 22 & Assigned Problems
NOVEMBER 14	REVIEW SESSIONS AS SCHEDULED	
NOVEMBER 19	**THIRD HOUR EXAM *[20 %]***	**CHAPTERS 7, 22 & Assigned Problems**
NOVEMBER 22-25	**THANKSGIVING HOLIDAYS**	**R & R**
NOV. 21 & 26	Chromosomal and Genic Mutations	Chapters 9 & 17
NOV. 28 & DEC. 03, 05	Principles and Perspectives in Population Genetics & REVIEW	Chapter 23 & Problems
DECEMBER 07 *[FRIDAY]*	**FINAL EXAM *[40 %]* [7:30 A.M. to 10:00 A..M.]**	**COMPREHENSIVE**

TEXT: PIERCE, B.A. 2005. **GENETICS : A Conceptual Approach**. 2nd Edition. W.H. Freeman and Company, New York, New York. 720 p. + Appendix

REFERENCES:

1. Cummings, M. R. 2006. Human Heredity: Principles and Issues. 7th Edition Thomson Brooks/Cole, Belmont, CA 457 p.
2. Hartl, D.L and E.W. Jones. 1998. Genetics: Principles and Analysis. 4th Edition. Jones and Bartlett Publishers. Boston, MA. 840 p.
3. **Klug, W.S. , M.R. Cummings and C.A. Spencer. 2007. Essentials of Genetics. 6th Edition. Pearson-Prentice Hall Inc., Upper Saddle River, NJ. 553 p. + Appendix**
4. Lewis, Ricki. 2007. Human Genetics: Concepts & Applications. 7th Edition. McGraw-Hill Higher Education, New York, New York. 448 p. + Appendix
5. Russell, P.J. 2002. I Genetics. Benjamin Cummings. San Francisco, CA 828 p.
6. Stein, G. J. 1989. The New Human Genetics. Wm. C. Brown Publishers, Dubuque, Iowa. 499 p.

ADDITIONAL READINGS: Recent or Current Publications

EXAMS: **MULTIPLE CHOICE AND ESSAY**, INCLUDING PROBLEMS & SHORT ANSWERS OR DISCUSSION;

3-HOUR EXAMS (at 20% Per Exam) Equals **60 %;**
FINAL EXAM ..... Equals **40 %.**

GRADING: 90 % or above required for A
80 % to 89 % required for B
70 % to 79 % required for C
60 % to 69 % required for D

SUMMARY OF COURSE :

Lectures and Topics will include basic principles as well as recent developments in modern and experimental genetics. Also, the course will emphasize the following major topics:

- **OVERVIEW : Including, Applied and Biosocial Genetics; the Human Genome; Concepts of Genetic Engineering**
- **CELL DIVISION AND CHROMOSOMES:**
  Cell Structure
  Cell Cycle, Growth, Mitosis and Meiosis
- **MOLECULAR GENETICS: Chemical Nature, Organization, Function of Genes; Gene Technology (Recombinant DNA); Basics on Regulation**
- **TRANSMISSION GENETICS:**
  Simple vs Complex Patterns
  MODIFICATIONS: Sex Linkage; Dominance Relations; Multiple Alleles; Lethals; Environment and Gene Interactions
- **MULTIPLE GENES AND QUANTITATIVE GENETICS**
- **STATISTICAL METHODS: Analyses of Patterns of Inheritance and Multiple Genes**
  Chi Square (X^2)
  Central Tendency and Variation
- **LINKAGE AND RECOMBINATION**
- **MUTATIONS : Chromosomal aberrations and Point Mutations**
- **GENES IN POPULATIONS:**
  Gene Frequency
  Genotype Frequency
  Forces of Change