Graphic Era Deemed to be University DEHRADUN

NAAC GRADE A+ ACCREDITED

CURRICULUM
for
POSTGRADUATE DEGREE PROGRAM
IN
Master of Science (Foods and Nutrition)
Scheme of Teaching and Evaluation 2025
(Effective from the academic year 2025-26)

Food Science & Technology
GRAPHIC ERA (DEEMED TO BE UNIVERSITY)
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1. Preamble

The role of higher education is very important in securing the gainful employment and/or providing further access to higher education comparable to the best available in the world class institutions elsewhere. The improvement in the quality of higher education, therefore, deserves to be given highest priority to enable the young generation of students to acquire skill, training and knowledge in order to enhance their thinking, comprehension and application abilities and prepare them to compete, succeed and excel globally. Sustained initiatives are required to reform the present higher education system for improving and upgrading the academic resources and learning environments by raising the quality of teaching and standards of achievements in learning outcomes in undergraduate programs. The Graphic Era (Deemed to be University) upgraded its undergraduate programmes in Nutrition and Dietetics in accordance with model curriculum proposed by UGC and guidelines of NEP, 2020 including Outcome Based Education (OBE) and Choice Based Credit System (CBCS), which makes it student-centric, interactive with well-defined aims, objectives and goals. NEP, 2020 aims at making higher education multidisciplinary learning process. In other words, the curriculum will be flexible, it will allow students to take up creative subject-combinations.

2. About the program

The Department of Food Science & Technology at Graphic Era (Deemed to be University) offers excellent courses at the undergraduate, postgraduate, and doctoral level, providing students with a solid foundation in food science and technology and preparing them for careers in various sectors of the food industry. The state-of-the-art facilities, highly qualified faculty members, and opportunities for practical experience make it an ideal place for students to pursue a career in the food technology. The courses offered by the department includes B.Sc. Food Technology, B.Sc. (Honours) Food Technology, B.Sc. (Honours), Food Technology (with research) B.Sc. Nutrition and Dietetics, B.Sc. (Honours), Nutrition and Dietetics, B.Sc. (Honours) Nutrition and Dietetics (with research), M.Sc. Food Technology, M.Sc. Foods and Nutrition and doctoral level Ph.D. program in Food Technology. The Department has well-equipped laboratories, research facilities, and a library with a vast collection of books and journals. The department has highly qualified faculty members who are experts in their fields and have extensive experience in teaching and research. The university also provides students with opportunities for internships, industrial visits, and research projects to gain practical

experience in the field. The department has collaborations with various industries and research institutions, providing students with exposure to real-world problems and the latest developments in the field.

.3. Vision & Mission

3.1 Vision and Mission of the University

Vision

We visualize Graphic Era (Deemed to be University) as an internationally recognized, enquiry driven, ethically engaged diverse community, whose members work collaboratively for positive transformation in the world, through leadership in teaching, research and social action

Mission

The mission of the university is to promote learning in true spirit and offering knowledge and skills in order to succeed as professionals. The university aims to distinguish itself as a diverse, socially responsible learning community with a high-quality scholarship and academic rigor.

3.2 Vision and Mission of the Department

Vision

The Department of Food Science & Technology envisions to create skilled food technologists and nutritionists through proactive approaches in quality education, research, entrepreneurial and outreach activities, aimed at advancing sustainable societal progress.

Mission

M1. To gain a deep understanding of Food Science and Technology and foster a transformed partnership based on symbiosis between industry and academia for the benefit of the food and health sector.

M2. To establish an environment capable of conducting research for its excellence and global reputation.

M3. To build a life-learning environment among students to effectively contribute to both current and future organizations.

4. Program Educational Objectives

PEO1: Students will apply the concepts related to field of foods and nutrition for academia, research and entrepreneurship.

PEO2: Students will be able meet the demands of modern society by acquiring practical skills that enhances their potential in the field of nutrition science.

