

SYLLABUS

General Education Biology (BSC, Section 864034) (Web-Enhanced Course)

"Nobody is born intelligent: intelligence feeds from strong effort and desire to learn"
-Anonymous

Term: Fall 2015-1

Class location: Room 2306

Class Meeting time: Tuesday, 5:40 PM – 8:10 PM

Professor: Dr. Félix E. Rivera-Mariani

Office Room: 1664

Office Hours: 3:30 PM – 5:00 PM or by appointment

Email: friveram@mdc.edu

Phone: TBA

Required Textbook (print or ebook): Reece J., Taylor M., Simon E, and Dickey J. 2012. Campbell Biology: Concepts & Connections. 7th edition. Benjamin Cummings. ISBN 978-0321696816

Note: *there are many options online to rent to the textbook book as well*

I. Rational of the course

To introduce students to the main biological concepts that abound in our continuous inquiry to understand life. With the concepts covered, students will have an introductory understanding of molecular biology, genetics, biochemistry, cellular biology, evolution and other topics that help us understand how biosciences explain the interactions between living organisms the environment. In addition, real-life and scientific scenarios will be presented to learn the way biology is scientifically practiced, and how biology affects our daily lives.

II. Learning Objectives: *By the end of this course, students will be able to:*

1. Summarize the scientific method and how it is applied in biosciences
2. Illustrate examples of the scientific method in the study of living organisms
3. Describe the main characteristics of living organisms
4. Differentiate between and organize the different levels of hierarchy of living organisms
5. Define and exemplify the laws that apply to energy and matter
6. Recognize between atoms, elements, compounds, and molecules
7. Recognize the importance of water for living organisms and the ecosystem
8. Define and differentiate between carbohydrates, lipids, nucleic acids, and proteins
9. Integrate the different roles of biological molecules into living organisms
10. List and describe the different sub-cellular organelles
11. Integrate the functions of sub-cellular organelles in living organisms
12. Describe the mode of transport of ions, compounds, and molecules within cells

13. Describe and compare between cellular respiration and photosynthesis
14. Summarize and differentiate between the different stages of the cell cycle
15. Describe and differentiate the processes of cellular reproduction and inheritance
16. Summarize the laws of inheritance and apply them to different living organisms
17. Recognize between DNA replication, transcription, and translation
18. Exemplify the transfer of genetic information
19. Describe and exemplify the evolutionary theories
20. Deconstruct the interactions between the environment and living organisms within the ecosystems

III. Course Materials (Web-Enhanced Course)

- Syllabus, Professor's credentials, Reading assignments, Lectures, Assignment instructions, and Supplemental materials will be available at mdc.blackboard.com.
- Download and install **i>clickerGo™**, and bookmark <https://app.reef-education.com/#/login> into your smartphone. Instructions will be provided in class and in Blackboard Learn on how to create an account into **i>clickerGo™**

IV. Methods of Instructions

Flipped learning: in some occasions and with prior notification, digital formats of lectures and supplemental materials will be made available online in Blackboard Learn prior to meeting in the class. The professor will inform if before or after a particular class period you must access these materials. Keep in mind that ***you'll always be exposed to a new topic on your own.***

Reading assignments: through a series of online guide questions you will always be exposed to a new topic (e.g. terminology, protocols, interpretation of results) prior to meeting in the class. These questions will also guide you to **1)** read with a purpose (preparing for you for class), and **2)** engage you in **spaced practice** of your learning (i.e. allowing some forgetting to settle in for learning to be effortful) because we'll be carrying out discussions on the corresponding topics in class as well. ***These Pre-Lab reading assignments count for a grade (see Grading Scales).***

Group work will facilitate the discussion and peer-teaching of biochemical terms, processes, methods, health outcomes, and scientific data, among others. You'll be grateful for peer-teaching in the classroom.

Student Responses Systems ("clicker") will help the discussion in the class when questions, scientific information, illustrations, among others are presented in class. Through the use of "clicker" applications in your smartphone, you will be able to answer instantaneously and remotely. More importantly, this approach will allow us to discuss and exchange feedback in real-time in the class.

Written communications provide important information about your learning and how you are organizing knowledge. Formative assessments (i.e. not graded but important for feedback) will be common throughout the course in class, and essential to prove you timely and useful feedback. In addition, a written assignment will be part of the grading scale: feedback will be provided at its different deadlines.

