Western Kentucky University
Department of Biology
1906 College Heights Boulevard
(270) 745- 3696

INSTRUCTOR: Dr. Nancy A. Rice

LECTURE: Online

OFFICE HOURS: By appointment

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COURSE DESCRIPTION: This course will be a discussion of the biological and molecular features of oncogenesis and clinical cancer focusing on the specific molecular events underlying carcinogenesis, metastasis and angiogenesis. Case study learning will be integrated into the course to engage students in understanding the societal implications of cancer.

TEXTBOOK: *Molecular Biology of Cancer*, 2nd edition by F. MacDonald, C.H.J. Ford and A.G. Casson and additional readings as posted on Blackboard™. ***This textbook can be purchased online from amazon.com or the WKU Bookstore.***

SPECIFIC ACCOMMODATIONS: Any student who requires accommodations because of a physical, learning, psychiatric, vision or hearing disability should contact the Office for Student Disability Services (745-5004) at the beginning of the semester. If you so choose, after documenting your disability with Student Disability Services, please arrange to see me during office hours to discuss your accommodations.

CREDIT HOURS: 3 credit hour

PREREQUISITES: Biology 319 and/or Biology 411 (preferred)

ASSIGNMENTS: Participation in two online discussions will be required of all students. The first discussion will be over a research paper that relates to a topic currently being discussed in class and the second will be over the case study "Genetic Testing and Breast Cancer: Is a Little Knowledge a Dangerous Thing?"

Additionally, ***Graduate students only*** will required to submit a paper supporting their own position (3 pages max, typed, double-space). Three outside references will be required to support the position. All papers should be submitted to the instructor before or on the due date by uploading their work in BlackBoard under the "Assignments" tab. Do not email assignments please.

Assignment instructions will be posted on the discussion board. Due dates for the discussion boards are given below.

QUIZZES: A 5 point quiz will be posted online for most lecture topics. All quizzes must be completed by **Sunday at 12 noon** of the week that the lecture material is to be covered, *i.e.* quizzes 1-2= week 1; 3-5 = week 2, etc. Quizzes will be posted by Monday morning the week they are due and an announcement will be posted indicating that you have one or more quizzes that week.

EXAMS: Two exams will be given ***online*** for the course – one midterm and one final exam. These exams will be taken online through Blackboard at an approved testing center. All exams will be proctored and can be scheduled through WKU's Division of Extended Learning and Outreach (DELO) Testing Center http://www.wku.edu/testing/Where%20taking%20exam.htm. If you do not live in Bowling Green, there are many approved testing sites throughout Kentucky and DELO will be happy to work with you to ensure you are able to take your exam (see above link). Exams are to be completed in **1 hour** following initiation of the exam except for the final, in which you will have two hours. You may take the exam whatever time of day you wish, however all exams are to be completed on the scheduled exam day as indicated below. Fair game for exams is material from lecture notes, handouts, anything in the assigned reading from the textbook not covered during lecture, and outside reading as assigned. All exams will be closed book and will include a variety of question formats, *i.e.* multiple choice, fill-in-the-blank, identify, diagram, and short answer or essay. Tests will be used to not only evaluate the amount of knowledge you have gained but also to test your ability to apply your new found information and skills. You are expected use proper English grammar; if your answer is unclear or incomplete, you will not receive full credit.

GRADING AND EXAMS: Student grades will determined by the total number of points earned on two exams (midterm and final), online lecture quizzes, a paper project, and participation in class discussions as follows:

Midterm exam	100 points
Quizzes	50 points
Position Paper (*Graduate Students only*)	(50 points)
Course Discussion Board (case + papers)	50 points
Final Exam	100 points
Total	**300 points - UG** **350 points - Grad**

Final grades will be assigned based upon the following scale:

90-100%	A	Outstanding
80-89%	B	Above average
70-79%	C	Average
60-69%	D	Below Average
Below 60%	F	Failing

COURSE OUTLINE:

Date	**Topic**	**Text Reading**
Week 1	**Course Introduction**	
Lecture 1	Cancer epidemiology and classification	N/A

Lecture 2	Cancer: A genetic disorder Cell-cycle review Apoptosis review	Chap.1
Lecture 3	Neoplasia and Classification of Neoplasia-Associated Genes	Handout
	Mutational Mechanisms	Handout
	Journal Paper Discussion Board #1 must be completed by 8 am, Sunday July 10	
Week 2	**Malignant Transformation**	
Lecture 4	Tumor Suppressor Genes Oncogenes/ Signal Transduction	Chap. 3.1 – 3.6 Chap 2.2 – 2.3
Lecture 5	Viral Carcinogenesis	Chap 2.1
	Growth and Spread of Cancer	
Lecture 6	Metastasis / Angiogenesis Cancer Warrior - Video	Handout
	Midterm Exam (Covers material from L1-L6) ***Must be taken anytime between July 13- July 16***	
Week 3	**Specific Malignancies**	
Lecture 7	Molec Abnormalities in Colon and Rectal Cancer	Chap. 7
Lecture 8	Molecular Basis of Breast Cancer	Chap. 9
Lecture 9	Chronic Myleoid Leukemia /Gleevec (*Druker Lecture – iBioseminars)*	Chap 11
	Breast Cancer Case Study Online Discussion Board #2 must be completed by 8 am, Sunday July 24	
	Position Paper Due by Saturday, July 23 (Grad Students only!)	
Week 4	**Molecular Basis of Cancer Therapy**	
Lecture 10	Various therapies and the problem of natural and acquired resistance to chemotherapeutic agents	Handout

Lecture 11	Gene Therapy	Chap 13.7
Lecture 12	Nutrition and Cancer	

Final Exam must be taken between July 28 – August 1.