



SARDAR PATEL UNIVERSITY
NAAC 'A' Grade (10-01-2023 To 09-01-2028)
Vallabh Vidyanagar
Gujarat

Academic Program Structure

&

Curriculum

(Aligned with NEP-2020)

M.Sc. (Home Science)

NHEQF Level: 6.0/6.5

Entry NHEQF Level	:	5.5/6
Duration	:	Two Years (Four Semesters)
Total Courses	:	
Total Learning Hours	:	2400
Total Credits	:	88
Total Marks	:	



Graduate Attributes (GAs)

M.Sc. in Home Science

Upon successful completion of the programme, graduates are expected to attain the following graduate attributes:

GA1. Advanced Disciplinary Knowledge

Apply comprehensive and integrated knowledge of multidisciplinary fields of Home Science, including Foods and Nutrition, Food Biotechnology, Human Development, Textiles and Clothing, Family Resource Management, and Extension Education.

GA2. Multidisciplinary Understanding and Generic Learning

Integrate scientific, social, and educational perspectives to design learner-centred, context-responsive, and inclusive educational practices addressing individual, family, and community needs.

GA3. Professional and procedural knowledge; application of competencies

Demonstrate practical competence in applying Home Science knowledge to perform skilled tasks across Foods and Nutrition, Food Biotechnology, Human Development, Textiles, Resource Management, and Extension Education.

GA4. Critical Thinking and Application to Real-Life Contexts

Demonstrate critical thinking by analyzing, evaluating, and applying Home Science knowledge to plan, implement, manage, and evaluate professional and community-based interventions to address real-life family and societal needs.

GA5. Research-related skills

Demonstrate advanced research skills by formulating problems, designing studies, and conducting systematic laboratory and survey work as well as critically analyze and interpret data to draw valid conclusions and present ethical, evidence-based findings across Home Science domains.

GA 6. Critical thinking and Analytical reasoning

Analyze government data, policies, schemes, vital statistics, clinical parameters and research literature, to draw valid conclusions and propose evidence-based improvements and interventions aimed at enhancing health, nutrition, education, and overall family and community well-being.

GA7. Digital and Technological Skills

Apply the skills of technologies such as food analysis instruments and software, statistical and data-analysis tools, textile and design software, and digital extension platforms to enhance learning, research skills and accuracy.



GA8. Communication and Academic Writing Skills

Communicate educational ideas, research findings, and professional judgments clearly and effectively through oral, written, and digital modes to diverse stakeholders.

GA9. Professional Ethics and Values

Demonstrate ethical conduct, integrity, and accountability in professional practice, research, community engagement, assessment, and leadership roles within the disciplines of Home Science and allied fields.

GA10. Inclusive and Multicultural Sensitivity

Promote equity, inclusion, gender sensitivity, Bhartiya Knowledge System and respect for cultural diversity while engaging with individuals, families, and communities from diverse socio-cultural, economic, and regional backgrounds.

GA11. Collaboration and Teamwork

Coordinate effectively and work collaboratively with peers, interdisciplinary teams, institutions, and community stakeholders by demonstrating coordination, mutual respect, and shared responsibility in professional and social contexts.

GA12. Educational Leadership Readiness

Demonstrate emerging leadership qualities by planning and guiding academic, research, and community-based initiatives; mentoring learners; and contributing to institutional and societal development related to nutrition, health, family, and community welfare.

GA13. Lifelong Learning and Professional Growth

Engage in self-directed learning, reflective practice, and continuous professional development to adapt to evolving scientific knowledge, professional practices, and societal needs in Home Science disciplines.

GA14. Environmental and Social Responsibility

Integrate and promote sustainability, environmental stewardship, and social responsibility in professional practice, research, and community outreach activities.

GA15. Community Engagement and Service Orientation

Engage in community-based education, research, and extension initiatives to enhance health, nutrition, family welfare, and socio-economic well-being as well as promote sustainable development across diverse populations.



Programme Educational Objectives (PEOs):

Within 2-3 years of completing the programme, graduates will be able to:

- PEO1.** Apply scientific principles of nutrition, human development, textiles, and resource management to promote individual, family, and community well-being.
- PEO2.** Demonstrate professional competence and ethical responsibility while addressing societal issues related to health, food security, family welfare, and sustainable living.
- PEO3.** Pursue careers, entrepreneurship, or higher education in areas such as foods and nutrition, apparel and textile, interior designing, family welfare, education, community development, and related interdisciplinary fields.
- PEO4.** Develop effective communication, leadership, and teamwork skills to work productively in diverse professional and community settings.
- PEO5.** Analyze real-life challenges and design practical solutions in home and community contexts using critical thinking, problem-solving, and research-based approaches.
- PEO6.** Engage in lifelong learning and adapt to emerging technologies, innovations, and societal changes relevant to Home Science and allied professions.

