

## **NUTRITIONAL SCIENCES for GRADUATE**

### **Multidisciplinary Ph.D. and M.S. Programs in Nutritional Sciences**

#### **Major Equipment**

**Electrophoresis Equipment**

**Stimulator**

**Blood Biochem Analyzer**

**Ultra-speed Centrifuge**

**Electronic Balance**

**Shaking Water Bath**

**Analytical Balance**

**Vacuum Evaporator**

**Backfat Scanner**

**Atomic Absorption Spectrophotometer**

**Oxygen Bomb Calorimeter**

**Nitrogen Analyzer**

**Colorimeter**

**Distillation Unit**

**Spectrophotometer**

**High Performance Liquid Chromatography**

**Reverse Osmosis Systems for Laboratory Grade Water**

**Kjeldahl Nitrogen Analyzer**

**Gas Chromatograph**

**Lastometer**

**Flame Photometer**

**Cl and CO<sub>2</sub> Analyzer**

**Rotary Microtome**

**Polymerase Chain Reaction**

**CO<sub>2</sub> Incubator**

**Slide Projector**

**Overhead Projector**

#### **Animal farm**

**There are animal houses with automation facility as follows:**

**Dairy house**

**Cattle house**

**Poultry house, which includes layer house with wet pad and forced ventilation cooling systems, breeder house with wet pad and forced ventilation cooling systems, and broiler house with wet pad and forced ventilation cooling systems.**

**Environmental temperature controlled chamber**

## LIPID METABOLISM

Emphasis on factors influencing the absorption of fats and fatty acids, distribution and incorporation of fatty acids into body tissues, biosynthesis and catabolism of fatty acids, cholesterol and bioactive eicosanoids and involvement of fats in the disease process. *Prerequisite: BCH 401G and PGY 412G or consent of instructor.*

## CURRENT TOPICS IN NUTRITION

The course is designed to develop the students' independent thinking and critical analysis related to various nutritional issues. These skills will be developed through reading assignments and group discussion related to current topics in nutrition. *Prerequisite: Consent of instructor.*

## GRADUATE SEMINAR IN NUTRITIONAL SCIENCES

Reports and discussion on recent research and current literature in nutritional sciences. *Prerequisite: Graduate standing and consent of instructor for non-NS students enrolled for one credit.*

## PHYSIOLOGY OF NUTRIENT DIGESTION AND ABSORPTION

This course is designed to analyze and compare the structure and function of mammalian and avian gastrointestinal tracts, feedstuff digestion processes, and specific mechanisms responsible for nutrient absorption in various cell types. Emphasis will be placed on livestock and avian species. *Prerequisite: ASC 378 and ASC 380 or graduate standing.*

## ENERGY METABOLISM

An in-depth discussion of nutritional energetics, from the standpoint of factors which influence the utilization of dietary energy. A critical review of current literature. *Prerequisite: ASC 378 or equivalent, BCH 502 or equivalent, or consent of instructor.*

## PROTEIN METABOLISM

A study of the principles and present concepts of protein and amino acid nutrition and metabolism. *Prerequisite: Graduate level biochemistry.*