IMMUNOLOGY: BIMS 4406/BIOL 4406
Department of Life Sciences
Spring 2016 v3

A. COURSE INFORMATION

Course number/section: BIMS 4406.001/BIOL 4406.001
Class meeting time: TR 12:30-1:45 (Lecture)
Class location: EN 106 Lecture/ EN 301 Labs
Course Website: http://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Gregory W. Buck, Ph.D., Associate Professor
Office location: Center for the Sciences 251
Office hours: MW 10:00-11:15; TR 2:30-3:45
Telephone: (361) 825-3717
e-mail: Gregory.Buck@tamucc.edu
Appointments: Preferred method is by e-mail

C. COURSE DESCRIPTION

Catalog Course Description
“An overview of immunology with emphasis on current knowledge of the immune system. Detailed examination of the specific cells, cytokines, antibodies, and molecules that comprise the immune system. Laboratory exercises demonstrate the basic principles and techniques used in immunologic studies.”

Extended Course Description
This course provides an overview of immunology, the branch of biology that describes how organisms recognize, attack and destroy foreign invaders, and how the organism distinguishes between self and non-self. This course emphasizes the specific components that comprise both innate and adaptive immunity, and the interactions between both branches. The laboratory section is designed to demonstrate some of the basic principles involved in immunology. This course is MANDATORY for students doing Clinical Laboratory Science; it is useful for students wishing to do graduate or professional school. Please note that if you take this course in medical, dental, veterinary or physician assistant programs, you will NOT take it in a 14 week semester, but within 1-3 weeks, it will be more detailed, and not always well-taught. Persons taking the course in graduate school will focus on primary literature, and you will need to teach yourself basic immunology covered in this course. Please note that immunology changes very rapidly, even within a calendar year.

D. PREREQUISITES AND COREQUISITES

Prerequisites
Biol 2421 (Microbiology) mandatory; BIOL 3410 (Cell Biol.) or 3345 (Cell Physiology)
recommended.

**Co-requisites**
SMTE 0092 is a co-requisite for the laboratory section of the course.

E. **REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES**
A textbook is required! You may choose among these recommended options—you only need to have one of these texts:


**Supplies:** Lab coats, lab notebooks, and safety goggles.

**Citation format:** Please use Council of Science Editors format. A useful link on this format is available at this URL: [http://writing.wisc.edu/Handbook/DocCSE.html](http://writing.wisc.edu/Handbook/DocCSE.html)

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

1. Compare and contrast innate versus adaptive immunity;
2. Assess the role of mononuclear phagocyte in immunity and inflammation;
3. Describe the three branches of complement and describe the roles of their components in immunity and inflammation;
4. Summarize antigen processing and the role of the major histocompatibility complex in immunity;
5. Evaluate the roles of cytokines and other soluble factors in immunity;
6. Describe the roles of cells and soluble factors in the regulation of immune responses;
7. Compare and contrast the types of hypersensitivity reactions;
8. Describe genetic basis of diversity in antigen recognition by B- and T-cells
9. List scientists who have made substantial contributions to immunology.
G. INSTRUCTIONAL METHODS AND ACTIVITIES

My instrumental methods include lecturing but also active learning strategies (Socratic Method, “flipping,” problem-based learning, peer instruction, cooperative learning), and to question you, including sending you to the board, but you have plenty of “lifelines”!

H. MAJOR COURSE REQUIREMENTS AND GRADING

Three written exams will mostly consist of multiple-choice (Type K), but may also include a mixture of these plus short answer, essay, multiple choice, multiple-multiple matching, descriptive T/F.

Quizzes will be given at the beginning of class—there are no make-ups for the quizzes. Quiz points can be made up by doing any assigned extra credit.