PEO3: To produce professional post-graduates ready to work with a sense of responsibility, ethics and enabling them to work efficiently individually and also as a team.

PEO4: To impart the competency in students so that they are able to pursue higher studies and research in areas of foods, nutrition, dietetics and other professionally related fields.

5. Consistency of PEOs with Mission of the Department

PEO Statements	M1	M2	M3
PEO1	3	2	2
PEO2	3	2	2
PEO3	2	1	1
PEO4	2	2	2

High correlation (3); Medium correlation (2); Low correlation (1)

6. Program Outcomes (POs)

PO1. Science knowledge: Apply the knowledge of technological principles underlying foods and nutrition science to the solution of complex science problems.

PO2. Problem analysis: Identify, formulate, review research literature, and analyze complex problems reaching substantiated conclusions using first principles of sciences and technology.

PO3. Design/development of solutions: Skills and knowledge necessary to design solutions that address the complexities of the foods, nutrition and dietetics industry while prioritizing public health, safety, and environmental sustainability, as well as considering social and cultural norms of the society.

PO4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems.

PO5. Modern tool usage: Utilize, select, and apply modern analytical and IT tools, including prediction and analysis techniques, effectively in complex food and nutrition activities while recognizing their limitations.

PO6. The technologist and society: Apply contextual reasoning to assess societal, health, safety, legal, and cultural issues in the field of food, nutrition and dietetics practice, ensuring ethical and responsible professional conduct.

PO7. Environment and sustainability: Understand the environmental and societal impacts of food and nutrition science solutions, and integrate sustainable development principles into professional practice.

7. Program Specific Outcomes (PSOs)

In addition to these twelve POs, three Program Specific Outcomes (PSOs) are formulated

PSO1: Students will acquire various concepts of foods and nutrition science by acquiring theoretical and practical knowledge.

PSO2: Students will develop essential skills required for community nutritional assessment, health monitoring, diet planning, counselling and food safety.

PSO3: Students will learn the aspects of various multidisciplinary field of foods and nutrition and knowledge about sustainable development.

8. Program Structure

A. Definition of Credit:

1 Hr. Lecture (L) per week	1 Credit
1 Hr. Tutorial (T) per week	1 Credit
1 Hr. Practical (P) per week	0.5 Credit
2 Hours Practical (P) per week	1 Credit

B. Nomenclature

Code	Definitions
DSC	Discipline Specific Core Courses
DEC	Departmental Elective Course
AEC	Ability Enhancement Course
SEC	Skill Enhancement Course
PROJ	Dissertation/ Research Project

Definitions

1. Courses of study – Courses of study indicates pursuance of study in a particular discipline. Every discipline shall offer various categories of courses of study, viz. Major Disciplinary Courses (DSC), Department Elective Courses (DEC), Ability Enhancement Course (AEC), Skill Enhancement Course (SEC), and Dissertation/Research Project (PROJ)

a) Discipline Specific Core (DSC) Courses: Major Disciplinary is a course of study, which should be pursued by a student as a mandatory requirement of his/her programme of study. DSC shall be the core credit courses of that particular discipline which will be appropriately graded and arranged across the semesters of study, being undertaken by the student.

b) Department Elective Courses (DEC): Department elective courses are an essential component of a student's academic journey, forming a foundational aspect of their chosen field of study. As mandatory requirements within a program, department elective courses, or DECs, constitute the core credit courses specific to the discipline. These courses are strategically graded and distributed across the semesters of study, providing students with a structured pathway to deepen their understanding and expertise within their major area of focus.

c) Ability Enhancement Course (AEC): Ability Enhancement courses aim at enabling the students to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic writing skills, that help students articulate their arguments and present their thinking clearly and coherently and recognize the importance of language as a mediator of knowledge and identity.

d) Skill Enhancement Course (SEC): SE courses are skill-based courses in all disciplines and are aimed at providing hands-on-training, skills, etc.

e) Dissertation/ Research Project (PROJ)

Students are required to take up research projects under the guidance of a faculty member or Industry supervisor. The students are expected to complete the Research Project in the fourth semester.

