3	**Biomarkers of Carbohydrate and Protein Metabolism** - Fasting and Postprandial Blood Glucose estimation, OGTT, Glycosylated Hemoglobin, - Glycemic index and glycemic load - Insulin index - Measurement of lipid levels in serum Interpretation	1

RESEARCH METHODOLOGY

4 credits (Th)

Objectives:

This course will enable students to:

1. develop a scientific approach and know the processes of research
2. develop the competence for selecting methods and tools appropriate for research topics
3. understand concepts of statistical measures of central tendency, dispersion, variability and probability

Contents:

Module No	Topics	Number of Credits
1	**The Research Process** a. Scientific approach to enquiry in comparison to native, common sense approach b. Knowledge, theory and research c. Role, need and scope of research in the discipline of Home Science **Assignment** : *Differentiate between investigative reporting and research report (with examples to be brought by students as exercise)* **Steps in Research Process and Elements of Research** a. Identifying interest areas and prioritizing Selection of topic and considerations in selection b. Review of related literature and research c.Variables- types of variables including discrete and continuous	**1**

	variables Conceptual definitions and operational definitions d. Concepts, hypotheses and theories e Hypothesis- meaning, attributes of a sound hypothesis, Stating the hypothesis and types of hypothesis Hypothesis testing- null hypothesis, sample distribution, level of significance, critical regions, Type I and Type II errors f. Research Design Research questions, objectives and assumptions **Assignment:** *Types of variables* *Hypothesis formations and research questions from Research readings – students identify hypothesis/research questions – Discussion* **Ethics in Research**	
2	**Types of Research** a. Basic and Applied research, Qualitative and Quantitative research (brief review of differences) b. Historical research c. Descriptive research methods – survey, case study, correlational study, content analysis, causal-comparative research d. Analytic studies- pre-experimental, experimental research, quasi experimental research e. Qualitative research, Ethnography f. Evaluative research- general characteristics, use of qualitative methods in enquiry Scope and importance in Home Science **Assignment:** *Differentiate between (a) basic and applied research (Exercise to be based on actual research papers published in accredited journals)* *(b) qualitative and quantitative research* *Based on Journal contents undertake a critical appraisal of studies/research papers and discuss types of Research with examples*	**1**
3	**Sampling** a. Rationale, characteristics- meaning, concept of population and sample, and utility b. Types of sampling and generalizability of results c. Probability sampling - simple random sample, systematic random sample, stratified random sampling etc - random and non-random samples, random numbers and use d.. Non-probability sampling - purposive samples, incidental samples, quota samples, snowball samples e.. General consideration in determination of sample size	**1**
4	**Tools for Data Collection** a.Primary and secondary methods of data collection	**1**

	b.Different types of questionnaires, rating scales, check lists, schedules, attitude scales, inventories, standardized tests, interviews, observation c. Development of tools, estimation of reliability and validity of tools d. Procedure for preparation of the tool, administration of tools for data collection e. Procedure for data collection f. Planning for data analysis-coding of responses **Assignment :** *Construction of tools for data collection a) types of questions b) Questionnaire c) interview schedule d) observation d) scales* *For a given topic students to frame and discuss the different possibilities of methods and tools*	

References

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3. Bulmer, M.C. (1984): Sociological Research Methods: An Introduction, Macmillan, Hong Kong.

4. Festinger, L. and Katz, D. (ed.) (1977): Research Methods in the Behavioral Sciences, Amerind Publishing, New Delhi.

5. Holloway, I. (1997): Basic Concepts of Qualitiative Research, Blackwell Science, London.

6. Jain, G. (1998): Research Methodology: Methods and Techniques, Mangal Deep, Jaipur.

7. Kothari, C.R. (2000): Research Methodology: Methods and Techniques, Wishwa Prakashan, New Delhi.

8. Kumar, A. (1997): Social Research Method (The Art of Scientific Investigation), Anmol Publication, New Delhi.

9. Kumar, A. (2002): Research Methodology in Social Sciences, Sarup and Sons, New Delhi.

10. McBurney, D.H. (2001): Research Methodology, Thomson-Wadsworth, Australia.

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