

Placement for BIO201 and BIO 205 at Glendale Community College

Introductory Biology for Allied Health (BIO 156) is a cell and molecular biology course that sets the foundation for Human Anatomy and Physiology (BIO 201 and BIO 202) and Microbiology (BIO 205). We have found that students who do not have a working knowledge of the topics covered in BIO 156 have difficulty passing A&P and Microbiology. To help insure the chances for student success in these 200-level courses, the Biology Department at Glendale Community College has developed two tools so that students without BIO 156 or 181 can evaluate their preparation and make the best choice as to which is the most appropriate initial college biology course.

(Please note: Effective Fall, 2011, students will, at minimum, need to be *eligible* to enroll in CRE 101 in order to register for BIO 156, 181, 201 or 205. Eligibility is determined based either a score on the reading placement test (ACCUPLACER)* that places the student at or exempt from CRE101** or by passing RDG091 with a "C" or better. This critical reading requirement is *in addition* to the biology preparation detailed by the three options listed below).

* (for more information about this test, see <http://www.gccaz.edu/TestingServices/12884.htm>)

** (see following link for scores on ACCUPLACER test required to test at these levels http://www.gc.maricopa.edu/advisement/docs/districtwide_cutoff_scores_fall_2009.pdf)

Option 1:

Students who have taken BIO 156 or BIO 181 with a C or better can register for BIO 201 or 205 provided they meet the minimum critical reading level described in the second paragraph above or in the prerequisites listed at the end of each course description (<http://www.gccaz.edu/biology/coursesah.html>)

Option 2:

Students who have taken a year of high school biology with a C or better and meet the minimum reading requirement, detailed in the second paragraph above, will need to take the "Self-Assessment for BIO 201 and 205" before they can enroll in BIO 201 or 205 at GCC. This computerized, multiple choice exam is given in the Institute Classroom 2 (ICB2) building in room ICB2-6. Students need to bring a photo ID. The current hours for computerized testing can be found at <http://www.gccaz.edu/calendar/testing/> or by calling 623-845-3267.

In order to enroll in BIO 201 or 205, students are required to provide a copy of their high school transcript, discuss their assessment score with a GCC academic advisor and obtain his/her signature. If you score 70% or higher on this test, the advisor will give you permission to enroll in BIO 201 or 205. If you score lower than this and, after your discussion with your advisor, *still* wish to do so, you can enroll in BIO 201 or 205; however, our data indicate that you will not be well prepared for these rigorous 200-level courses and are unlikely to earn a grade of A or B. Our advisors want to "set you up to succeed" and will urge you to invest a semester in BIO 156 or 181 to increase your odds of doing well in Anatomy & Physiology and Microbiology. Students generally achieve more timely academic progress if they come in to their advanced courses with a solid foundation in biology.

Option 3:

Students who have not had high school biology and have not passed BIO 156 or BIO 181 with a grade of C or better must enroll in BIO 156 or BIO 181 (BIO 156 recommended) unless they score 70% or higher "BIO 156 Waiver Exam." This 100 question multiple choice exam can be taken in the Testing and Disability Center (TDS). The student must bring a scantron, number 2 pencil, and photo ID. The exam may be taken only one time. The current hours for this testing

are listed below and can be verified at <http://www.gccaz.edu/studentservices/7149.htm>
Passing the waiver exam only addresses biology preparation; in order to enroll in BIO 201 or 205, students must also meet the reading eligibility requirement described in the second paragraph above or in the prerequisites listed at the end of each course description.
(<http://www.gccaz.edu/biology/coursesah.html>).

The recommended text for review is *Biology: Concepts and Connections*. Campbell, Reece, Taylor, Simon, and Dickey. 6th edition. Pearson/Benjamin Cummings Publishers (Chapters 1-12). It is on reserve in the GCC Library. The concepts covered in BIO 156 and included on the waiver exam and the self-assessment are outlined in the course competencies and outline below.

BIO 156 MCCCDC Official Course Competencies:

1. Describe principles of scientific method. (I)
2. Describe fundamental characteristics of living matter. (I)
3. Describe principles of biological chemistry. (II)
4. Describe prokaryotic and eukaryotic cell structure and function. (III, IV)
5. Describe human histology including a survey of basic tissue types, their structure, and function. (V)
6. Describe principles of cell metabolism and energy utilization. (VI, VII)
7. Describe the structure, growth, and human impact of bacteria and viruses. (VIII)
8. Describe structure and replication of deoxyribonucleic acid (DNA) and chromosomes. (IX)
9. Describe gene structure and protein synthesis. (X)
10. Describe cell reproduction in eukaryotes. (XI)
11. Describe principles of Mendelian genetics as they apply to inheritance in humans. (XII)
12. Apply general concepts to selected topics in human biology. (XIII)

MCCCDC Official Course Outline:

- I. Biology Concepts
 - A. Principles of scientific method
 - B. Fundamental characteristics of living matter
 1. Levels of organization
 2. Responsiveness and homeostasis
 3. Metabolism
 4. Reproduction and heredity
- II. Biological Chemistry
 - A. Composition of matter
 - B. Atomic structure and theory
 - C. Chemical bonding and molecules
 1. Salts and pH
 2. Characteristics of water
 - D. Organic and biological molecules
 1. Structure
 2. Function
- III. Cell Theory
 - A. Cell anatomy and function
 - B. Comparison of prokaryotic and eukaryotic cells
- IV. Cell Membranes
 - A. Membrane structure
 - B. Membrane function and cell transport

- V. Human Histology - Structure and Function
 - A. Epithelial
 - B. Connective
 - C. Muscular
 - D. Nervous
- VI. Cell Energy and Metabolism
 - A. Chemical energy
 - B. Enzymes
 - 1. Structure
 - 2. Function
 - C. Metabolism
 - 1. Biochemical pathways
 - 2. Feedback and metabolic regulation
- VII. Cell Energy Utilization
 - A. Photosynthesis
 - 1. Light reactions
 - 2. Dark reactions

 - B. Anaerobic metabolism
 - 1. Glycolysis
 - 2. Fermentation
 - C. Aerobic metabolism
 - 1. Tricarboxylic acid (TCA) (Krebs) cycle
 - 2. Electron transport
- VIII. Bacteria and Viruses
 - A. Bacteria
 - 1. Structure
 - 2. Growth
 - 3. Human impact
 - B. Viruses
 - 1. Structure
 - 2. Growth
 - 3. Human impact
- IX. Chromosomes and DNA
 - A. Chromosome structure
 - B. DNA structure
 - C. DNA and chromosome replication
- X. Gene Structure and Protein Synthesis
 - A. Gene structure and regulation
 - B. Protein synthesis
- XI. Cell Reproduction (Eukaryotic)
 - A. Cell cycle and mitosis
 - B. Meiosis and recombination
- XII. Mendelian Genetics and Human Inheritance
 - A. Law of segregation and Punnett squares
 - B. Law of independent assortment
 - C. Karyotyping and chromosomal mutations
 - D. Inherited gene mutations
- XIII. Selected Topics in Human Biology