9. Major Features of Curriculum

- Flexible Choice Based System for students to pursue courses of their interest.
- Incudes Range of Courses to cover up the diversity of Foods and Nutrition Specializations.
- To impart high competency in the students, the curriculum offers distinct ability enhancement and value-added courses.
- Apart from the technical course, the program offers a range of courses that provides the students a broad range of knowledge and skill set like life skills and mentoring, soft skills, Aptitude, Communication skills, social and professional ethics in science, environmental engineering, and food safety management.
- The curriculum offers multi-disciplinary courses running in the university for other filed/areas.

Course Components of Academic Program
M. Sc. Foods and Nutrition

Program Duration : 4 Semesters, 2 Years

Total Number of Credits : **80**

Course Components		**Credits**
1.	Discipline Specific Core (DSC) Courses	50
2.	Department Elective Courses (DEC)	10
3.	Ability Enhancement Course (AEC)	2
4.	Dissertation/ Research Project (PROJ)/ Skill Enhancement Course (SEC)	18
	Total Credits	**80**

10. Scheme

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Semester I

COURSE MODULE				TEACHING PERIODS				WEIGHTAGE: EVALUATION			
COURSE			Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	Course Component									
MSCFN-101	Food Chemistry	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-102	Community Nutrition and Assessment	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-103	Applied Human Nutrition	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-104	Food Microbiology and Safety	**DSC**	4	4	-	-	4	25	25	50	100
MSCFNL-101	Food Chemistry Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-102	Community Nutrition and Assessment Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-103	Applied Human Nutrition Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-104	Food Microbiology and Safety Lab	**DSC**	1	-	-	1	2	25	25	50	100
Total			**20**	**16**	**-**	**4**		**-**	**-**	**-**	**800**

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Semester II

COURSE MODULE				**TEACHING PERIODS**				**WEIGHTAGE: EVALUATION**			
COURSE			**Credits**	**L**	**T**	**P**	**Contact Hr.**	**CIE**	**MSE**	**ESE**	**Total**
Code	**Title**	**Course Component**									
MSCFN-201	Clinical Nutrition and Dietetics	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-202	Nutritional Biochemistry and Techniques	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-203	Therapeutic Nutrition	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-204a	**Elective-I** Nutraceuticals and Health Foods	**DEC**	4	4	-	-	4	25	25	50	100
MSCFN-204b	Food Analytical Methods										
MSCFNL-201	Clinical Nutrition and Dietetics Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-202	Nutritional Biochemistry and Techniques Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-203	Therapeutic Nutrition Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-204a	Nutraceuticals and Health Foods Lab	**DEC**	1	-	-	1	2	25	25	50	100
MSCFNL-204b	Food Analytical Methods Lab										
Total			**20**	**16**	**-**	**4**		**-**	**-**	**-**	**800**

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Semester III

COURSE MODULE				TEACHING PERIODS				WEIGHTAGE: EVALUATION			
COURSE			Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	Course Component									
MSCFN-301	Sports and Fitness Nutrition	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-302	Nutritional Requirement Throughout Lifecycle	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-303	Food Product Development and Entrepreneurship	**DSC**	4	4	-	-	4	25	25	50	100
MSCFN-304a	**Elective-II** Institutional Food Service Management	**DEC**	4	4	-	-	4	25	25	50	100
MSCFN-304b	Food Quality and Sensory Evaluation										
MSCFNL-301	Sports and Fitness Nutrition Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-302	Nutritional Requirement Throughout Lifecycle Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-303	Food Product Development and Entrepreneurship Lab	**DSC**	1	-	-	1	2	25	25	50	100
MSCFNL-304a	Institutional Food Service Management Lab	**DEC**	1	-	-	1	2	25	25	50	100
MSCFNL-304b	Food Quality and Sensory Evaluation Lab										
Total			**20**	**16**	**-**	**4**		**-**	**-**	**-**	**800**

