**SARDAR PATEL UNIVERSITY**
**Programme: M.Sc (Home Science)**
**Subject: Family Resource Management**
**Semester: I**
**Syllabus with Effect from: June - 2013**

| **Paper Code: PH01EFRM02** | **Total Credit: 4** |
|---|---|
| **Title Of Paper: Energy Science** | |

| Unit | Description in detail | Weightage (%) |
|---|---|---|
| I | **Introduction to Energy Science**<br>Energy science, energy technology and co-relation with other sciences<br>Energy consumption as a measure of prosperity<br>Energy, man, and environment<br>Forms of energy – mechanical, electrical, chemical, nuclear, hydro, conventional, non-conventional, renewable, non-renewable<br>Energy demand and energy scenario in the country | |
| II | Energy From **Bio-Mass**<br>Introduction, bio-mass conversion technology<br>Bio-gas generation and factors affecting generation of bio gas<br>Types of bio gas plants, construction details, materials used for biogas generation.<br>Bio mass as source of energy, energy plantation, bio-mass gasifiers, applications and problems of bio-gasifiers | |
| III | **Solar Energy**<br>Introduction, fundamentals of solar energy and applications<br>Merits and limitations of solar energy utilization, solar radiations and conversion to heat.<br>Solar technologies and applications of solar energy | |
| IV | **Wind Energy & Tidal Energy**<br>Introduction to wind and tidal energy<br>Merits and limitations of wind and tidal energy<br>Applications and conversion of wind and tidal energy | |
| V | **Additional Energy Sources and Improved Energy Utilization**<br>Chemical energy<br>Geothermal energy<br>Nuclear energy<br>Safety and management of additional energy sources<br>Agencies (Government and NGOs promoting energy programmes) | |

**Basic Text & Reference Books:-**


- Rai, G.D., (1993) "Non- Conventional sources of energy", 2nd edition, Khanna publishers, Delhi.
- Rao S, and Parulekar, B., "Energy technology: non- conventional, renewable and conventional" Khanna publishers, Delhi.
- Garg, H., Prakash, J., "Solar energy: fundamentals and applications", Tata McGraw-Hill Publishing Co. Ltd., New Delhi.