

Syllabus: General Education Biology (section 1852)

Prof: Felix E. Rivera-Mariani, PhD

BSC1005(section 1852), Web-Enhanced

“Nobody is born intelligent: intelligence feeds from strong effort and desire to learn” –Anonymous

I. General Course Information

- **Term:** 2016-2
- **Class location:** Room 2307
- **Class meeting time:** Mon, Wed, Fri @ 9:00AM - 9:50AM
- **Professor:** Dr. Felix E. Rivera-Mariani
- **Office room:** room 237
- **Office hours:** before class time or by appointment
- **email:** friveram@mdc.edu

II. 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

III. Rationale 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 and 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.

IV. Learning Objectives

By the end of the course, students will be able to:

- A. Summarize the scientific method and how it is applied in biosciences
- B. Illustrate examples of the scientific method in the study of living organisms
- C. Describe the main characteristics of living organisms
- D. Differentiate between and organize the different levels of hierarchy of living organisms
- E. Define and exemplify the laws that apply to energy and matter
- F. Differentiate between atoms, elements, compounds, and molecules
- G. Recognize the importance of water for living organisms and the ecosystem
- H. Define and differentiate between carbohydrates, lipids, nucleic acids, and proteins
- I. Integrate the different roles of biological molecules into living organisms
- J. List and describe the different sub-cellular organelles
- K. Integrate the functions of sub-cellular organelles in living organisms

- L. Describe the mode of transport of ions, compounds, and molecules within cells
- M. Describe and compare between cellular respiration and photosynthesis
- N. Summarize and differentiate between the different stages of the cell cycle
- O. Recognize between DNA replication, transcription, and translation
- P. Exemplify the transfer of genetic information
- Q. Describe and exemplify the evolutionary theories
- R. Deconstruct the interactions between the environment and living organisms within the ecosystems

V. Course Materials

A. All materials, links, videos, among others will be available in <http://mdc.blackboard.com>.

B. **Textbook:** Reece J., Taylor M., Simon E, and Dickey J. 2017. Campbell Biology: Concepts & Connections. 7th edition. Benjamin Cummings. ISBN 9780132492539.

Note: The textbook is needed, but feel free to **rent** (search online for renting options for the textbook) or **borrow it from someone**

C. **ToHat™**

For Apple-based equipment, use the following link: <https://itunes.apple.com/us/app/top-hat/id674069291>
 For Android-base equipment, use the following link: <https://play.google.com/store/apps/details?id=com.tophat.android.app>

D. **Reef-Polling™** account through one of the following:

For Apple-based equipment, use the folloowing link: <https://itunes.apple.com/us/app/reef-polling-by-i-clicker/id899690067?mt=8> For Android-based equipments, use the following link: <https://play.google.com/store/apps/details?id=com.mnv.reef&hl=en> An additinoal option would be to use the app through the web browser @ <https://app.reef-education.com/#/login>.

VI. Methods of Instructions

A. **Reading assignments** will always expose you to a new topic (e.g. terminology, concepts, theories, etc. 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 (i.e. allowing some forgetting to settle in for learning to be effortful). These Pre-Lab reading assignments count for a grade (see Grading Scales).

B. **Group work** will facilitate the discussion and peer-teaching of biological terms, concepts, processes, methods, scientific data, among others.

C. **TopHat** will facilitate your active participation in the classroom. You will be able to view the lecture in real-time in your smartphone, table, or laptop. Through your smartphone, tablet, or laptop, you will be able to submit answers to practice questions posted by the professor.

D. **Weekly quizzes** will keep you studying and help you identify (and the professor as well) the areas that you may be struggling with. These quizzes are cumulative to help you integrate information.

VII. 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. **The penalty for violation of this Code can include 0 on an assignment, failure of the course and/or notifying the corresponding University authorities for disciplinary action.**

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.

VIII. 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. 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)

Important notes

- 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.

IX. 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**).

X. Accomodations 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.

XI. Inclusive 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

XII. Grading Scales

A. Graded Items (total points = 480 pts)

Item	Points
Quizzes (on Fridays)	100
Attendance	20
Reading Assignments	30
In-class questions (TopHat)	30
1st Exam	100
2nd Exam	100
3rd Exam	100

B. Grading Scale

Grade	Percentage	Points Accumulated
A	100 - 90%	432
B	89.9 - 80%	384
C	79.9 - 70.0%	336
D	69.9 - 60.0%	288
F	Below 60.0%	Below 288

C. **Reading Assignments** will be available in Blackboard Learn (<http://mdc.blackboard.com>) on Mondays at (9:50AM) and their deadline will always be 8:00AM on Wednesdays unless otherwise stated. A new set Reading Assignments will be available every Monday at 9:50AM.

