Introduction to Biochemistry
CHE-244
Fall - 2011

Course Description
CHE-244 - Introduction to Biochemistry,
Two lectures are offered twice per week - Monday and Wednesday 4:35-5:50 pm
Old Gym Rm. 108B
3 hours / 3 credits
This introductory course emphasizes the study of the structure, reactions, and syntheses of biological compounds; mechanism of enzyme-catalyzed reactions and biochemical aspects of genetics.

Prerequisites
Successful completion of CHE 120 - Essentials of Organic Chemistry Lectures

Place of course in degree program
This course is a degree program requirement for the B.S. in Dietetics, Food and Nutrition

Academic or Learning Objectives
Student Learning Outcomes: After completing this course students should be able to:
• Describe the structure(s) of a typical, amino-acid, lipid, nucleotide and sugar
• Understand the factors that influence the activity of proteins
• Understand the kinetics of enzyme activity and how this can be modified
• Describe typical catabolic and anabolic pathways in eukaryotic cells
• Understand how ATP is produced in the cell and how redox and energy levels in the cell are regulated
• Describe how DNA is transcribed and RNA translates into proteins and how proteins may be modified after translation

Required Readings

Academic Integrity
While honest scholarship is time-consuming and often requires hard work, it is also the primary process by which students learn to think for themselves. Faculty members must teach respect for methods of inquiry
within the various disciplines and make assignments that will encourage honest scholarship; students in
turn must uphold a standard of honesty within the College, thereby affirming the value and integrity of their
Lehman degree. The following definitions and procedures govern cases involving undergraduate student
work.

The most common forms of academic dishonesty are cheating and plagiarism. Cheating is the use or
attempt to use unauthorized material, information, notes, study aids, devices, or communication during an
academic exercise (for example, using unauthorized books, papers, or notes during an examination; or
procuring, distributing, or using unauthorized copies of examinations). Plagiarism means the failure to give
credit for the source of another's words or ideas, including but not limited to books, articles, interviews, and
multimedia and electronic sites, or—as in the use of borrowed or purchased papers—passing off another
person's work as one's own. (Section 213-b of the New York State Education Law prohibits the sale of term
papers, essays, and research reports to students enrolled in a college.) Common forms of cheating and
plagiarism are highlighted in this Bulletin.

Academic dishonesty is a serious violation of the accepted values of the College. When questions of a
breach of academic integrity arise, instructors will inform the students of their suspicions and provide the
student with a Faculty Report Form for Incidents of Suspected Academic Dishonesty. The instructor must
remember that a student's failure to respond to charges of academic dishonesty is not in and of itself an
indication of guilt. The report will include an explanation of the incident, the instructor's intended academic
sanction, and an indication whether or not the instructor is recommending that the College undertake
disciplinary proceedings pursuant to Article 15 of the Board of Trustees Bylaws.

Academic sanctions may include but are not limited to the following:

1. a grade of F for the course.

Disciplinary procedures are governed by Article 15 of the Board of Trustees Bylaws. In the event the
student is found guilty of academic dishonesty by a Faculty-Student Disciplinary Committee, penalties that
may be imposed include but are not limited to: 1) suspension from the College or 2) expulsion from the
College. Although the Office of the Vice President for Student Affairs will be guided by the
recommendation of the instructor, it reserves the right to seek disciplinary sanctions under the disciplinary
procedures.

Should the instructor become convinced that the suspicions are unfounded, no further action will be taken
and the Faculty Report Form will be destroyed. If the suspicions are founded and if both the student and the
instructor are willing, they may agree upon a resolution. Subsequently the instructor will present the
completed Faculty Report Form, including the charges and resolution, to the department chair who must
forward the appropriate copies of the form to the Office of Academic Standards and Evaluation, and the
Office of the Vice President for Student Affairs. If no agreement is reached, the instructor must allow a
student to complete all coursework until the following appeal process has been completed.

- The first step in the appeals process is for the instructor to file the Faculty Report Form with the
chair. If the term is completed, the instructor may assign a grade that reflects the intended sanction
but must also provide a final grade that does not include the intended sanction if the charges are
not upheld.
- If the charges are for cheating, then the chair will submit the charges to the Office of the Vice
President for Student Affairs. If the charges are for plagiarism, the chair will appoint a committee
of three Lehman College faculty members, which will adjudicate the matter within three weeks by
majority vote. If the chair is the instructor in question, the senior member of the department
Personnel and Budget Committee will act for the chair. The committee will provide written
notification of its decision to the chair, who will forward this recommendation and the Faculty
Report Form to the Office of the Vice President for Student Affairs.
The Office of the Vice President for Student Affairs will review the recommendations of the instructor and the committee for possible disciplinary sanctions and provide a written notification of its decision to the department chair, the student, the instructor, and the Office of Academic Standards and Evaluation. Either the instructor or the student has the right, within three weeks of receipt of notification, to appeal the department decision in writing to the Committee on Admissions, Evaluation, and Academic Standards, which will act as adjudicator of last resort. Should any part of the three-week period fall outside the regular semester, the first three weeks of the next regular semester shall apply.

The Office of Academic Standards and Evaluation will keep all records of such proceedings on file until the student's graduation, at which time they will be destroyed.

As a result of a second upheld charge of academic dishonesty, disciplinary procedures will be pursued by the Office of the Vice President for Student Affairs as governed by the procedures under Article 15 of the Board of Trustees' Bylaws.

The following definitions and examples are adapted from the CUNY Policy on Academic Integrity.

**Cheating** is the unauthorized use or attempted use of material, information, notes, study aids, devices, or communication during an academic exercise. Examples of cheating include, but are not limited to the following:
- Copying from another student during an examination or allowing another student to copy your work.
- Unauthorized collaboration on a take-home assignment or examination.
- Using illegal notes during a closed-book examination.
- Taking an examination for another student, or asking or allowing another student to take an examination for you.
- Changing a graded exam and returning it for more credit.
- Submitting substantial portions of the same paper for more than one course without informing each instructor.
- Preparing answers or writing notes in a blue book (exam booklet) before an examination.
- Allowing others to research and write assigned papers or do assigned projects, including the use of commercial term paper services.
- Giving assistance to acts of academic misconduct or dishonesty.
- Fabricating data (all or in part).
- Submitting someone else's work as your own.
- Unauthorized use during an examination of any electronic devices, such as cell phones, palm pilots, computers, or other technologies to send or retrieve information.

**Plagiarism** is the act of presenting another person's ideas, research, or writings as your own. Examples of plagiarism include, but are not limited to the following:
- Copying another person's actual words without the use of quotation marks and citations.
- Presenting another person's ideas or theories in your own words without acknowledging the source.
- Using information that is not common knowledge without acknowledging the source.
- Failing to acknowledge collaborators on assignments.
- Purchasing or downloading term papers online.
- Paraphrasing or copying information from the Internet without citing the source.
- "Cutting and pasting" from various sources without proper attribution.

**Course topics**
The following topics will be covered:
*Basic Concepts of Biochemistry, Structures of Amino-acids, Lipids, Nucleotides and sugars Water and acids/bases. Protein structure and function – enzyme kinetics and
allosteric regulation. Metabolism in cells, pathways and synthesis of compounds, metabolic pathways and regulation, DNA replication, Transcription and translation

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