

2014 SPRING **INTRODUCTION TO IMMUNOLOGY** **CRN #26732**
BIOL 3470 SECTION 01 **MWF 2:00PM-2:50PM** **SCI 109** **3 credit hrs.**

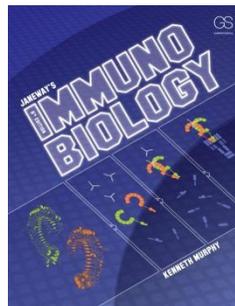
Instructor: Dr. Patt Allen. Campus phone: 652-7776. Email: allen_p@dixie.edu

Office: Science room 126. Office hours are **M-W, F 1-1:50pm; TH 2-2:50pm or by appointment**

Description: An Introduction to Immunology is designed for Biology majors wanting more coverage of topics related to the immune system and its response to microbes and viruses. General properties of immune responses, cells and tissues of the immune system, antibody-mediated and cell-mediated mechanisms of immunity, immunity to microbes, immunodeficiency and AIDS, autoimmune diseases, and transplantation will be discussed. Uses a variety of teaching methods including lecture, review of scientific journal articles, writing assignments, videos, quizzes, and exams. Successful completion of the course gives students a better understanding of the importance of the immune system to overall health and wellness of humans and other mammalian systems.

Prerequisites: Recommended Prerequisite: BIOL 3450 General Microbiology or BIOL 3550 Eukaryotic Cell Biology. Prerequisites: BIOL 3010 Evolution, BIOL 3030 Molecular Genetics and BIOL 3040 General Ecology (All Grade C or higher).

Required Texts: Janeway's Immunology (8th Edition) by Kenneth Murphy. Published by Garland Science ISBN-10: 0815342438 and ISBN-13: 978-0815342434. (Used around \$70).



Full text 5th ed. at: <http://www.ncbi.nlm.nih.gov/books/NBK10757/?term=basic+concepts+in+immunology>

Optional reference: none

Library, Computer Lab, Writing Center, Testing Center, and Tutoring Center

- Library – there is no library component but link at: <http://library.dixie.edu>
- Computer Lab – there is no computer lab component
- Writing Center - there is no writing center component but link at : http://new.dixie.edu/english/dsc_writing_center.php

Tutoring Center: There is no peer tutor for this course. A link to the Tutoring Center is found at: <http://dsc.dixie.edu/tutoring/>

See Assessments for Biology at: http://dixie.edu/biology/course_assessments.php

General Life Science Course Objectives: after successful completion of **Introduction to Immunology Lecture**, the student will through testing, written or oral reports **fulfill the bolded outcomes:**

- Goal 1: Demonstrate breadth of discipline-specific knowledge
 - **Outcome 1: Students will describe and explain fundamental topics in five principal perspectives of biology:**
 1. **The chemical and molecular machinations operating within all biological processes**
 2. **The centrality of genetic systems' governance of life's actions from the cellular to the phyletic**
 3. **The coordinated regulation of integrated cellular systems and their effect on the physiological functioning of organisms**
 4. The dynamic interaction of living systems with each other and their environments
 5. **The transforming role of evolution in changing life forms and how evolution explains both the unity and diversity of life**
- Goal 2: Demonstrate the capacity to think independently and critically
 - Outcome 2: Students will employ scientific methods to acquire, analyze and apply knowledge of biological phenomena.
 - Outcome 3: Students will evaluate scientific ideas and information while maintaining receptivity to potential alternative predications.
- Goal 3: Effectively convey scientific literacy through various mediums of communication
 - **Outcome 4: Reading Comprehension: Students will analyze and critique scientific literature: identifying hypotheses, critiquing methods, interpreting data and results, and articulating the context of discussions.**
 - Outcome 5: Written Communication: Students will produce well-written reports and/or research papers covering topics in biology. These papers will be presented in the accepted formats of scientific research articles.
 - Outcome 6: Oral Presentation: Students will publicly present scientific information covering specific topics in the biological sciences. Presentations will adequately communicate data and information in a clear and logical format.

Specific Introduction to Immunology Course Objectives: Upon completion of the class, students will be able to: this course explores normal and abnormal immune responses. After successful completion of this course, the student will through testing, written or oral reports:

- Discuss the chronological development of immunology from its origins as a technology for the diagnosis of infectious diseases to the development of immunology as a science.
- Describe the development and functions of different types of immune cells
- Demonstrate knowledge of the concepts of Innate Immunity
- Demonstrate knowledge of the concepts of Adaptive Immunity
- Be able to identify interconnections between Innate and Adaptive Immunity
- Show the shape and molecular structure of Antigen receptors of the phagocytic cells and lymphocytes B and T.
- Understand the maturation and differentiation of lymphocytes and expression of the antigen receptor genes.
- Discuss antigen transformation and presentation on major histocompatibility complexes.
- Discuss antibody production in vivo, in vitro and by genetic engineering methods.
- Explain mechanisms of the immunological tolerance.
- Recognize from descriptions of Hypersensitivity reactions (allergic, antibody-dependent, antibody/antigen-dependent)
- Discuss the use of traditional Vaccines recombinant (HBV, flu, HIV). DNA vaccines.
- Be able to describe Innate and acquired immunodeficiencies (AIDS).
- Understand Immunological mechanisms of the cancer and its therapy.

