

**Biochemistry lecture**  
CHEM 3500 section 02, Fall 2018, CRN 83336

**Instructor:** Prof. Thomas Leeper, SL3006, [tleeper@kennesaw.edu](mailto:tleeper@kennesaw.edu), (470) 578-2258

**Office Hours:** Mondays and Thursdays 11am-noon or by appointment: <https://thomas-leeper.youcanbook.me>

**Supplemental Instructor:** Mr. Garrett Garner, [ggarner4@students.kennesaw.edu](mailto:ggarner4@students.kennesaw.edu)

**Location:** Clendenin Building 2008

**Days & Times:** MWF 10:00 – 10:50am

**Prerequisite:** CHEM 3362 (Modern Organic Chemistry II) with minimum grade of C.

**Description:** Biochemistry of amino acids, carbohydrates, lipids, and nucleic acids: structure/function relations. Enzymology. Cofactors. Cellular Metabolism. Clinical physiology.

**Textbook:** *Biochemistry, A Short Course*; Tymoczko *et al.*, 3<sup>rd</sup> edition,\* Chapters 1-40.

\*-you are welcome to use the older 2<sup>nd</sup> edition, but the order of content may have changed between editions and it is your responsibility to reconcile the two editions.

**Disability:** Any student with a documented disability needing academic adjustments is requested to notify the instructor as early in the semester as possible. Verification from KSU disAbled Student Support Services is required (see Student Center room 267). All discussions will remain confidential.

**Student athletes:** Student athletes are required to contact their course instructor during the first week of class with their schedule of planned events that are away from campus.

**Academic honesty:** The policy on academic honesty is given in the college catalog and the student handbook. It is summarized below. Students failing to adhere to this policy will be held accountable. Cheating--in any form--is considered a serious offense and will be treated as such.

**Academic Integrity Statement (Required):** Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section II of the Student Code of Conduct addresses the university's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement. See also <http://www.kennesaw.edu/scai/content/ksu-student-code-conduct>.

**Disruption of Campus Life Statement:** It is the purpose of the institution to provide a campus environment, which encourages academic accomplishment, personal growth, and a spirit of understanding and cooperation. An important part of maintaining such an environment is the commitment to protect the health and safety of every member of the campus community. Belligerent, abusive, profane, threatening and/or inappropriate behavior on the part of students is a violation of the Kennesaw State University Student Conduct Regulations. Students who are found guilty of such misconduct may be subject to immediate dismissal from the institution. In addition, these violations of state law may also be subject to criminal action beyond the University disciplinary process.

**Schedule:**

August 13<sup>th</sup>

August 15<sup>th</sup> and 17<sup>th</sup>

August 20<sup>th</sup>

August 22<sup>nd</sup> to 24<sup>th</sup>

August 27<sup>th</sup>

August 29<sup>th</sup> and 31<sup>st</sup>

Syllabus & Chapter 1 (Introduction and review)

Chapter 2 (pH, pKa, and water)

Chapter 3 (Amino acids and primary structures of proteins)

Chapter 4 (Secondary and tertiary structure)

Chapter 9 (Globin proteins and structure visualization).

Chapter 5 (Protein purification and analysis methods).

September 3<sup>rd</sup>

**September 5<sup>th</sup>**

Sept. 7<sup>th</sup>

Sept. 10<sup>th</sup> and 12<sup>th</sup>

Sept. 14<sup>th</sup> and 17<sup>th</sup>

Sept. 19<sup>th</sup>

Sept. 21<sup>st</sup> and 24<sup>th</sup>

Sept. 26<sup>th</sup>

Sept. 28<sup>th</sup>

**Oct 1<sup>st</sup>**

Oct. 3<sup>rd</sup>

Oct. 3<sup>rd</sup>

Oct. 5<sup>th</sup> and 8<sup>th</sup>

Oct. 10<sup>th</sup>

Oct. 12<sup>th</sup>

Oct. 15<sup>th</sup> and 17<sup>th</sup>

Oct. 19<sup>th</sup>

Oct. 22<sup>nd</sup>

Oct. 24<sup>th</sup>

Oct. 26<sup>th</sup>

Oct. 29<sup>th</sup> and 31<sup>st</sup>

November 2<sup>nd</sup>

November 5<sup>th</sup>

November 7<sup>th</sup>

Nov 9<sup>th</sup> to 14<sup>th</sup>

**Nov. 16<sup>th</sup>**

Nov. 19<sup>th</sup> to 23<sup>rd</sup>

Nov. 26<sup>th</sup>

Nov. 28<sup>th</sup>

Nov. 30<sup>th</sup>

December 3<sup>rd</sup>

**December 10<sup>th</sup>**

*No Class – Labor Day holiday, pre-exam review session online.*

**Exam 1 (Chapters 1-5, 9).**

Chapter 6 (Enzyme catalysis and thermodynamics)

Chapter 7 (Kinetics)

Chapter 8 (Enzyme inhibitors, regulation, and drugs).

Chapter 10 (Carbohydrates)

Chapter 11 (Lipid structures)

Chapter 12 (Membrane function and neurophysiology)

TBD (protein biophysics, makeup, or pre-exam review session)

**Exam 2**

*Last day to withdraw without penalty*

Chapter 14 & 15 (digestion and energy molecules)

Chapter 16 & 17 (Glycolysis & Gluconeogenesis)

Chapter 18 (Fates of pyruvate)

Chapter 19 (Citric Acid Cycle)

Chapter 20 & 21 (Electron Transport Chain & Proton motive force)

Chapter 22 & 23 (Photosynthesis)

Chapter 24 & 25 (Glycogenolysis and synthesis)

Chapter 26 (Pentose Phosphate Pathway)

Chapter 27 (Fatty acid degradation)

Chapter 28 & 29 (Lipid synthesis)

Chapter 30 (Amino acid degradation & the Urea Cycle)

Chapter 31 (Amino acid synthesis)

Chapter 32 (Nucleotide metabolism)

TBD (Ch13: biochemical signaling, makeup, or pre-exam review)

**Exam 3**

*Fall Break*

Chapter 33 (Nucleic acid structure)

Chapter 34 & 35 (DNA replication and repair)

Chapters 36 to 38 (Transcription)

Chapters 39 & 40 (Translation)

**Final Exam (10:30 am to 12:30 pm)**

### **Grading Policy:**

80% of grade determined by 3 unit exams and the final (20% each)

6% quizzes and attendance

10% homework

4% group problem solving

Final examination can be substituted for one or more (if multiple missed) exams.

**Grading scale:** A (90.00%), B (78.00%), C (65.00%), D (50.00%), F (<50%).

**Rounding up?** Not usually. However, if you are within 1% of the transition then I will consider rounding your grade to the next level if you worked all the homework assignments, attended nearly every class, came to multiple office hours seeking my help, and did better on the final exam than your overall grade.

### **Exam makeup policy: There will be no exam "makeups."**

If an exam is missed then the grade from the final exam can be used in place of the missed exam. For approved university activities, e.g. military service or athletic events, exam proctoring proximal to the event by the responsible advisor, typically a coach or CO, is *possible* if arrangements are made well in advance.