Grande Prairie Regional College

Dept. of Science & Technology

BC 2050

INTRODUCTORY BIOCHEMISTRY II

Instructor

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Description: BC 2050 is a continuation from BC 2030 and includes material on the chemistry and metabolism of lipids, amino acids and nucleotides; structure and assembly of membranes; transport across membranes; the molecular biology of nucleic acids.

Pre-requisites: BC 2030

Transferability: University of Alberta - BIOCH 205
University of Calgary - Senior BCEM
University of Lethbridge - CHEM 3320

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

Other Resourses: BC 2050 web page (GPRC) (under construction)
http://www.gprc.ab.ca/courses_and_programs/biology/bc2050nf.htm

BIOCH 205 web page (University of Alberta)

Evaluation:

Mid-term Exam I	25%
Mid-term Exam II	25%
Final Exam	50%

Assignments: To aid preparation for exams, questions and problem sets may be assigned to students throughout the course. These will not be a part of the overall course evaluation, but students are advised to complete them.

BC 2030 - Topic Outline

	topic	readings in Voet & Voet
1	Structure and function of lipids	277-280, 662, 668
2	Fatty acid catabolism	668-73, 678-80
3	Fatty acid biosynthesis	680-87
4	Processing of fatty acids	687-90
5	Phospholipids	280-84, 713-22, 1287-90
6	Lipid transport	not covered in Voet & Voet
7	Sphingolipids and eicosanoids	282-84, 717-22, 704-710
8	Cholesterol biosynthesis	284, 692-701
9	Structure and function of lipoprotein	316-325, 701-703
10	Membrane structure	285-99
11	Membrane assembly	305-14
12	Transport across membranes	517-34
13	Amino acid degradation and the Urea cycle	727-35, 422, 746-48, 1290-91
14	Amino acid biosynthesis	764-81, 796-822
15	Structure of Nucleotides	795-97
16	Nucleotide metabolism	797-812, 816-17, 821-822
17	Central Dogma	844-877
18	Nucleic acid structure	848-54, 863-65
19	Stabilization of nucleic acid structure	862-3, 868-70
20	DNA supercoiling	873-82
21	DNA packaging	1124-33
22	DNA replication	1020-30, 1034-36, 1039-40, 1041-45
23	RNA polymerases	919-30
24	Transcription	915-19, 932-33, 930
25	Protein-DNA interactions	935-37
26	Post-transcriptional processing	944-48
27	Translation	959-80
28	Ribosomes	981-89
29	Polypeptide synthesis	989-1002
30	DNA repair	1046-51
31	Recombination	1053-61
32	Molecular cloning	871-73, 883-888, 892-95, 897-906