Reasonable Accommodation: Students with medical, psychological, learning or other disabilities desiring reasonable academic adjustments, accommodations, or auxiliary aids to be successful in their program of study should contact the Disability Resource Center within the first two weeks of the beginning of classes for eligibility determination. Proper documentation of impairment is required in order to receive services. DRC is located in the **North Plaza building**. You may call 652-7516 to schedule appointment for further information regarding the process to receive accommodations. A link to the Disability Resource Center is found at: <http://dixie.edu/drcenter/> (Spring 2014 Catalog version)

Dixie State College Policies and Statements can be linked from the website for the **Spring 2014** course schedule at: <http://new.dixie.edu/reg/?page=spring2014>

Academic dishonesty/academic integrity policy 34.1 Academic dishonesty in any form will not be tolerated at Dixie State College, including but not limited to plagiarism on written assignments, submitting other person's work as one's own, and cheating on exams or quizzes. Teachers at Dixie State College may discipline students proven guilty of academic dishonesty by:

- 34.1.1 Giving a **failing grade on the specific assignment** where dishonesty occurred,
- 34.1.2 **Failing the student in the entire course,**
- 34.1.3 Immediately dismissing and **removing the student from the course,** and/or
- 34.1.4 Referring the student to Student Affairs Committee which may **reprimand, place on probation, suspend, and/or expel the student.**

Disruptive Behavior policy 34.2: Teachers at Dixie State College have the right to manage the classroom environment to ensure a good learning climate. Toward this end, teachers (or college security) **may dismiss and remove disruptive students from individual class** activities. If a student's behavior continues to disrupt class activities, the teacher may dismiss and **cause the removal of disruptive students from their course.**

(continued) Disruptive Behavior

- **Text or instant messaging, gaming,** and any other extraneous use of electronic devices during lecture is annoying to the instructor, and equally damaging to you as a student. Peer reviewed investigations conclude that less information is absorbed and retained when these devices are in use. If your instructor observes you using a device, **10 points will be deducted from your course grade the first time, and again for every time thereafter.**
- **All cell phones must not be audible** during class. If your appliance tings, beeps, rings, chirps, etc., **10 points will be deducted from your course grade the first time, and again for every time thereafter.**

Student Appeals policy 34.3: Students who believe themselves wrongfully disciplined may appeal those disciplinary actions through the standard grievance procedure. (Policy 5-35)

Communication: Students are required to frequently check their Dmail account. Important class and college information will be sent to the Dmail account, including DSC bills, financial aid/scholarship notices, notices of cancelled classes, reminders of important dates and deadlines, and other information critical to your success at DSC and in your courses. To access your Dmail account, visit go.dixie.edu/dmail. If you do not know your Dmail username or you have forgotten your PIN, visit go.dixie.edu/mydixie and follow the respective instructions

Communication: All lectures are posted on **Canvas** and **students should copy them off in handout form and bring them to class.** Periodically, announcements about upcoming exams or changes in schedules and other **important class business will occur at the Canvas site.** If you do not know your username and password, see the following link: http://new.dixie.edu/helpdesk/usernames_and_passwords.php

Strategies for Success:

- **Form a study group** of three or four people to use as a source of alternative perspectives, "sounding boards" and study partners. Keep "on task" when studying and remember to apply the principles of critical thinking.
- Embrace "active learning". **You need to start with a blank white sheet of paper and see if you can write a complete explanation of a particular process**-using each term correctly and justifying each statement with specific facts (values, measures, etc.)
- Download from Canvas, **a copy of the PowerPoint** lecture before coming to class and leave room to take notes. I STRONGLY SUGGEST USING COLOR!
- Read the text along with the PowerPoint slides-fill in any details that better help you understand the concepts-but concentrate on what the PowerPoint slide covers. If text pages are assigned to read, be sure to do so.
- **Come see me for help on a regular basis-** don't wait until the day before an exam when it is too late for much assistance.