D. **Exams**: Three 100 points exams will be administrated, and their corresponding dates are listed on the tentative schedule of the last page of this syllabus. No scantrons are needed. Exams are semi-cumulative (exam 2 will contain material from exam1, and exam 3 will contain material from exam 2).

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

E. **Quizzes**: During the first 20 minutes of each Friday's meeting, semi-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.

XIII. Incomplete Grades and Withdrawls

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 March 16th, 2017. Keep in mind that a "W" grade will be permanent in your grade transcripts, and constitute an attempt for the course.

XIV. Tentative Course Schedule

Note: The tentative course schedule may change at the discretion of the professor

Date	Day	Week	Topic	Chapter	Assessment.Due
2017-01-04	Wed	W1	Course Intro, Install Apps	NA	NA
2017-01-06	Fri	W1	Intro to Biology	1	NA
2017-01-09	Mon	W2	Intro to Biology	1	NA
2017-01-11	Wed	W2	Intro to Biology	1	ReadAssign1
2017-01-13	Fri	W2	Intro to Biology	1	Quiz1
2017-01-16	Mon	W3	No Class (Marting Luther King)	NA	NA
2017-01-18	Wed	W3	Chemistry	2	ReadAssign2
2017-01-20	Fri	W3	Chemistry	2	Quiz2
2017-01-23	Mon	W4	Chemistry	2	NA
2017-01-25	Wed	W4	Chemistry	2	ReadAssign3
2017-01-27	Fri	W4	Chemistry	2	Quiz3
2017-01-30	Mon	W5	Biological Molecules	3	NA
2017-02-01	Wed	W5	Biological Molecules	3	ReadAssign4
2017-02-03	Fri	W5	Biological Molecules	3	Quiz4
2017-02-06	Mon	W6	Biological Molecules	3	NA
2017-02-08	Wed	W6	Biological Molecules	3	NA
2017-02-10	*Fri	*W6	*Exam 1 (W1 to W6)	*NA	*Exam1
2017-02-13	Mon	W7	Review Exam 1	NA	NA
2017-02-15	Wed	W7	Components of the Cell	4	ReadAssign5
2017-02-17	Fri	W7	Energy, Enzymes, Cell Transport	5	Quiz5
2017-02-20	Mon	W8	No class (President's Day)	NA	NA
2017-02-22	Wed	W8	Energy, Enzymes, Cell Transport	5	ReadAssign6
2017-02-24	Fri	W8	Energy, Enzymes, Cell Transport	5	Quiz6
2017-02-27	Mon	W9	Cellular Respiration	6	NA
2017-03-01	Wed	W9	Cellular Respiration	6	ReadAssign7
2017-03-03	Fri	W9	Cellular Respiration	6	Quiz7
2017-03-06	Mon	W10	Cellular Respiration	6	NA
2017-03-08	Wed	W10	Photosynthesis	7	ReadAssign8
2017-03-10	Fri	W10	Photosynthesis	7	Quiz8
2017-03-13	Mon	W11	Photosynthesis	7	NA
2017-03-15	*Wed	*W11	*Exam 2 (W1 to W 11)	*NA	*Exam2
2017-03-17	Fri	W11	Review Exam 2	NA	NA
2017-03-20	Mon	W12	Genetics/Inheritance	8,9	ReadAssign9

Date	Day	Week	Topic	Chapter	Assessment.Due
2017-03-22	Wed	W12	Genetics/Inheritance	8,9	NA
2017-03-24	Fri	W12	Genetics/Inheritance	8,9	Quiz9
2017-03-27	Mon	W13	Genetics/Inheritance	8,9	NA
2017-03-29	Wed	W13	Molecular Genetics/Biotech	10	ReadAssign10
2017-03-31	Fri	W13	Molecular Genetics/Biotech	10	Quiz10
2017-04-03	Mon	W14	Molecular Genetics/Biotech	11	NA
2017-04-05	Wed	W14	Molecular Genetics/Biotech	11	ReadAssign11
2017-04-07	Fri	W14	Evolution	13	Quiz11
2017-04-10	Mon	W15	Evolution	13	NA
2017-04-12	Wed	W15	Evolution	13	ReadAssign12
2017-04-14	Fri	W15	Origin of Species	14	Quiz12
2017-04-17	Mon	W16	Origin of Species	14	NA
2017-04-19	Wed	W16	Origin of Species	14	NA
2017-04-21	Fri	W16	Origin of Species	14	Quiz13
2017-04-24	Mon	W17	Review on your own	NA	NA
2017-04-26	Wed	W17	Review on your own	NA	NA
2017-04-28	*Fri	*W17	*Exam3 (Final Exam)	*NA	*Exam3