A. COURSE INFORMATION

Course number/section: BIMS 4311
Instructional method: 25-49% online
Class meeting time: T: 4:20 pm – 6:50 pm
Class location: Lecture: OCNR 115
Course Website: bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Xavier F. Gonzales, PhD, MSPH
Office location: Engineering 310C
Office hours: T: 10:00 am-12:30pm & R: 3:30pm-6:00pm
Telephone: 361-825-3824
E-mail: Xavier.Gonzales@tamucc.edu
Appointments: email me to set up appointments
Email Responses: Only expect responses M-F from 10am-4pm.

C. COURSE DESCRIPTION

Catalog Course Description
This course is a study of the profile of cancer cells, and the various causes of human cancers. Contribution of heredity, environmental factors, and infectious agents to oncogenesis will be studied. Cancer screening, diagnosis, and treatment will be discussed. Various types of cancer will be presented. Research papers on the origin and treatment of these cancer types will be discussed.

Extended Course Description
This course will provide you with a solid foundation in cancer biology. We will strictly follow the required text by Weinberg (The Biology of Cancer). In addition to the text, we will be reviewing recent scientific journals that help supplement the text. Students will learn to evaluate primary journals in cancer biology and present their findings in a group context.

D. PREREQUISITES AND COREQUISITES

None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required

Required Reading
Much of the lecture will be derived from assigned published manuscripts and the recommended text. Each of the papers that you will need for this class will be available for you to print from Blackboard. Be sure that you print the needed paper(s) and read them prior to the lecture for which it was assigned. Papers will be over recent primary journals. You must bring a copy of these papers to class. Assignments will be derived from these papers and the lecture material.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Differentiate a cancer cell from a normal cell
2. Summarize the ways in which cancers differ
3. Describe the invasion and metastasis process
4. Identify the causes of various cancers
5. Explain how infectious agents cause cancer
6. Summarize the role of oncogenes in cancer
7. Identify certain hereditary risk factors
8. Evaluate cancer diagnosis and treatment procedures

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Learner-Centered Teaching: Collaborative work, control of content selection, personal reflection, learning skill demonstration

H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>60</td>
</tr>
<tr>
<td>Group Journal Reading Reports</td>
<td>30</td>
</tr>
<tr>
<td>Group Presentation w/Reading Report</td>
<td>10</td>
</tr>
</tbody>
</table>
Grading scale: A>90%  B=80-89.9%  C=70-79.9%  D=60-69%  F<60%

Nature of Assignments:

Team Learning: We will use a team learning approach in this class. Permanent groups will be established at the start of the course. Research examining team learning assignments show that the group score is HIGHER than individual scores and that students understand concepts much better as a result of discussing questions in groups. Sometimes each group member will submit answers individually and sometimes groups will submit group consensus answers to questions. We will use the team learning approach on assignments and lecture exams as described below.

Quizzes: will be comprised mainly of multiple choice questions. Some may be setup as matching or fill-in the blank. Problems and/or essay questions may appear on the exams. Most questions, including multiple choice questions typically require analysis and interpretation of data or experimental design to assess critical thinking skills.

READING REPORTS

Part 1
1. Provide the title, author(s), date and source of each reading.
2. Indicate the senior author's affiliation (e.g. Department of Microbiology and Molecular Genetics, Michigan State University).
3. Observation that led to research (look in abstract and introduction)
   a. Describe 2–3 observations.
4. Question (try rewording the title)
   a. Identify the model organism/system.
   b. State why the model is an appropriate choice.
   c. State why the question is important (what did the authors hope to learn about the field?).
5. Hypotheses (usually not stated but implied in abstract or introduction; look for phrases like “this research shows…”)
   a. Explain why these hypotheses make sense based on current knowledge (introduction).
6. Experiment (look at the figures to determine what they did)
   a. Choose 2–3 key figures that directly address the hypotheses.
   b. Restate the model organism/system (figure legend).
   c. Describe general experimental design; what was measured/compared and how?
   d. Describe the methods and controls (draw a flow diagram on the board when presenting).
   e. Explain why the choice of controls was appropriate.

Part 2.
7. Results (look at the figures first)
   a. Explain figures clearly; restate what is being compared to what for each one.
   b. Look for trends; e.g., What is increased over what?
c. Identify the controls and how they validate the trends.
d. Look for statistical analyses (figure legend or results) that validate the data.

8. Conclusion (based on the data, not on the discussion)
a. Does the data support the hypotheses?
b. Are there other possible explanations for the data?
c. Is the data convincing (stats)?
d. How could the experiment be improved?
e. Why is the data interesting; how does it contribute to our understanding of the
field?

Preferred methods of scholarly citations  (Format from Microbiology
(2007). Differential effects of epinephrine, norepinephrine, and indole on
Escherichia coli O157:H7 chemotaxis, colonization, and gene expression. Infect
Immun 75, 4597-4607.

Each group will develop a PowerPoint presentation and a Reading Report
over a Primary Research Journal.

Rubric--Power Point Presentations
Peer Reviewer Name: __________________________

Reviewers: Please total the points and place at the listed spot at the end of the rubric.