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Semester IV

COURSE MODULE				TEACHING PERIODS				WEIGHTAGE: EVALUATION			
COURSE			Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	Course Component									
MSCFNPROJ-401	Dissertation/ Research Project (PROJ)	**SEC**	18	-	-	18	-	-	-	-	100
SM-01	Seminar	**AEC**	1	-	-	1	-	-	-	-	100
GP-01	General Proficiency	**AEC**	1	-	-	1	-	-	-	-	100
Total			**20**	-	-	**20**	-	-	-	-	**300**

List of course offered under Ability Enhancement (AEC)

S. No.	Semester	Course Code	Course Name	Credits
1	IV	SM-01	Seminar	1
2	IV	GP-01	General Proficiency	1

List of course offered under Skill Enhancement (SEC)

S. No.	Semester	Course Code	Course Name	Credits
1	IV	MSCFNPROJ-401	Dissertation/ Research Project (PROJ)	18

List of course offered under Departmental Elective Courses (DEC)

Sl. No.	Semester	Course Code	Course Name	Credits
1	II	MSCFN-204a MSCFN- 204b	Nutraceuticals and Health Foods Food Analytical Methods	4
2	II	MSCFNL-204a MSCFNL-204b	Nutraceuticals and Health Foods Lab Food Analytical Methods Lab	1
3	III	MSCFN-304a MSCFN-304b	Institutional Food Service Management Food Quality and Sensory Evaluation	4
4	III	MSCFNL-304a MSCFNL-304b	Institutional Food Service Management Lab Food Quality and Sensory Evaluation Lab	1

List of courses offered under Major Disciplinary Courses (DSC)

S. No.	Semester	Course Code	Course Name	Credits
1	I	MSCFN-101	Food Chemistry	4
2	I	MSCFN-102	Community Nutrition and Assessment	4
3	I	MSCFN-103	Applied Human Nutrition	4
4	I	MSCFN-104	Food Microbiology and Safety	4
5	I	MSCFNL-101	Food Chemistry Lab	1
6	I	MSCFNL-102	Community Nutrition and Assessment Lab	1
7	I	MSCFNL-103	Applied Human Nutrition Lab	1
8	I	MSCFNL-104	Food Microbiology and Safety Lab	1
9	II	MSCFN-201	Clinical Nutrition and Dietetics	4
10	II	MSCFN-202	Nutritional Biochemistry and Techniques	4
11	II	MSCFN-203	Therapeutic Nutrition	4
12	II	MSCFNL-201	Clinical Nutrition and Dietetics Lab	1
13	II	MSCFNL-202	Nutritional Biochemistry and Techniques Lab	1
14	II	MSCFNL-203	Therapeutic Nutrition Lab	1
15	III	MSCFN-301	Sports and Fitness Nutrition	4
16	III	MSCFN-302	Nutritional Requirement Throughout Lifecycle	4
17	III	MSCFN-303	Food Product Development and Entrepreneurship	4
18	III	MSCFNL-301	Sports and Fitness Nutrition Lab	1
19	III	MSCFNL-302	Nutritional Requirement Throughout Lifecycle Lab	1
20	III	MSCFNL-303	Food Product Development and Entrepreneurship Lab	1

List of courses offered under Departmental Elective Courses (DEC)

S. No.	Semester	Course Code	Course Name	Credits
1	II	MSCFN-204a MSCFN- 204b	Nutraceuticals and Health Foods Food Analytical Methods	4
2	II	MSCFNL-204a MSCFNL-204b	Nutraceuticals and Health Foods Lab Food Analytical Methods Lab	1
3	III	MSCFN-304a MSCFN-304b	Institutional Food Service Management Food Quality and Sensory Evaluation	4
4	III	MSCFNL-304a MSCFNL-304b	Institutional Food Service Management Lab Food Quality and Sensory Evaluation Lab	1