Program Learning Outcomes (PLOs):

Upon successful completion of the programme, learners will be able to:

- PLO1.** Demonstrate comprehensive knowledge of core disciplines of Home Science including nutrition, human development, textiles, resource management, and community science.
- PLO2.** Explain scientific, social, and technological principles underlying food, health, family welfare, sustainable living, and community development.
- PLO3.** Apply scientific principles and interdisciplinary knowledge to assess and solve real-life problems related to nutrition, food security, textiles, family welfare, and resource management.
- PLO4.** Design practical, evidence-based interventions and strategies to improve individual, family, and community well-being.
- PLO5.** Formulate research questions and conduct systematic investigations using appropriate qualitative and quantitative research methodologies.

- PLO6.** Analyze, interpret, and present research data using suitable statistical and analytical tools.
- PLO7.** Critically evaluate contemporary research literature and emerging trends in Home Science and allied disciplines.
- PLO8.** Communicate scientific information effectively through oral, written, and digital platforms to diverse audiences.
- PLO9.** Demonstrate leadership, teamwork, and professional competence in academic, clinical, industrial, and community settings.
- PLO10.** Practice ethical standards, professional integrity, and social responsibility while addressing health, environmental, and community concerns.
- PLO11.** Promote inclusivity, gender sensitivity, sustainability, Bhartiya knowledge system and respect for cultural diversity in professional practice.
- PLO12.** Engage in lifelong learning, skill enhancement, entrepreneurship, and adaptation to technological advancements relevant to Home Science professions.

Program Specific Learning Outcomes (PSOs):

Food Biotechnology

- PSO1.** Apply core principles of microbial physiology, molecular biology, genetic engineering, and biotechnology to enhance food quality, safety, functionality, and shelf-life.
- PSO2.** Design, execute, and optimize bioprocesses using advanced biotechnological tools for agro-resource valorization, waste utilization, and nutraceutical development.
- PSO3.** Exhibit professional competence in scientific communication, quality assurance, biosafety, and regulatory practices while promoting ethical, sustainable, and innovative food biotechnology solutions.



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NEP-2020 aligned Curriculum with effect from Academic Year 2026-27

M.Sc. (Home Science) – Food Biotechnology
Semester-I

Course Type	Course Code	Course Title	Teaching-Learning Scheme		Credits	Assessment Scheme & Marks				
			L-P-T	Total Notional Hours		Internal Assessment			External Assessment	Total Marks
						FA	SA	Total		
DSC	P2H01NCFBT01	Principles and Applications of Instruments and Techniques	4-0-1	120	4	20	30	50	50	100
DSC	P2H01NCFBT02	Basic Biochemistry	4-0-1	120	4	20	30	50	50	100
DSC	P2H01NCFBT03	Cell and Molecular Biology	4-0-1	120	4	20	30	50	50	100
DSC	P2H01NCFBT04	Practical based on Principles & Applications of Instruments & Techniques and Basic Biochemistry	0-8-1	120	4	20	30	50	50	100
DSC	P2H01NCFBT05	Practical based on Cell & Molecular Biology and Food Microbiology	0-8-1	120	4	20	30	50	50	100
DSC	P2H01NCFBT06	Food Microbiology	2-0-1	60	2	10	15	25	25	50
				660	22	110	165	275	275	550

DSC: Discipline Specific Core **L:** Lecture **P:** Practical **T:** Tutorial
FA: Formative Assessment **SA:** Summative Assessment



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M.Sc. (Home Science) – Food Biotechnology

Semester-II

Course Type	Course Code	Course Title	Teaching-Learning Scheme		Credits	Assessment Scheme & Marks				
			L-P-T	Total Notional Hours		Internal Assessment			External Assessment	Total Marks
						FA	SA	Total		
DSC	P2H02NCFBT01	Recombinant DNA Technology	4-0-1	120	4	20	30	50	50	100
DSC	P2H02NCFBT02	Nutritional Biotechnology	4-0-1	120	4	20	30	50	50	100
DSC	P2H02NCFBT03	Food Processing Technology	4-0-1	120	4	20	30	50	50	100
DSC	P2H02NCFBT04	Practical based on Recombinant DNA Technology and Nutritional Biotechnology	0-8-1	120	4	20	30	50	50	100
DSC	P2H02NCFBT05	Practical based on Food Processing Technology and Food Analysis	0-8-1	120	4	20	30	50	50	100
DSC	P2H02NCFBT06	Bhartiya Knowledge System in Home Science	2-0-1	60	2	10	15	25	25	50
				660	22	110	165	275	275	550

DSC: Discipline Specific Core

L: Lecture

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