

SARDAR PATEL UNIVERSITY
Programme: M.Sc (Home Science)
Subject: Food Biotechnology
Semester: III
Syllabus with Effect from: June - 2013

Paper Code: PH03EFBT01	Total Credit: 4
Title Of Paper: Nutrigenomics & Personalized Nutrition	

Unit	Description in detail	Weightage (%)
I	Introduction. Concept of Functional Genomics, Systems Biology, Nutrigenomics, Nutrigenomics, Personalised Nutrition.	
II	Molecular Biology and Focuses Mainly on how the Genome Determines Nutritional Requirements and Metabolic Responses at cellular level. The impact of a changing nutrient environment will also be covered. Introduction to molecular diagnostics: some important research tools to investigate molecular aspects of nutrition, examine how the genome influences the response to nutrients will be discussed.	
III	Diet and gene expression: nutrients as regulators of activity and transcription factors. Nutrients as epigenetic exchange agents.	
IV	Diet in early life and metabolic programming.	
V	Diet as a possible risk or preventive factor in illnesses. Gene polymorphisms and responses to diet. Examples related to cardiovascular disease, cancer, osteoporosis. Risk/benefit biomarkers.	

Basic Text & Reference Books:-

- Personalized Nutrition: Principles and Applications by [Frans Kok](#), [Laura Bouwman](#), [Frank Desiere](#), CRC press
- Nutrigenomics and Nutrigenetics in Functional Foods and Personalized Nutrition by Lynnette R. Ferguson, CRC press

