Syllabus

Name of Instructor: ____________________________________ Office: ____________
Office Hours: ____________________________________________________________

Required Texts:
(Chem. 57, 57.1 & 757.1G) Biochemistry, 3rd Edition (with CD ROM Study Guide included)
Christopher K. Mathews, K.E. van Holde and Kevin G. Ahern
ISBN No. 0-8053-3066-6

(Chem. 57) Experimental Biochemistry
Lesley Davenport and Daniel C. Vellom
(Available during the first laboratory class)

Required Items: Scientific Calculator
(Chem 57, 57.1 & 757.1G)

Recommended Text:
(Chem. 57, 57.1 & 757.1G) Biochemical Calculations: How to Solve Mathematical
Problems in General Biochemistry, 2nd Edition
Irwin H. Segel
J.Wiley, 1976
ISBN No. 0-471-77421-9

Recommended Items: Metabolic Pathways Poster, 21st Edition
(Chem 57, 57.1 & 757.1G) Donald E. Nicholson
International Union of Biochemistry and Molecular Biology, 2000
Sigma Chemical Company
(Available from your instructor)

Counseling: Health Professions Counselor - Dr. McEntee (1305J)
PhD Graduate Programs:
Chemistry - Prof. Ciszkowska (359NE)
Biochemistry - Prof. Davenport (344NE)

Check the bulletin board outside the Chemistry office (359NE) for their office hours and the
office hours of your lecturer and laboratory instructor.

Drop Dates: Monday, September 17th, 2001 is the last day to drop a course without a
grade.
Tuesday, November 13th, 2001 is the last day to apply for withdrawal from
a course with a W (non-penalty) grade.

Grading: Your final grade will be determined as follows:
Chem. 57 3 exams (60%); laboratory grade (40%)
Chem. 57.1 3 exams (75%); term paper (25%)
Chem. 757.1 G 3 exams (75%); term paper (25%)
**Reading and Problem Assignments:**

As you read the text *Biochemistry (referred to as MVH below)*, make sure that you understand the concepts introduced within the chapter. Read and work your way through each assigned chapter, after which, it is recommended that you also attempt the problems assigned from the text: *Biochemical Calculations (referred to as IS below)*. In addition you may want to quiz yourself on the assigned material using the *Electronic (CD-ROM) Study Guide* which accompanies your *Biochemistry* textbook. Note, that while the instructor may not cover the assigned problems in class, YOU are responsible for completing them. See your instructor during office hours for extra help with the assigned course material and/or problems as required.

**Time and Topic Sequence:**

**Week 1:** Introduction

*MVH*
- Chapter 1 (The Scope of Biochemistry).
- Chapter 2 (The Matrix of Life: Weak Interactions).
- Chapter 3 (The Energetics of Life).

**Weeks 2-5:** Amino Acids, Proteins and Enzymes

*MVH*
- Chapter 5 (Introduction to Proteins: The Primary Level of Protein Structure).
- Chapter 6 (The Three-Dimensional Structure of Proteins).
- Chapter 7 (Protein Function and Evolution).
- Chapter 8 (Proteins in Motion: Contractile Systems and Molecular Motors).
- Chapter 9 (Enzymes: Biological Catalysts).

*IS*
- Read pages: 1-69 (for review only).
- Read and study pages: 69-91; 94-123; 208-236; 237-244; 246-261; 266; 278-283; 303-318.
- Work problems: 1; 3; 4; 12; 14; 15 from Chapter 2 and 1; 2; 3; 7; 9-14; 17; 19; 33 from Chapter 4.

**Weeks 6-8:** Nucleic Acids

*MVH*
- Chapter 4 (Nucleic Acids).
- Chapter 24 (Information Copying: Replication).
- Chapter 25 (Information Restructuring: Restriction, Repair, Recombination, Rearrangement, and Amplification).
- Chapter 26 (Information Readout: Transcription).
- Chapter 27 (Information Decoding: Translation).
- Chapter 28 (Eukaryote Genes and Their Expression, pages 1068-1103).

*IS*
- Read and study pages: 135-141.
- Work problems: 30; 36; from Chapter 2.
Weeks 9-11: Carbohydrates

*MVH* Chapter 9 (Carbohydrates).
Chapter 12 (Introduction to Metabolism).
Chapter 13 (Carbohydrate Metabolism I: Anaerobic Processes in Generating Metabolic Energy).
Chapter 14 (Oxidative Processes: Citric Acid Cycle, pages 483-509).
Chapter 15 (Electron Transport, Oxidative Phosphorylation and Oxygen Metabolism).
Chapter 16 (Carbohydrate Metabolism II: Biosynthesis of Bacterial Cell Walls, pages 580-591).

*IS* Read and study: pages 123-129.
Work problems: 17; 19; 21 from Chapter 2.

Weeks 12-14: Lipids and Membranes

*MVH* Chapter 10 (Lipids, Membranes and Cellular Transport).
Chapter 21 (Cell-Cell Transmission, pages 783-790).
Chapter 19 (Lipid Metabolism II: Membrane Lipids, Steroids, Isoprenoids, and Eicosanoids).
Chapter 18 (Cholesterol Transport, pages 633-638).
Chapter 28 (Membrane Proteins; Protein Targeting in Eukaryotes, pages 1104-1110).
Chapter 23 (Metabolic Coordination, Metabolic Control and Signal Transduction, pages 849-868).

*IS* Read and study: pages 129-135.
Work problems: 25; 26; 27; from Chapter 2.

Important Dates:

*(Chem. 57, 57.1 and 757.1G)*
First Lecture Examination Thursday, October 4th, 2001 5:00 - 6:15 p.m.
Second Lecture Examination Thursday, November 8th, 2001 5:00 - 6:15 p.m.
Final Lecture Examination To be announced

*(Chem 57.1 and 757.1G only)*
Term Paper Due Date: Tuesday, December 4th, 2001 before 7:30 p.m.