Course Title: Research Methodology and Scientific writing credits:3

Unit 1- A) Introduction-types (exploratory and conclusive), process of research, language, philosophy, ethics, patent laws, copy right and cyber laws.

B) Sampling: statistical terms, probability and non-probability, criteria for selecting sample procedure, characteristics of good sampling procedure.

C) Measurement- construct validity, reliability, levels of measurement.

Unit II: A) Survey research –types of surveys, selecting survey method, constructing the survey, Interviews, advantages and disadvantages of survey methods.

B) Scaling, general issues.

C) Qualitative and unobstructive measures

Unit III: A) Research Design- Introduction, types

B) Experimental Design- introduction, classifying experimental designs, factorial Designs, randomized block design, co variance design, hybrid experimental design.

C) Quasi-experimental design-nonequivalent groups design, regression- discontinuity design, other quasi-experimental designs,

Unit IV: A) Analysis of results conclusion validity, data presentation, descriptive statistics as per subject specialization

B) Data presentation-tabular and graphical

Unit V: A) Scientific writing-steps for better writing, flow of information, organization of material, footnotes and references.

B) Writing of: Research paper, article, report, thesis, proposal

C) Oral presentation

References:
1. Trochim M.K William, Research methods, Biztantra, New Delhi

Course Title: **Advances in Nutritional Sciences**

**Unit I:** Introduction to Human Nutrition: A Global Perspective on Food and Nutrition, Body Composition and Energy Metabolism

**Unit II:** Nutrition and Metabolism of Proteins and Amino Acids

**Unit III:** Digestion and Metabolism of Carbohydrates

**Unit IV:** Nutrition and Metabolism of Lipids

**Unit V:** The Vitamins, Minerals and Trace Elements

**Unit VI:** Food and Nutrition-Related Diseases: The Global Challenge, Food and Nutrition: Policy and Regulatory Issues and Measuring Food Intake and Food Composition

**Unit VII: Advanced Omics technology and Nutrition**

Course Title: Advances in Food Sciences  


Ambient-Temperature Processing


Irradiation Theory.

High-pressure processing Theory.

Processing By Application Of Heat
**Processing By Removal Of Heat**


**Post-Processing Operations**

Coating Equipment. Microencapsulation and edible barrier coatings. Packaging Theory; Types of packaging materials; MAP. Packaging developments; Printing. Environmental considerations; Filling and sealing of containers- Rigid and Semi-Rigid Containers; Flexible containers; Shrink-wrapping and stretch-wrapping; Tamper-Evident Packaging; Labelling. Check weighing. Metal detection; Materials handling; Process control. Logistics and control of storage and distribution.

**Course Title: Mother and Child Nutrition**  
credits:3

Unit I: Current Scenario of maternal and child nutrition; Nutritional aspect of embryogenesis; Factors affecting outcome of pregnancy; Physiological changes in body composition and mental development in relation to prenatal and postal nutrition.

Unit II: Effect of nutritional status of mother on quantity and quality of breast milk; recent guidelines in infant feeding and complementary feeding. Feeding of premature babies; HIV and breast feeding; drug abuse and breast feeding.

Unit III: Nutritional problems and requirements of preschool and school going children; growth and development of children; growth monitoring using growth charts.

Unit IV: Strategies to improve maternal and child health in India; role of BPNI in promotion of breast feeding in India; importance of world breast feeding week.