Grande Prairie Regional College

Dept. of Science & Technology

BC 2030

INTRODUCTORY BIOCHEMISTRY I
Course Outline
1999-2000

Instructor
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Course Description: This course will include material on the structure and chemistry of the cell; the structure and functions of amino-acids and proteins, enzyme kinetics, chemistry of carbohydrates, intermediary metabolism.

Pre-requisites: Chemistry 1010
Chemistry 1610 or Chemistry 2610
Chemistry 1630 or Chemistry 2630

Text-book: "Biochemistry" (2nd Edition)
Donald Voet and Judith G. Voet
John Wiley & Sons Inc. Publishers 1995

Lectures: Monday and Wednesday 1130 - 1250 hrs
J 229

Evaluation:

Assignments	10%
Mid-term Exam I	25%
Mid-term Exam II	25%
Final Exam	40%

Assignments: To aid preparation for exams, questions and problem sets will be assigned to students throughout the course. These must be completed and handed in at the time specified. Late assignments will not be marked.

BC 2030 - Lecture Schedule

Lecture	Topic	Reading
1	Introduction to the course	Ch. 1: sec 1, 2 & 3
2	Water, Acids and Bases I	Ch. 2
3	Water, Acids and Bases II	
4	Amino acids I	Ch. 4: sec 1
5	Amino acids II	Ch. 4: sec 3
6	Protein purification I	Ch. 5: sec 1 & 2
7	Protein purification II	
	chromatography	Ch 5: sec 3a, 3c & 3d
	electrophoresis	Ch.5: sec 4b & 4d
8	Molecular weight determination	Ch. 5: sec 4c & 3c
9	Primary structure of proteins I	Ch. 6: sec 1a - 1d
10	Primary structure of proteins II	Ch. 6: sec 1e - 1i
11	3D structure of proteins	Ch. 7: sec 4, 1, 3b, 5a
12	Protein folding	Ch. 8: sec 1a - 1c
13	Mid-term I	
14	Protein structure and function I	Ch. 9: sec 1 & 2
15	Protein structure and function II	Ch. 9: sec 2 & 3
16	Enzymes	Ch. 12: sec 1,2,3 & 5
17	Energy and reactions	Ch. 3: sec 3 & 4
18	Enzymes as catalysts I	Ch. 14: sec 1 & 3
19	Enzymes as catalysts II	Ch. 14: sec 3
20	Enzyme regulation	Ch. 9: sec 4
21	Introduction to metabolism	Ch. 15: sec 1 & 4
22	Energy changes in reactions	Ch. 3
		Ch. 15: sec 5 & 6
23	Carbohydrates	Ch. 10: sec 1 & 2b-d
24	Glycolysis I	Ch. 16: sec 1 & 2
25	Glycolysis II	Ch. 16: sec 3
26	Glycolysis III	Ch. 16: sec 4b & 5
27	Mid-term II	
28	Glycogen metabolism I	Ch. 17: sec 1 & 2
29	Glycogen metabolism II	Ch. 17: sec 3
30	Glycogen metabolism III	Ch. 17: sec 4
31	Citric Acid Cycle I	Ch. 19: sec 1 & 2
32	Citric Acid Cycle II	Ch. 19: sec 3, 4 & 5
33	Pentose Phosphate Pathway	Ch. 21: sec 4
34	Oxidative phosphorylation I	Ch. 20: sec 1 & 2
35	Oxidative phosphorylation II	Ch. 20: sec 3 & 4
36	Gluconeogenesis	Ch. 21: sec 1
37	Regulation of carbohygrate metabolism I	Ch. 25: sec 1 & 2
38	Regulation of carbohydrate metabolism II	Ch. 25: sec 3