THE UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE
FACULTY SENATE

Senate Document Number 7618S
Date of Senate Approval 05/03/18

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Statement of Faculty Senate Action:

APC Document 68 (CHEM): Change the description of CHEM 323, Foundations of Biochemistry; Change title and description of CHEM 437, Modern Biochemistry

1. **Delete:** On page 99, the description for **CHEM 323, Foundations of Biochemistry:**

   Designed to approach the fundamentals of biochemistry from a chemical perspective, this course examines the structure and function of biological systems such as proteins, carbohydrates, and lipids; develops an understanding of the kinetics of biological reactions including metabolism and enzyme catalysis. It expands the study of biological equilibria and thermodynamics through the discussion of the properties of aqueous solutions, thermodynamics of enzyme binding and recognition, and oxidation and reduction processes. Prerequisites: CHEM 232, 233. Fall.

   Add: On page 99, in place of deleted entry:

   Designed to approach the fundamentals of biochemistry from a chemical perspective, this course examines the structure and function of biological molecules such as nucleic acids, proteins, carbohydrates, and lipids. It introduces the principles of molecular recognition, enzyme catalysis, enzyme kinetics, and metabolism and develops an understanding of biological equilibria, redox, and energy transduction through the discussion of core metabolic pathways and oxidative phosphorylation. Prerequisites: CHEM 232, 233. Fall.

   Impact: None anticipated.

   Rationale: The changes are editorial to better reflect the course content.

2. **Delete:** On page 101, the entry for **CHEM 437, Modern Biochemistry:**

   437 Modern Biochemistry (3)
   An in depth exploration of reaction kinetics and catalytic mechanisms of enzymes; metabolism; the expression and transmission of genetic information; and biological structural analysis with an emphasis on current research in the field. Prerequisites: CHEM 323, 331. Spring.

   Add: On page 101, in place of deleted entry:

   437 Biophysical Chemistry (3)
   Takes a deeper look into the dynamic structures and myriad functions of proteins, nucleic acids, and lipids from a quantitative, physical perspective. Topics may include protein folding, structural dynamics, reaction energetics, energy transduction, membrane transport, molecular processes of genome maintenance and expression, and/or abiogenesis. The course will emphasize current biochemical and biophysical methodology and analysis of primary literature. Prerequisites: CHEM 323, 331. Spring.

Impact: None anticipated.

Rationale: The updated title and description better reflect the course content and physical chemistry emphasis of the course, which justifies CHEM 331 as a prerequisite. Even though the new course description is more detailed and the title is more specific, the overall content areas and focus of the course is nearly identical to current and former semesters of CHEM 437. Therefore, a new course number is not needed. Any student who earned credit for CHEM 437 prior to the title and description change would still apply that credit to meet the 400-level CHEM credit hour requirements for the BS and BA chemistry majors and would not be able to take the course for credit again under the new title.