Monitoring your learning: I'll be monitoring your learning throughout the course. With the aid of carefully designed cumulative weekly quizzes, your responses in class, and exams, I'll be employing mathematical (e.g. statistics) and other analyses of your learning and proficiencies with the learning objectives of the course (see page 1). ***Don't forget your effort: numbers will tell the story about your effort as well.*** I'll be sharing with your learning is performing in the class.

V. Academic Integrity

Each student is expected to maintain a high level of integrity and abide by the procedure 4074 of the Miami-Dade College Student Rights and Responsibility Handbook. Any work submitted by a student in the course for academic credit will be the student's own work. For the purpose of this course, collaboration is allowed in the following instances: in-class group work, case studies discussions, or when stated by the professor. Nevertheless, each student must submit their individual work unless indicated otherwise by the instructor. Avoid at all costs copying and pasting the information from your classmates' response or from any other sources.

As part of a collaborative and encouraging classroom, you are encouraged to study together and to discuss topics and concepts covered in class with other students. You can obtain "consulting" help from students as well as provide "consulting" help to other students. However, this allowed form of cooperation should never involve one student having possession of a copy of all or part of the work done by another student or someone else, in the form digital files or printed documents.

In the case that copying occur, both the student who copied work from another student and the student who contributed to this behavior will both automatically receive a zero for the corresponding assignment. The penalty for violation of this Code can include failure of the course and/or notifying the corresponding University authorities for disciplinary action.

During exams (i.e. quizzes and exams), you must do your own work. Talking or discussions are not allowed during the examinations. In addition, you cannot compare papers, copy from others, or collaborate in any way. Any form of the behaviors mentioned above will result in failure of the exam and can include notifying the corresponding University authorities for disciplinary action. **Cell phones cannot leave the classroom during exams, and must be turned off during class unless needed for our in-class discussions.**

Any form of **plagiarism** will constitute Academic Dishonesty, and points won't be earned during any form of this fault. **Make sure you understand what constitute plagiarism and how to avoid it.**

Any other form of Academic Dishonesty listed in the Miami-Dade College Student Rights and Responsibility Handbook will not be accepted during in the course.

VI. Attendance

Attendance at each class sessions parallels with your learning in the course. The course requires the input of time and effort in order to learn and be proficient in the learning objectives stated earlier in the syllabus. In addition, **20 easy points** for good attendance will be provided towards your final grade. **For each unexcused absence, unfortunately, I'll have to deduct 1 point, and 0.5 points for each unexcused tardiness.** In the event of an absence, the student will be allowed to make up work if the absence results from one of the following:

- A. Official campus activities (as designated by MDC)

- B. Family or personal emergencies (as designated by MDC)
- C. Medical reasons (discussed with the instructor)
- D. Work-related reasons (discuss with the instructor)

-Make-up exams are allowed only if your excuse meets any of the four requirements above.

-Make-up for quizzes are not permitted.

-With three unexcused absences, I won't be able to keep you on the class roster.

Late policy

Unless arrangement have been made prior to the due date or have a valid absence excuse (as stated in the Attendance section of this syllabus), I won't be able to award full grade on Late Assignments **(the final grade for any late assignment will be 30% less)**.

VII. Accommodations for students with disabilities

In compliance with the Miami-Dade College and the Student Rights and Responsibility Handbook policy and equal access laws, I more than available to discuss any necessary academic accommodations that may be required for the student with disabilities. Requests for academic accommodations are to be made during the first week of the term, except for unusual circumstances, so arrangements can be made. Students are encouraged to contact the Student Services to verify their eligibility for appropriate accommodations.

VIII. Inclusivity Statement

Members (student, faculty, administrators) of the Miami-Dade College community represent a diversity of backgrounds and perspectives. In this course, and as a member of this community, I am a strong supporter of diversity and its benefits. Therefore, to maintain an adequate learning and diverse environment students in this course are strongly encouraged to:

- A. share their unique beliefs, experiences, and values
- B. be open to the opinions and views of others
- C. honor your colleagues' uniqueness
- D. appreciate the unique opportunity we have to learn from each other
- E. value each other's opinions and communicate in a respectful manner
- F. keep confidential discussions of personal and professional nature
- G. take advantage of this opportunity to share ways in an inclusive environment
- H. must maintain at all times a respectful environment

IX. Grading Scales:

Item	Points
Daily Quizzes	50
Attendance	20
Reading Assignments	30
1 st Exam	100
2 nd Exam	100
3 rd Exam	100
Total points	400

i-clicker questions (Bonus)

Grade	Percentage	Points
A	100 – 90.0%	360
B	89.9 – 80.0%	320
C	79.9 – 70.0%	280
D	69.9 – 60.0%	240
F	Below 60.0%	Below 240