Group Topic: ______________________________

Directions: Score as follows: 0= Missing 1= Poor 1.5= Suboptimal 2= Fair 3= Good
4= Very Good 4.5= Excellent 5= Flawless

Format
1. Students have slides with consistent format, background, and color scheme _____
2. Narrative slides are legible and do not have too many words/facts on a single slide ______
3. Narrative slides contain tables, figures, and graphs that help to tell the story ______
4. Graphs/tables are clear, concise and accurate with correctly-labeled axes, labels ____
5. Order of presentation tells a clear, logical story of the information presented. ____

Content
1. Students had sufficient knowledge about area of presentation. ______
2. Students understood area well enough to explain content. ______
3. Students presented scientific content in a coherent fashion. ______
4. Students cited/acknowledged work done by others. ______
5. Students integrated references into topic. ______

Oral Presentation of Power Point Presentation
1. Presenters spoke in an adequate amount of time to allow a clear understanding. _____
2. Presenters gave presentation in logical format ______
3. Presenters clearly articulated major points of the work.____
4. Presenters gave a talk that was concise in describing work presented. _____
5. Presenters gave a talk that was relatively free of grammatical errors. _____
6. Presenters adequately handled questions at the end of the presentation. _____
7. Presenters spoke without many pauses, giggles, “uhhs,” “you knows,” and “likes.” _____
8. Presenters exhibited professionalism in making presentation. (Not strict on Attire) _____
9. Presenters gestured to words/graphics.____
10. Presenters talked to audience, not to wall, slides, or inanimate objects. _____

Peer Reviewer Total Points:____
### I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture Topic</th>
<th>Reading</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/28</td>
<td>Introduction</td>
<td></td>
<td>TBD</td>
</tr>
<tr>
<td>09/04</td>
<td>Cancer Genetics I</td>
<td></td>
<td></td>
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<tr>
<td>09/11</td>
<td>Cancer Genetics II</td>
<td></td>
<td>TBD</td>
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<tr>
<td>09/18</td>
<td>Nature of Cancer I</td>
<td>Reading Report I</td>
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<tr>
<td>09/25</td>
<td>Nature of Cancer II</td>
<td></td>
<td>TBD</td>
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<tr>
<td>10/02</td>
<td>Tumor Virus I</td>
<td></td>
<td></td>
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<tr>
<td>10/09</td>
<td>Tumor Virus II</td>
<td>Reading Report II</td>
<td>TBD</td>
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<tr>
<td>10/16</td>
<td>Cellular Oncogenes I</td>
<td></td>
<td></td>
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<tr>
<td>10/23</td>
<td>Cellular Oncogenes II</td>
<td></td>
<td>TBD</td>
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<tr>
<td>10/30</td>
<td>Growth Factors &amp; Receptors I</td>
<td>Reading Report III</td>
<td></td>
</tr>
<tr>
<td>11/06</td>
<td>Growth Factors &amp; Receptors II</td>
<td></td>
<td>TBD</td>
</tr>
<tr>
<td>11/13</td>
<td>Cellular Signaling I</td>
<td></td>
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<tr>
<td>11/20</td>
<td>Cellular Signaling II</td>
<td>Reading Report IV</td>
<td></td>
</tr>
<tr>
<td>11/27</td>
<td>Group Presentations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/04</td>
<td>Group Presentations</td>
<td></td>
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<tr>
<td>12/06</td>
<td>Reading Day</td>
<td></td>
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<tr>
<td>12/11</td>
<td>Final</td>
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</table>

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor in Blackboard announcements. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.
J. COURSE POLICIES

Emails
I am happy to communicate with you through emails but I do expect you to do so in a professional manner. Emails are not text messages, therefore, do not right them in that style. I expect an appropriate salutation followed by a brief explanation of the purpose of your email. I would prefer that you ask everything at once and it would be best to put all your questions in bullets to allow me to answer behind the question. Further, I do not answer emails on the weekend. If you sent your email during professional working hours (M-R: 9am-5pm) and it did not get answered after 24hrs it was more than likely lost in all my emails. Please resend the email.

Attendance/Tardiness
Attendance: Students are expected to attend every scheduled class. It is the responsibility of the student to obtain any material missed during an absence from his/her classmates. Tardiness: Students may enter when late but be respectful of your peers and do not disrupt the class as you enter.

Late Work and Make-up Quizzes
No late work will be accepted. One quiz can be dropped. It is your responsibility to review the syllabus for when items are due. It is also your responsibility to get it turned in through the appropriate outlet on the designated day.

Extra Credit
Missed extra credit opportunities--Instructor is not obligated to give make-up assignments for extra credit opportunities, whether excused or unexcused.

Cell Phone Use
Lecture: Students are not allowed to use cell phones in class. Students will be asked to leave the room if found using cell phones in class. If it is urgent for you to use your phone feel free to exit the room to utilize your phone.

Laptop Use
Lecture: Students may utilize their laptops as long as it does not disrupt others in class.

Food in Class
Lecture: Students may eat food as long as it does not disrupt others in class. It is the student’s responsibility to clean up after themselves. If you fail to do so, you will no longer be allowed to have food in class.

Missed Quizzes
No make-up quizzes will be given; one quiz can be dropped.

Participation
Lecture: Students are required to participate in all group activities. Peer evaluations will be given with each activity to determine your final assessment.
BlackBoard and Other Electronic Resources:
Students are responsible for visiting the course BlackBoard site regularly. Updates to lecture outlines or study guides and other information, such as homework assignments, will be available on this site.

If you have never used BlackBoard before, click on Island Online on the homepage, choose BlackBoard under “Island Online Login” and then on “I am a new user” and follow the instructions. If you have any problems logging into BlackBoard, please call the Online Help Desk at x2825 (or 825-2825 from off-campus or 1-866-353-2491 for long distance).

K. COLLEGE AND UNIVERSITY POLICIES

• Academic Integrity (University)
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

• Classroom/Professional Behavior
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

• Statement of Civility
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

• Deadline for Dropping a Course with a Grade of W (University)
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult
with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course.
Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

L. OTHER INFORMATION

- Academic Advising
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.