Guide to Studying for the Final Exam
in 694:301

by Frank Deis

While it is true that there are many chapters on the final exam in this class, most of the chapters are covered only in part, sometimes in small part.

**Chap 21 Glycogen.** On the Spring '02 Final, the "big" question was to write out the breakdown cascade. The whole chapter was covered. You should know how the enzymes work for breakdown and synthesis, and what purpose glycogen serves in the body. Also know effects of Insulin versus Epinephrine/Glucagon.

**Chap 22 Fatty Acids.** The main omissions from the study guide were the details of fatty acid synthesis, and the Citrate Lyase Cycle. In Spring '02 the "big" question asked for details of structure and cofactors for beta oxidation. You should understand about ketone bodies and ketosis (The Pima Paradox), and the math of ATP formation as done in class.

**Chap 23 Amino Acid Breakdown.** While it doesn't exactly show on the study guide, normally we would have covered more individual catabolic pathways for amino acids. Most of what is spelled out explicitly on the study guide was covered in class. Last year the "big" questions were to write out the complete Urea Cycle, and show Proline breakdown. Be sure you know how PLP functions, and Transamination, plus the SGOT story. Last year a "big" question was about Phe metabolism, and I could ask about the first reaction and PKU.

**Chap 24 Amino Acid Synthesis.** This chapter was barely touched on, but you need to know the list of essential amino acids, the structure and function of SAM, and the material on the THF worksheet. I did not discuss Glutathione, selenium, or bilirubin.

**Chap 25 Purines.** While much of the chapter was omitted, most of the material on the study guide was covered in class. I deleted the "nomenclature", the "maps" of pyrimidine and purine rings, the major motifs (aspartate donation and glutamine donation) in the first few sentences of the study guide. The rest, we did. Know about Gout, salvage, and how Uracil is methylated to yield Thymine, and what Methotrexate does.

**Chap 26 DNA Technology.** The whole study guide is relevant. Last year the "big" question involved interpreting an electrophoresis "ladder."

**Chap 27 DNA Replication.** Nearly the whole study guide was covered, but the last sentence about "mutagens and mutations" and "Thymine dimers" was left out. You should understand the Ames Test and be able to describe it or explain it. Last year a "big" question was the Replication Fork.

**Chap 28 RNA Transcription.** Last 4 sentences about Eukaryotes omitted. Last year, questions about promoter structure and transcription termination.

**Chap 29 Protein Synthesis.** I intend to cover the whole study guide.