Reading Assignments (30 total points): With the Reading assignments and the aid of guide questions, you will begin to settle new knowledge with each topic. These Reading Assignments will be available in Blackboard Learn (<http://mdc.blackboard.com>): their deadline will always be just before class time (5:39 PM) unless otherwise stated. Keep in mind that these guide questions won't be available when class time begins. Therefore, due the corresponding reading and complete the guide questions in advanced. Similar to points for attendance, these questions will be **30 easy points towards your final grade**. Nevertheless, won't be able to maintain your total 30 points when

- less than 7 out of 10 questions are answered incorrectly: will have to deduct 0.5 points.
- none of the questions is answered: will have to deduct 0.5 points.
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Exams: Three 100 points exams will be administrated during regular laboratory periods. Refer to the syllabus schedule to know the dates of the exams. Each of the exams will be a combination of true/false, multiple choice, fill the blanks, and open-ended questions. No scantrons are needed: questions will be answered on the printed exam provided. **Exams are cumulative.**

Academic Dishonesty regulations, as stated in the MDC student handbook, will have to be strictly enforced. Any violations will lead to a zero on the exam.

There are no make-ups for Exams unless the absence meets the requirements of the Attendance sections of this syllabus.

Quizzes: During the first 20 minutes of each class section, cumulative quizzes will be administered. These quizzes will rehearse your knowledge with effortful learning through open-ended questions. They will also provide valuable information on how and what you are learning.

X. Incomplete Grades and Withdrawals

Incomplete (I) grades will be posted only in consultation with the student and professor, and only when extenuating circumstances will prevent the student to complete the requirements of the course. At least one-half of the course must have been completed with a C or better grades. It is important that the incomplete (I) be completed within the timeframe agreed between the student and the professor. Unfortunately, if not completed within the agreed time frame, the incomplete must be submitted as an F.

Withdrawals: The professor is not entitled to withdraw a student from the course: it is the students' duty to evaluate and monitor how he/she is doing in the course. Knowing your status in the course will be important in the case you determine it is necessary to withdraw from the course. The deadline to withdraw (W) from the course **November 3rd, 2015**. Keep in mind that a "W" grade will be permanent in your grade transcripts, and constitute an attempt for the course.

XI. Tentative Course Schedule (schedule may change due to unexpected events)

(Weekly topics and Quizzes, due dates of Reading Assignments, Exams, among others will also be posted in mdc.blackboard.com)

Date	Week	Topic	Due Dates for <u>Pre-Lab Reading</u> and <u>Lab Reports</u>
Aug-25	W1	-Course introduction -Discussion of syllabus	
Sep-1	W2	-Introduction to Biology -Chemistry	-Quiz 1 -Reading Assign. 1 (Ch. 2)
Sept-8	W3	-Chemistry -Biological molecules	-Quiz 2 -Reading Assign. 2 (Ch. 2-3)
Sept-15	W4	-Components of the cell	-Quiz 3 -Reading Assign. 3 (Ch. 4)
Sept-22	W5	-Energy, Enzymes, Cell transport	-Quiz 4 -Reading Assign. 4 (Ch. 5-6)
<u>Sept-29</u>	<u>W6</u>	<u>-Exam 1</u>	
Oct-6	W7	-Energy, Enzymes, Cell Transport	-Reading Assign. 5(Ch. 5-6)
Oct-13	W8	-Cellular Respiration	-Quiz 5 -Reading Assign. 6(Ch. 6)
Oct-20	W9	-Cellular Respiration, Fermentation	-Quiz 6 -Reading Assign. 7(Ch. 6)
<u>Oct-27</u>	<u>W10</u>	<u>Exam 2 (Midterm Exam)</u>	
Nov-3	W11	-Photosynthesis	-Reading Assign. 8(Ch. 7)
Nov-10	W12	-Genetics and Inheritance	-Quiz 7 -Reading Assign. 9(Ch. 8)
Nov-17	W13	-Genetics and Inheritance	-Quiz 8 -Reading Assign. 10(Ch. 9)
Nov-24	W14	-Molecular Genetics and Biotechnology	-Quiz 9 -Reading Assign. 11 (Ch. 10-11)
Dec-1	W15	-Evolution	-Quiz 10 -Reading Assign. 12 (Ch. 13, 14)

Dec-8	W16	-Evolution -Biosphere	-Quiz 11 (bonus) -Reading Assign. 13(Ch. 34)
<u>Dec-15</u>	<u>W17</u>	<u>-Exam 3 (Final Exam)</u>	