

UC Riverside – BIOLOGY 005A – Spring, 2023 – UC Online section

DRAFT SYLLABUS

Introduction to Cell and Molecular Biology

Class: M W F 1pm-1:50pm (Online/Asynchronous)

Discussions: W Th 4pm and 5pm (Online/Synchronous)

Prof. Morris Maduro (mmaduro@ucr.edu)

| Week | Day | Dates | Reading* | Topics (Notes provided on Canvas) |
|-------|---|----------------|--|--|
| 1 | | Apr 3 – 7 | Ch. 2, 3 | (1) Cell Theory, atoms, bonding; (2) Water; (3) Carbon, functional groups |
| 2 | | Apr 10 – 14 | Ch. 4, 5 | (4) Biological macromolecules: Carbohydrates, Lipids, Proteins, Nucleic Acids |
| 3 | | Apr 17 – 21 | Ch. 7 | (5) Membrane structure and function |
| | F | Apr 21 | MIDTERM 1, counts 16% of grade, covers Topics (1)-(4) | |
| 4 | | Apr 24 – 28 | Ch. 6, 8 | (6) Cell structure; (7) Metabolism: thermodynamics; enzymes |
| 5 | | May 1 – May 5 | Ch. 9 | (8) Cellular Respiration |
| 6 | | May 8 – 12 | Ch. 10, 16 | (9) Photosynthesis; (10) DNA as the genetic material |
| | F | May 12 | MIDTERM 2, counts 16% of grade, covers Topics (5)-(8) | |
| 7 | | May 15 – 19 | Ch. 16 | (11) DNA replication, PCR; (12) Life Cycles, Mitosis, Meiosis |
| 8 | | May 22 – 26 | Ch. 13, 14, 15 | (13) Monohybrid and Dihybrid Crosses (14) Sex Linkage and Chromosomal Linkage |
| 9 | | May 29 – Jun 2 | Ch. 17, 18 | (15) Transcription; (16) Translation; (17) Mutations |
| | F | June 2 | MIDTERM 3, counts 16% of grade, covers Topics (9)-(14) | |
| 10 | | Jun 5 – Jun 9 | Ch. 47 | (18) Principles of Development; (19) Genetic Testing; (20) SARS-CoV-2 |
| Final | FINAL EXAM, 27% of grade, covers all topics, emphasis on (15)-(20) Date/Time to be announced | | | |

Prof. Maduro supplies his notes as PDF file on Canvas and most students will be fine with these. *Chapters are from the optional textbook, *Campbell Biology* 12th ed. An alternative is [Biology by OpenStax](#) (free).

The main course content is asynchronous as a series of short videos through YuJa via Canvas. The videos contain questions for credit. Videos remain accessible until the end of the course but may not be accessible during exams. When exams/quizzes are not taking place, students may interact with Prof. Maduro via online office hours that will take place in the section 030 class time (MWF 1pm-1:50pm) or by appointment.

Exams are multiple-choice covering the notes and videos. Questions test for understanding, not just memorization. Questions are designed to be sure that online resources like Chegg and ChatGPT are unable to provide answers. **Because of the open-book nature of online exams, questions may be more difficult than in the regular course. Posting of any exam questions to a shared drive or publicly accessible website, during the exam or at any time afterwards, constitutes Academic Misconduct.** Violators are reported to [student conduct](#) and if found responsible, the grade will be reduced or turned into a non-passing grade, even if found responsible after the course is over. If an exam is missed with a documented medical excuse for the student, arrangements will be made to take an alternate exam.

Attendance of Online Discussions is mandatory. Excused absences are granted only for documented medical reasons which must be sent to Prof. Maduro within one week of the missed Discussion. If an excused absence is granted, the Discussion points will be taken out of the reduced maximum number and scaled to a point total /10. Students missing more than three discussions, failing to do many videos on time, or deliberately missing exams, face a further reduction in their final grade.

Exams occur online through Canvas. Questions will be multiple choice presented **one-at-a-time with no backtracking**. Many sample exam questions will be provided.

Some of the details of the course may change in response to situations as they arise.

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| <p>Score calculations (subject to modification): Midterm Exams* – 16% x 3 = 48% total Final Exam* – 27% Discussion – 10% Videos – 15%** *A minimum of 35%, taken by averaging all four exam scores, is required to pass the course. **Videos contain questions and there may be additional quizzes during the course.</p> | <p>At the end of the year, the final cutoffs will be used to determine the final letter grades. These will be determined by the distribution of scores; performance in the exams; evidence of course content appearing on public websites, and collaboration outside of what is permitted; and assignment of final grades to be consistent with prior years. Typically, the average grade will be between a B- and a B, and 10-12% of students will receive an A or A-.</p> |
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Grades assigned at the end of the course are final. The deadline for grade inquiries is the end of the next academic quarter.