Lecture Total = 600 pts
Attendance = 50 pts
Quizzes (5 or 10 pts each) = 50 pts No make-ups
3 class exams @ 100 pts each = 300 pts
Cumulative final exam = 200 pts
Extra credit assignments ~40 pts.—To be announced
(given at prerogative of instructor)
Lecture is 66.7% of total grade

Lab Total = 300 pts
Quizzes (5 or 10 pts each) = 50 pts No make-ups for quizzes
Lab Practical Exam = 50 pts
Lab Worksheets (10 pts each) = 100 pts
Oral Lab presentation = 100 pts
Lab is 33.3% of total grade

Grading scale: A > 90%  B = 80-89.9%  C = 70-79.9%  D = 60-69%  F < 60%

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
<tr>
<td>Exams</td>
<td>55.5</td>
</tr>
<tr>
<td>Quizzes (lecture &amp; lab)</td>
<td>11.1</td>
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<tr>
<td>Homework</td>
<td>Extra credit</td>
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<tr>
<td>Presentations (in lab)</td>
<td>11.1</td>
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<tr>
<td>Lab Reports (worksheets)</td>
<td>11.1</td>
</tr>
<tr>
<td>Papers</td>
<td>Not assigned</td>
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<tr>
<td>Lab Practical Exam</td>
<td>5.6</td>
</tr>
<tr>
<td>Lecture Attendance</td>
<td>5.6</td>
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</table>
I. **COURSE CONTENT/SCHEDULE**  A=Abbas et al 8th ed.; K=Kuby 7th ed; M=Mak et al 2nd ed.; P=Parham 4th ed

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNMENTS (Optional reading)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 21</td>
<td>Intro: Cells &amp; Organs I</td>
<td>P: Ch. 1</td>
<td>K: Ch. 1, 2</td>
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<tr>
<td>Jan 26</td>
<td>Intro to Immunology: Cells &amp; Organs II</td>
<td>P: Ch. 1</td>
<td>K: Ch. 1, 2</td>
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<tr>
<td>Jan 28</td>
<td>Innate Immunity I</td>
<td>P: Ch 2</td>
<td>K: Ch. 4</td>
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<td>Feb 2</td>
<td>Innate Immunity II</td>
<td>P: Ch 3</td>
<td>K: Ch. 4</td>
</tr>
<tr>
<td>Feb 4</td>
<td>Innate Immunity III &amp; Complement</td>
<td>P: Ch. 3</td>
<td>K: Ch. 6</td>
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<tr>
<td>Feb 9</td>
<td>Methods in Immunology</td>
<td>K: Ch 20</td>
<td></td>
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<tr>
<td>Feb 11</td>
<td>Exam I</td>
<td></td>
<td></td>
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<tr>
<td>Feb 16</td>
<td>Adaptive Immunity I: Ab structure</td>
<td>P: Ch. 4, 9</td>
<td>K: Ch. 3, 7</td>
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<tr>
<td>Feb 18</td>
<td>Adaptive Immunity II: Ab function</td>
<td>P: Ch. 4, 6, 9</td>
<td></td>
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<tr>
<td>Feb 23</td>
<td>Adaptive Immunity III: B cell development</td>
<td>P: Ch. 6</td>
<td></td>
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<tr>
<td>Feb 25</td>
<td>Adaptive Immunity IV: B cell activation</td>
<td>P: Ch. 6, 9</td>
<td></td>
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<tr>
<td>Mar 1</td>
<td>Adaptive Immunity V: Memory B</td>
<td>P: Ch. 9</td>
<td></td>
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<tr>
<td>Mar 3</td>
<td>T cell med immunity I: Receptors</td>
<td>P: Ch. 4, 9</td>
<td>A: Ch. 7</td>
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<td>Mar 8</td>
<td>T cell med immunity II: Ag presentation</td>
<td>P: Ch. 5, 7, 8</td>
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<td>Mar 10</td>
<td>Exam II</td>
<td></td>
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<td>Mar 14-18</td>
<td>Spring Break</td>
<td>No class</td>
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<tr>
<td>Mar 22</td>
<td>T cell Med Immun III: T cell development</td>
<td>P: Ch. 7</td>
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<td>Mar 24</td>
<td>T cell Immun IV: Activation &amp; Differentiation</td>
<td>P: Ch. 8</td>
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<td>Mar 29</td>
<td>T cell med Immun V</td>
<td>P: Ch. 7, 8</td>
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<tr>
<td>Mar 31</td>
<td>Hypersensitivity I</td>
<td>P: Ch. 14</td>
<td>A: Ch. 19</td>
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<tr>
<td>Apr 5</td>
<td>Hypersensitivity II</td>
<td>P: Ch 14</td>
<td>A: Ch. 20</td>
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<td>Apr 7</td>
<td>Immune Resp. to Infectn</td>
<td>P: Ch. 10</td>
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<tr>
<td>Apr 12</td>
<td>Autoimmune I</td>
<td>P: Ch 13, 16</td>
<td>A: Ch. 15</td>
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<tr>
<td>Apr 14</td>
<td>Autoimmune II</td>
<td>P: Ch 13, 16</td>
<td>A: Ch. 15</td>
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<tr>
<td>Apr 19</td>
<td>Vaccines</td>
<td>P: Ch. 11</td>
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<tr>
<td>Apr 21</td>
<td>Review</td>
<td></td>
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<tr>
<td>Apr 26</td>
<td>Exam III</td>
<td></td>
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<tr>
<td>Apr 28</td>
<td>Immunodeficiencies</td>
<td>P: Ch. 13</td>
<td>A: Ch. 21</td>
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<tr>
<td>May 3</td>
<td>Graduate Student presen (if any)</td>
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<tr>
<td>May 5</td>
<td>Final Exam 11:00 am-1:30 pm</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