Attendance and Make-Up Policy

- **Students should attend each class period**, however, if an absence occurs, email and/or phone me as soon as possible.
- **If you feel ill, stay home** and email and/or phone me as soon as possible.
- IF YOU PLAN ON MISSING ANY SCHOOL DUE TO A VACATION, WEDDING, FAMILY REUNION, etc....**do not enroll this semester!**
- IF YOU ARE INTERVIEWING FOR A PROFESSIONAL PROGRAM, give me two weeks advance notice and I **may** arrange makeup dates.

If a student fails to complete an assignment, quiz **or exam** on the scheduled date, the instructor may choose to allow a “**make-up**”, provided there is:

1) A **health care provider’s statement that student was too injured or too ill** to participate on the scheduled date

2) **Evidence of military service or jury duty**, or other mitigating circumstances that the instructor agrees were justifiable and unavoidable. Call the instructor **as soon as you know** that you will miss a lecture, quiz or exam.

3) Students who must miss class because of an **DSU sanctioned activity**, such as an athletic event, club activity, class assignment, or other approved event, are responsible to assuring that their instructors have been notified and for completing any missed assignments. (Excerpts from Policy 23.5.3 follow)

23.5.3.1 **Prior to the absence**, students traveling with a club, team, or other group on an **university-sanctioned activity** must request leave.

23.5.3.1.1 Students involved in a club event or an activity related to another course or program requirement must **provide written notification from the faculty or staff member supervising the activity that explains the nature of the activity.**

23.5.3.1.2 **By the second day of class**, students with recurring absences must provide each instructor written notification from the appropriate department that includes a schedule of competition, the names of those students on specific teams likely to travel, and the dates and approximate times of departure and return to campus.

23.5.3.2 Students must arrange with the instructor to complete missed instruction and/or coursework.

23.5.3.2.1 One week prior to an absence, the student will meet with the instructor to arrange a reasonable accommodation, if feasible, to allow the students to complete any missed coursework and/or exams. The instructor may require the student to submit work prior to the due date if the student will be absent.

IF THE INSTRUCTOR CHOOSES to ALLOW LATE COMPLETION, from 0-90% POINTS WILL BE DEDUCTED BEFORE GRADING

Examinations:

- Exam format varies and might include **multiple choice**, definitions, matching, **schematics**, fill-in-the blank, **sketching**, problem solving, and short **essays**.
- **All Exams are cumulative** however each exam will emphasize the chapters listed on the tentative schedule.
- Student is tested on the text readings and material covered in lecture and written on the PowerPoint slides.
- **Critical thinking skills are stressed** much more than simple memorization and recognition of the correct answer as commonly seen in multiple-choice exams. A student must be able to....
 - **integrate information** from one chapter to all other chapters
 - define terms completely and **use appropriate term in context**
 - **support their opinion with facts** from the text or lecture
 - **extrapolate** from one situation and **apply knowledge to novel** situation

Exam 1 is take-home to be completed over several days and due Wed at start of class. A student must complete **Exam 1** to earn a passing grade in the course and this score will count toward the final point total.

Exams 2-4 are completed in the testing center during the hours of operation

beginning **4pm Sunday and ending at 4pm Tuesday**. It is the student's responsibility to check the testing center for the hours of operation for any scheduled exam, because hours sometimes change during the semester. See: <http://dixie.edu/testing/>

FINAL exam is completed in the classroom during scheduled final exam period **Apr 28th (MON) 12:30-2:30 pm**. A student must complete **FINAL exam** to earn a passing grade in the course, no matter how many points they have earned up to that date.

Grading: There will be 1000 points possible for the course. **NO ROUNDING UP OF SCORES WILL OCCUR.** Final grades will be based on these ranges:

A = 93-100%	B+ = 87-89.99%	C+ = 77-79.99%	D+ = 67-69.99%
A- = 90-92.99%	B = 83-86.99%	C = 73-76.99%	D = 63-66.99%
	B- = 80-82.99%	C- = 70-72.99%	D- = 60-62.99%
			F = <59.99%

Unannounced Quizzes or Assignments	extra credit
Exam One take home.....	100
Exam Two, Three, Four Completed and Low score dropped (200 points ea).....	400
Team Presentation (30min) on Assigned Topic.....	100
Individual Presentations (30min) on Assigned Topic Response	200
Final Exam.....	200

