ANSC 324 - Applied Animal Nutrition Exam 1-Review

- Be able to calculate apparent digestibility, and apparent and true *ileal* digestibility.
- Be able to convert between differing units of measure.
- Be able to define a nutrient and the different classes of nutrients.
- Be able to describe how proteins are digested and absorbed, including enzymes involved.
- Be able to describe the components of proximate analysis, and be able to calculate each component, given the proper information.
- Be able to describe the concept of a limiting amino acid.
- Be able to describe the concept of an "Ideal Protein".
- Be able to relate amino acids requirements on a basis relative to Lys, and be able to relate Lys level to ME level.
- Be able to describe the differences between gross energy, digestible energy, metabolizable energy, and net energy. Also, be able to calculate DE and ME from GE if the proper information is provided.
- Be able to describe the objectives of diet formulation, and why ingredients must be blended together.
- Be able to describe the potential antagonistic effects of certain amino acids (i.e. Lys & Arg, Leu, Val, &IIe)
- Be able to describe the principles of diet formulation. In particular understand how diets can be formulated on a limiting amino acid basis, and the role of synthetic amino acids in such diet formulations.
- Be able to describe why certain quantities of nonessential amino acids are "required" in the diet, but no requirement is given in the NRC.
- Be able to describe why ileal amino acid digestibility values are advantageous for diet formulation.
- Be able to formulate a diet by hand.
- Be able to formulate mineral and vitamin premixes.
- Be able to interpret amino acid requirements such as methionine, methionine + cystine, glycine/serine, phenylalanine, phenylalanine + tyrosine, and what these specific relationships are.
- Be able to provide examples of things that alter an animal's nutrient requirements (i.e. genetics, injury, diseases, etc.)
- Be able to read and understand nutrient requirement tables.
- Understand the ingredient and nutrient inputs required for computerized diet formulation, and how to apply constraints to ingredients and nutrients. Know how to set upper and lower limits for nutrients and ingredients, and how to fix something in the diet at a given level.
- Understand and be able to describe some of the practical concerns with regards to using DDGS in animal diets