Important dates: R Feb 11—Exam I; R Mar 10—Exam II; T Apr 26—Exam III; R May 5—Final Exam 11:00 am-1:30 pm; Grad Student presentations (If any)- T May 3

J. COURSE POLICIES

Attendance/Tardiness
Students are expected to attend every scheduled class and laboratory meeting. It is the responsibility of the student to obtain any material missed during an absence from his/her classmates. Power Points may be placed on Blackboard, but this is not guaranteed. For labs, the instructor should be notified PRIOR to lab if the student will be absent (except in emergency situations). Students must attend the laboratory section for which they originally registered. “Make-up” by attending other lab sections is NOT permitted except in emergencies, only with a signed green permission slip from Dr. Buck.

There are points for attendance (50 pts) for the lecture of this class. Missed extra credit assignments cannot be made up for unexcused absences; approved University absences may be given alternative extra credit work which may NOT be identical to the missed assignment. Two unexcused absences are allowed for this class. You will get 10 points subtracted for the first unexcused absence (receive 40), 20 for the second (receive 30), and 50 pts for the third (receive zero). Three unexcused tardies equals one unexcused absence. Please note that instructor determines what is not excused. I define excused absences as emergency visits to the ER or physician or dentist; job, graduate and professional school interviews; death of close family members (siblings, in-laws, parents, step-parents, grandparents or great-grandparents, first cousins), or University-approved absences as described in the Catalogue and Student Handbook.

Late Work
Students will be given a Late Assignment Penalty for tardy work: 10% assignment grade deduction per class day late. However, after the 3rd day, late assignments will not be accepted. In-class late assignments are defined by being turned in after 12:35 pm. Please note that class assignments may be sent to me by e-mail or slid under my office door; tardiness is determined by the time noted on the instructor’s Inbox, but allowances can be made for server problems. Files contaminated by viruses, spyware, and worms will not be accepted. DO NOT ASK THE CUSTODIANS to let you into my office to place an assignment on my desk.

Extra Credit
A minimum of 40 pt extra credit is assured as pre- and post-test assessments. No make-ups are given for pre- and post-tests. Individual assignments for extra credit will not be given, so please do not ask! Other extra credit assignments may be given at instructor or lab TA’s prerogative. Instructor or TA is not obligated to give make-up
assignments for extra credit opportunities, whether excused or unexcused. The ONLY possible exception is for students with a university-approved scheduled absence. The make-up (if given) may not be the exact same assignment given to the class.

