Course Code *WS210*
3 Units
30 Hours

EMPEROR'S COLLEGE
MTOM COURSE SYLLABUS
BIOCHEMISTRY

Redmond, Michael
Fall 2018

COURSE DESCRIPTION

This course examines biochemical reactions in living systems, investigating functional groups, essential organic chemistry compounds, and metabolic pathways in eukaryotic cells. Biochemistry is foundational to understanding the chemical dynamics of physiology, nutrition, pharmacology and herbology.

LEARNING OBJECTIVES

The student will come to understand the organization and interaction of functional groups in biochemical reactions and will be able to understand the flow of metabolic pathways.

COURSE PREREQUISITIES

Chemistry

REQUIRED TEXTS

Chemistry and Life, 5th edition. Hills, Feigl, and Baum, Macmillan, New York, 1997

RECOMMENDED TEXTS

Organic Chemistry, 3rd edition,.Morrison and Boyd, Allyn and Bacon, Inc., New York, 1973

COURSE REQUIREMENTS

Out-of-Class Work
To successfully complete the program, students need to plan studying a minimum of 2 hours out-of-class for each academic in-class hour; and half an hour out-of-class for each hour of clinical training.

20%= Attendance and quizzes (Only 2 absences permitted)
40%=Mid-Term Examination
40%=Final Examination

GRADING SCALE: 100-90% A, 89-80% B, 79-70% C, 69% and below F

SPECIAL NOTES

Absence Policy: Separate from individual course requirements, ECTOM Students must attend no less than 80% of course hours to pass that class. Students who miss more than 2 classes in a 10 week course (1 class in a 7 week course) will earn an F in that course. Any two occurrences of late arrivals or early departures, of 15 minutes or more, will constitute as 1 absence.

CLASS ONE (The syllabus is subject to change at the discretion of the instructor.)
1. Introduction
2. Review
3. Hydrocarbons
4. Benzenes
5. Alcohols
6. Phenols

7. Ethers

Assignment: Hill, Chapter 13, 14, and special topic D & E

CLASS TWO
1. Aldehydes
2. Keytones
3. Carboxylic Acids
4. Esters 5. Amides

Assignment: Hill, Chapter 15, 16, and special topic F.

CLASS THREE
1. Amines and derivatives
2. Brain Amines and related drugs
3. Steroisomerism
4. Molecules to see and smell.

Assignment: Hill, Chapters 17,18 and special topic G and H.

CLASS FOUR
1. Monosaccharides
2. Disaccharides
3. Polysaccharides

Assignments: Hills, Chapters 19,

CLASS FIVE
1. Lipids
2. Fatty acids
3. Triglycerides
4. Waxes
5. Phospholipids
6. Glycolipids
7. Steroids
8. Hormones

Assignment: Hill, Chapters 20, and Special Topic I.

Midterm Examination (take home, due in one week)

CLASS SIX
1. Amino Acids
2. Peptide Bond, sequence, protein classification
3. Enzymes
4. Vitamins

Assignment: Hill, Chapters 21,22, and Special Tpoic J.

CLASS SEVEN
1. Nucleic Acids
2. Protein Synthesis

3. Viruses
4. Cancer

Assignments: Hill, Chapter 23, and Special topic k.

CLASS EIGHT
1. ATP
2. Embden-Meyerhof Pathway
3. Glycolosis and fermentation.

Assignments: Hill, Chapter 24.

CLASS NINE
1. Krebs Cycle
2. Electron Transport Chain
3. Oxidative phosphorolation.

Assignments: Hill, Chapter 25.

CLASS TEN
1. Fatty Acid oxidation
2. Glycerol Metabolism
3. Bioenergetics of fatty acid metabolism
4. Ketosis
5. Nitrogen Balance
6. Essential Amino Acids
7. Amino Acid Metabolism
8. Relationships among metabolic pathways.

Assignment: Hill, Chapters 26 and 27.

CLASS ELEVEN
Final Examination (NOT TAKE HOME)

REFERENCE MATERIAL

FACULTY INFO

Redmond, Michael
Please check with instructor during class to get updated contact info.
310.676.2209
Kampfwagen@sbcglobal.net

Michael Redmond has taught Western medicine courses to TCM students for many years. His previous clinical experiences include trauma, intensive care, anesthesia, and home health. Currently Redmond teaches several courses in the MTOM Program including Biology, Chemistry, Biochemistry, Western Physical Assessment, Anatomy and Physiology and Western Medical Terminology among others.