

NRC PLUS COURSE OUTLINE

by
Eleanor M. Kellon, VMD

Week One – Physiology of Digestion and Nutrient Utilization

- I. The digestive tract
- II. Active and passive absorption of minerals
- III. Absorption and metabolism of fats
- IV. Absorption and metabolism of protein
- V. Absorption and metabolism of carbohydrates
- VI. Vitamins

Week Two – Tools for Determining Intake

- I. Soil analysis
- II. Hair analysis
- III. Blood and tissue analysis
- IV. Diet analysis

Week Three – Energy Sources, Energy Requirements

- I. Carbohydrates, fats and protein as calories; role of the B vitamins
- II. Requirements for growth
- III. Requirements for pregnancy and lactation
- IV. Requirements for adult maintenance
- V. Fine tuning

Week Four – Protein Requirements

- I. Crude protein vs digestible protein
- II. Amino acid requirements
- III. Requirements for growth
- IV. Requirements for pregnancy and lactation
- V. Requirements for adult maintenance and exercise
- VI. Conditions requiring special protein considerations

Week Five – Understanding Electrolytes and Hydration

- I. Definition of electrolytes
- II. Sodium and the Physiology of Water Balance
- III. Potassium
- IV. Chloride
- V. Bicarbonate
- VI – Balancing to sweat losses

Week Six – The Major Minerals

- I. Beyond NRC
- II. Calcium
- III. Magnesium
- IV. Phosphorus
- V. Sulfur

Week Seven – The Trace Minerals

- I. Copper
- II. Zinc
- III. Manganese
- IV. Selenium
- V. Iodine
- VI. Other

Week Eight – Building a Diet

- I. Determine energy requirements
- II. Selecting appropriate energy sources
- III. Calculating minerals
- IV. Balancing minerals
- V. Vitamins
- VI. Food versus supplement sources

Week Nine – The Exercising Horse - Basics

- I. Matching energy sources to need
- II. Protein considerations
- III. Minerals and electrolytes
- IV. Vitamins

Week Ten – Hands On

- I. Sample insulin resistance diet
- II. Sample pregnancy/lactation/weanling diet
- III. Endurance