**Cell Phone Use**
DO NOT USE CAMERA PHONES IN LECTURE. DO NOT SEND TEXT MESSAGES DURING CLASS. Please turn off all cell phones, beepers, Bluetooth devices, Black Berries, etc., before entering the classroom, or at least place them on silent mode. I would prefer that earpieces not be worn in lecture. DO NOT TAKE PHOTOS of Power Point slides or videos with your cell phone camera unless otherwise instructed. Recording of lectures with recorders can only be done with permission of instructor—please see me privately.

**Laptop Use**
I have no problems with any student using a laptop in class, as long as they are not looking at pornography, anime, videos, etc.

**Food in Class**
I prefer that you not eat or drink in class, but I will not throw you out or ask you to leave.

**Missed Exams and Quizzes**
Students have two choices for making up exams due to **excused absences**. They can do an all-essay make-up exam, or the **percentage grade** of the questions from that section on the final exam can be used. There is no make-up for missed quizzes in lecture or lab, nor for missed exams due to **unexcused absences**. Missed extra credit opportunities may or may not be given make-up assignments, depending upon the nature of the assignment.

**Participation**
Since I use Socratic Method as an active learning strategy, I will not give points for class participation, but I do consider it for letters of recommendation and evaluation.

**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)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course, which is Friday, April 8, 2016.

- **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](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](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 (ADA of 1990, including the ADA Amendments from 2008 (PL 110-325), 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.

This act also includes **returning veterans** who may be experiencing cognitive and/or physical access issues in the classroom or on campus. 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/](http://disabilityservices.tamucc.edu/)

If you need disability accommodations in this class, please contact the instructor as soon as possible. If you have mobility problems, are pregnant, or you may have a history of seizures, please notify the instructor **PRIVATELY** so that assistance can be given in case of fire drills or emergencies. Please have your Faculty Notification Letter from the Disabilities Service Office when you talk with Dr. Buck.

- **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.

If class is cancelled due to a pending hurricane, that information is sent via your [islander.tamucc.edu account. It is strongly suggested that students have a functioning islander.tamucc.edu account!! I will also try to send it within Blackboard 9.1, as stated above. **I will not send out personal information regarding grades through other types of e-mail servers, only through islander.tamucc.edu. Please make sure this account is working.**
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.

- **List-serve**
  All students are on the Blackboard list serve for the course, and to a second opportunities-list serve.

  To subscribe, send a separate e-mail to [opportunities-list-request@listserve.tamucc.edu](mailto:opportunities-list-request@listserve.tamucc.edu).

  Make sure that your e-mail appears in the “From” heading. In the subject heading, type “subscribe,” then send the e-mail. Next, you will receive a second message with a long set of letters and numbers in the subject line. You must also reply to that message in order to be subscribed to the list-serve.

  After the initial message to subscribe, to send items on the list-serve, just type [opportunities-list@listserv.tamucc.edu](mailto:opportunities-list@listserv.tamucc.edu) (do NOT add –request after list). You may not receive the messages from the list-serve if your Internet service provider (Yahoo, Hotmail, Excite, Roadrunner, Grande, etc.) keep these messages from being placed in junk-mail. **The University administration prefers that you use the islander.tamucc.edu accounts.**

  At the end of the course, send an e-mail that contains your e-mail address in the “From” heading to [opportunities-list@listserve.tamucc.edu](mailto:opportunities-list@listserve.tamucc.edu). In the subject heading, type the word “unsubscribe,” then send the e-mail. I hope that students will continue to subscribe to [opportunities-list@listserve.tamucc.edu](mailto:opportunities-list@listserve.tamucc.edu)!

- **How to succeed in Immunology**
  First, read the syllabus. Second, re-read the syllabus. Third, read the syllabus again.

  Next, read the assigned text chapters. You need to re and re-read the text in conjunction with the notes taken from class Power Points. Immunology requires learning a different language, and thinking in a different context, which explains the difficulty of the subject matter. The material constantly gets updated and changed from basic science research.

  I would suggest having study groups, and go over the material before you meet with your study group.
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, and also on Blackboard.