University of Ghana
Department of Nutrition & Food Science
Sample Fall Courses

NUTR 301 Nutrients and their Metabolism I
(Prerequisites: BIOL 201-204; CHEM 201, 202, 211, 212, 221,222)
Classification, metabolism and physiological functions, effects of deficiencies and trends in the consumption of carbohydrate, protein, and fat. Food as a source of energy, energy expenditure, measurement and factors influencing energy expenditure. Carbohydrate, protein and fat inter-relationships in meeting energy requirements.

NUTR 303 Nutritional Physiology
(Prerequisites: BIOL 201-204; CHEM 201, 202, 211, 212, 221,222)
The study of body systems associated with the delivery of food to the body. The structure of the digestive system in relation to its functions in digestion and absorption. Blood physiology: blood and other fluid compartments of the body in relation to the transfer of nutrients and metabolites. Excretion.

NUTR 305 Nutritional Physiology laboratory (Co-requisites: NUTR 303)
Laboratory experiments to illustrate the principles and techniques used in nutritional physiology. This course is to accompany lectures in Nutritional Physiology.

NUTR 313 Nutrition, Sustainable Livelihoods and Extension
The broad topic areas that will be covered in the course are: nutrition and livelihoods, malnutrition, food insecurity and livelihoods, role of extension in nutrition, qualitative assessment tools for understanding nutrition and food insecurity issues within the sustainable livelihoods framework, and improving nutrition through behavior change.

NUTR 401 Applied Nutrition

NUTR 403 Assessment of Nutritional status (Prerequisites: NUTR 303, 305, 301-302)

NUTR 405 Assessment of Nutritional status of a community I (Field work)
Techniques used in assessing nutritional status using dietary, biochemical, clinical and anthropometric measurements. Field survey of a selected community using various assessment methods; application and dissemination of nutrition knowledge in the community.
NUTR 407 Nutrient Needs (Prerequisite: NUTR 302)
Principles and methods of determination of nutrient needs; Proteins, amino acids, macro-
minerals, trace elements, vitamins, fatty acids and fats.

NUTR 409 Methods in Nutrition Research
Survey of physical, biochemical and physiological methods used in nutritional
investigation, e.g. fluorometry, amino acid analysis, automated haematology

NUTR 411 Human Growth and Body Composition (Prerequisite: NUTR 403)
Effects of nutrition on growth and development, regulatory growth mechanisms,
measurement of growth, reference standards in growth measurement. Influence of
nutrition on body composition.

NUTR 413 Nutrient Analysis practical (Prerequisite: NUTR 403, 405)
Laboratory on the techniques of determining nutrient needs and diagnosing nutrient
deficiencies. Balance studies.

FDSC 301: General Microbiology (Prerequisites: BIOL 201-204)
Historical foundations of Microbiology, Scope and relevance of microbiology. Major
groups of microorganisms: Prokaryotes and Eukaryotes - Bacteria, Fungi, Viruses, Algae,
Protozoa - Morphology, structure, taxonomy and reproduction; Importance of
microorganisms; Methods used to study microorganism - Cultivation of microorganisms,
Microscopy, Enumeration, Screening, isolation, characterization and identification,
Preservation of cultures. Microbial nutrition, metabolism, and genetics. Microbial growth
and its control.

FDSC 302: Thermal Processing of Foods
(Prerequisites: PHYS 200, 203, 204, BIOL 201-204, CHEM 201, 202, 211, 231, 232)
Applications of heat transfer processes in canning, pasteurization and aseptic processing.
Process calculations to ensure microbiological safety and nutrition. Thermal processing
equipment – design operation safety factors. Thermal processes and food preservations.

FDSC 303: General Microbiology Practicals (Prerequisite: FDSC 301)
Laboratory methods for culturing and examining micro-organisms

FDSC 305 Physical Principles in Food Processing
(Prerequisites: PHYS 200, 203, 204, BIOL 201-204, CHEM 201, 202, 211, 212, 231,
232)
The laws of conservation of mass and energy – application in food processing. Fluid flow
theory and applications. Unit operations in food processing such as dehydration, chilling
and freezing, extrusion, size reduction, evaporation, mechanical separations and mixing.
Traditional and modern applications of unit operations.
FDSC 307 Principles of Food Preservation

FDSC 309 Biometry (Prerequisites: STAT 212)

FDSC 405 Sensory Analysis of Foods (Prerequisites: FDSC 309 or equivalent)

FDSC 407 Quality control in food processing (Prerequisites FDSC 309 or equivalent)
Principles of quality control, quality assurance and Total quality management., Organisation of food industry quality assurance programmes, quality characteristics of foods and their measurement including development of specifications and standards of quality, sampling for quality control,. Statistical quality control processes and procedures including recording and reporting of data.

FDSC 411 Beverage and Sugar Technology
Structure, chemical and physical composition of cocoa, coffee and tea. Methods of processing. Sugar crops and sugar processing technology.

FDSC 413 Food laws and Regulations
Standards and legislation; procedures; regulatory agencies; Codex Alimentarius. Legal issues in food science and nutrition

FDSC 415 Food Irradiation
Radionuclides and radiation, radiation detection and measurement, effects of radiation on living organisms, radiation preservation of foods, limitations of food irradiation, regulations and safety. Commercial aspects of food irradiation.

FDSC 417 Food Packaging

FDSC 419 Food Analysis II (Prerequisites: NUTR 306)
FDSC 421 Food Processing Plant Operations and Sanitation (Prerequisite: FDSC 305)
Cleaning operations; use of detergents and sanitizers, water use, waste disposal and pollution control; Public Health Acts and Regulations. Environment issues in food processing. Factory visits.