# 8/11/2020

# brcc keystone logo

Baton Rouge Community College

*Academic Affairs Master Syllabus*

Date Approved: 11 September 2020

Term and Year of Implementation: Fall 2020

**Course Title:** Elements of Biochemistry

**BRCC Course Rubric:** BIOL 2833

**Previous Course Rubric**: BIOL 283

**Lecture Hours per week-Lab Hours per week-Credit Hours**: 3-0-3

**Per semester: Lecture Hours-Lab Hours-Instructional Contact Hours**: 45-0-45

**Louisiana Common Course Number:**

**CIP Code:** 26.0202

**Course Description:** Introduces fundamental principles and theories of biochemistry and representative classes of organic compounds including nomenclature, reactions and mechanisms in the human body. Designed for food sciences, agriculture, and allied health majors.

**Prerequisites:**  CHEM 2213 (or CHEM 220) with grade ‘C’ or better

**Co-requisites:** None

**Suggested Enrollment Cap:** 30

**Learning Outcomes.** *Upon successful completion of this course, the students will be able to:*

1. Explain the characteristics of common chemical compounds important in animal and human biochemistry including; carbohydrates, lipids, proteins, and nucleic acids.

2. Explain the characteristics of chemicals which control biological processes in animals and humans, including enzymes and hormones.

3. Discuss the main biochemical processes involved in animal/human metabolism of carbohydrates, lipids, proteins and nucleic acids.

4. Discuss the main biochemical processes involved in photosynthesis.

**Assessment Measures.** Assessment of all learning outcomes will be measured using the following methods:

1. Administration of unit exams during the semester and a comprehensive final exam at the end of the semester.

2. Instructor-designed assignments including, but not limited to, written and oral assignments, projects, homework, and quizzes. All assignments will be graded using an instructor-designed rubric.

**Information to be included on the Instructor’s Course Syllabi:**

* ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.
* ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor’s and/or the department’s policy for make-up work. For example in a speech course, “Speeches not given on due date will receive no grade higher than a sixty” or “Make-up work will not be accepted after the last day of class”.
* ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.
* ***General Policies*:** Instructors’ policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.
* ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.
* ***Safety Concerns:*** In some courses, this may be a major issue. For example, “No student will be allowed in the lab without safety glasses”. General statements such as, “Items that may be harmful to one’s self or others should not be brought to class”.
* ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

**Expanded Course Outline:**

1. Introduction to major chemical compounds of the human body

2. Water, Acids/Bases and Buffers

3. Amino Acids and Peptides

4. Protein Structure and Functions

5. Enzymes

6. Bioenergetics

7. Carbohydrates

8. Glycolysis

9. TCA Cycle

10. Electron Transfer

11. Carbohydrate Metabolism

12. Photosynthesis

13. Lipids and Membranes

14. Lipid Metabolism

15. Organic Bases and Nucleic Acids

16. Biosynthesis of Nucleic Acids/Proteins