

Rhode Island College and TIMES² ACADEMY

Early Enrollment Program

Syllabus: Biology 112: Introduction to Biology II (4 credits)

Instructor: Mark Fontaine, Ed.D

Spring 2018

Course Description: Emphasis is on organismal and ecological levels of organization.

Required Text: Campbell Biology 10th Edition by Reece, Urry, Cain, et al: Pearson publishing

Course Requirements: Students taking Biology 112 in the spring must successfully complete Biology 111 in the fall. Topics covered include: protozoology, phycology, mycology, botany, zoology, and environmental science. Laboratory exercises are designed to expose students to key topics and show real world applications of those concepts. Labs will mirror those offered at RIC as much as possible.

The course is delivered as a combination of lectures, labs, independent work, and collaborative projects. Students are expected to read and take notes on chapters prior to the beginning of the unit. Students will be prompt, responsible, and respectful regarding class time and each other. Assignments not turned in on time will receive no credit. Assignments assigned when a student is legitimately absent will be due within 5 days of the student's return. Extended absences will be handled on an individual basis.

Grading Policy:

1. Each assignment is given a point value based on the amount of student effort needed to complete the task. For example:
 - a. short in-class assignments where students can use their notes are worth 5 points
 - b. homework assignments are worth 5-15 points
 - c. labs are worth 15-20 points
 - d. tests are worth 100 points
2. The point value of each assignment will be announced when the assignment is given.
3. If a student is absent, he or she will have 5 school days to make up any missed work. It is the student's responsibility to inquire about what was missed.
4. The student's average will be calculated as a percentage of the total points possible.
5. The Three Exams will each count as 75% of the course grade

UNIT ONE: PROTISTA

1. Development of eukaryotic cells from prokaryotic cells
2. Animal-like protists (Mastigophorans, Sarcodina, Sporozoa, Ciliophora)
3. Plant-like protists (Dinoflagellates, Diatoms, Green Algae, Brown Algae)
4. Alternation of Generations between a gametophyte and sporophyte
5. Fungal-like protists (slime molds, water molds)

UNIT TWO: FUNGI

1. Define basic fungal terms
2. Life cycles of Zygomycetes, Ascomycetes, Basidiomycetes and Deuteromycetes
3. Lichens
4. Mycorrhizae

UNIT THREE: PLANTS

1. Characteristics of members of the plant kingdom
2. Evidence that plants evolved from the Phylum Chlorophyta
3. The life cycles of moss, ferns, conifers and flowers
4. Plant tissues
5. Anatomy and physiology of herbaceous roots, stems and leaves
6. Conversion of primary herbaceous growth to woody secondary growth
7. Plant hormones
8. Plant tropisms
9. Photoperiodism
10. Vascular tissue operation

UNIT FOUR: ANIMALS

1. Characteristics of animals
2. Anatomy, physiology and evolutionary history of:
 - a] sponges
 - b] hydra, jellyfish
 - c] flatworms
 - d] roundworms
 - e] earthworms and leeches
 - f] snails, clams, squid
 - g] spider, lobster, grasshopper
 - h] starfish
 - i] simple chordates
 - j] fish
 - k] amphibians
 - l] reptiles
 - m] birds
 - n] mammals

UNIT FIVE: ENVIRONMENTAL SCIENCE

1. Basic ecological term definitions
2. Organismal ecology
3. Population ecology
4. Community ecology
5. Ecological succession
6. Ecosystem ecology
7. Biogeochemical cycles
8. Biomes
9. Man's effect on the biosphere

SEMESTER-LONG UNIT:

1. Long-term scientific/engineering investigation (associated with participation in RISEF)
2. Current events and advances in Biology