Important Dates for Students in 2014 Spring Semester

Jan 2 Spring 2014 Late application penalty begins	Mar 17 Summer Registration open to Seniors (90+ credits)
Jan 6 Classwork Starts	Mar 18 Summer Registration open to Juniors (60+ credits)
Jan 9 Last Day to Waitlist	Mar 19 Summer Registration open to Sophomores (30+ credits)
Jan 10 Last Day to Add Without Signature	Mar 20 Summer Registration open to all students
Jan 15 Drop/Audit Fee Begins (\$10 per class)	Mar 28 Last Day for Complete Withdrawal
Jan 15 Residency Application Deadline	Apr 1 Bachelor's degree Graduation Deadline - Fall 2014
Jan 20 Martin Luther King Jr. Day	Apr 7 Fall Registration open to Seniors (90+ credits)
Jan 21 \$50 Late Registration/Payment Fee	Apr 8 Fall Registration open to Juniors (60+ credits)
Jan 27 Pell Grant Census	Apr 9 Fall Registration open to Sophomores (30+ credits)
Jan 27 Last Day for Refund	Apr 10 Fall Registration open to all students
Jan 27 Last Day to drop without a "W" grade	Apr 23 Classwork Ends
Jan 29 Courses dropped for non-payment	Apr 24 Reading Day
Jan 31 Last Day to Add/Audit	Apr 25 Final Exams
Jan 31 Associate's degree Graduation Deadline - Spring 2014	Apr 28-30, May 1 Final Exams
Feb 17 President's Day	May 1 Associate's degree Graduation Deadline - Summer 2014
Feb 24 Mid-Term Grades Due	May 2 Commencement
Feb 28 Last Day to Drop Individual Class	
Feb 28 Bachelor's degree Graduation Deadline - Summer 2014	
Mar 10-14 Spring Break	
Mar 17 Fall 2014 Class schedule available online	

Tentative schedule is provided This schedule may change and the actual chapters covered for a particular exam may change; you must attend class on a regular basis!

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
JANUARY			1	2	3
5	6 Syllabus	7	8 1 Basic Concepts	9	10 1 Basic Concepts
12	13 2 Innate Immunity	14	15 2 Innate Immunity	16	17 3 Induced Responses of Innate Immunity EXAM 1 handed out
19 TESTING CENTER CLOSED	20 HOLIDAY NO CLASS	21	22 Due EXAM 1 4 Antigen Recognition	23	24 4 Antigen Recognition
26	27 5 Generation of Antigen Receptors LAST DAY TO DROP WITHOUT A "W" GRADE	28	29 5 Generation of Antigen Receptors	30	31 5 Generation of Antigen Receptors LAST Day to AUDIT

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
FEBRUARY 2	3 6 Antigen Presentation to Lymphocytes	4	5 6 Antigen Presentation to Lymphocytes	6	7 7 Signaling Through Immune System Receptors
9 EXAM 2	10 8 B Lymphocytes (Team A Presents) EXAM 2	11 EXAM 2	12 8 T Lymphocytes in Thymus (Team B Presents)	13	14 8 Positive and Negative Selection T cells (Team C Presents)
16 TESTING CENTER CLOSED	17 HOLIDAY NO CLASS	18	19 9 T cell Mediated Immunity	20	21 9 T cell Mediated Immunity
23	24 9 T cell Mediated Immunity	25	26 10 Humoral Immune Response	27	28 10 Humoral Immune Response LAST DAY TO DROP AN INDIVIDUAL CLASS

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
MARCH 2	3 10 Humoral Immune Response	4	5 11 Dynamics Adaptive Immunity	6	7 12 Mucosal Immune System
9 TESTING CENTER CLOSED	10 SPRING BREAK HOLIDAY	11	12 SPRING BREAK HOLIDAY	13	14 SPRING BREAK HOLIDAY
16 EXAM 3	17 EXAM 3 16 Fighting Infectious Diseases with Vaccinations	18 EXAM 3	19 16 Fighting Infectious Diseases with Vaccinations	20	21 16 Fighting Infectious Diseases with Vaccinations
23	24 13 Failures of Host Defense Mechanisms	25	26 STUDENT PRESENTATIONS 13 Immunodeficiency Diseases	27	28 STUDENT PRESENTATIONS 13 Immunodeficiency Diseases
30	31 STUDENT PRESENTATIONS 13 Immunodeficiency Diseases				

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
APRIL		1	2 14 Allergy & Allergic Diseases	3	4 14 Allergy & Allergic Diseases
6	7 STUDENT PRESENTATIONS 14 Allergy & Allergic Diseases	8	9 15 Autoimmune Disease	10	11 15 Autoimmune Disease
13 EXAM 4	14 15 Autoimmune Disease EXAM 4	15 EXAM 4	16 STUDENT PRESENTATIONS 15 Autoimmune Disease	17	18 15 Graft Rejection
20 TESTING CENTER CLOSED FOR EASTER	21 16 Manipulation of Immune Responses	22	23 16 Manipulation of Immune Responses	24 NO CLASSES	25 FINALS BEGIN
27	28 FINAL 1230-230pm	29	30		