

ADS 4114/6114
LECTURE TOPICS AND ASSIGNMENTS

- I. Course Introduction and Policies
 - History
 - Definitions
 - Nutrients & Their Absorption
- II. Nutrient Classes in Nature
 - Proximate Analysis
 - Photosynthesis
 - Plant & Animal Composition
 - Comparative Digestive Physiology
 - Monogastric (non-ruminant, simple stomach)
 - Ruminant
 - Non-Ruminant Herbivore
 - Avian
 - Digestive Tract Capacities
 - Pancreas & Liver
- III. Digestive Enzymes
 - Hormones involved with digestion
 - Absorption processes
 - Bioenergetics
- IV. Intermediary Metabolism
 - Glycolysis
 - Krebs (TCA, Citric Acid) Cycle
 - Electron Transport
- V. Carbohydrates
 - Monosaccharides
 - Polysaccharides
 - Monogastric Utilization
 - Ruminant utilization
- VI. Lipids
 - Structure, Form
 - Monogastric Utilization
 - Ketosis
 - Fatty Acid synthesis
 - Ruminant Utilization
- VII. Proteins
 - Amino Acids
 - Structure Classification
 - Dietary Requirement Classification
 - Peptides and Peptide Bond
 - Monogastric Utilization
 - Protein Synthesis
 - Amino Acid Metabolism
 - Deamination
 - Transamination
 - Ammonia Toxicity
 - Urea Cycle
 - Ruminant Utilization
 - Non-Protein Nitrogen
- VIII. Vitamins
 - Description & Definition
 - Comparison of Fat and Water Soluble Individual Vitamins
- IX. Minerals
 - Description
 - Classification
 - Function
 - Digestion & Metabolism
- X. Integration of Metabolism
 - Well-Fed State
 - Starvation
 - Insulin
 - Glucagon
- XI. Applied Nutrition (Feeds & Feeding)*
 - Feeding Companion Animals
 - Horses
 - Dogs
 - Cats

*Topics included in section XI will be covered as time permits. Not all topics in this section maybe covered, and the order maybe changed.