

As Per NEP 2020

University of Mumbai



Title of the programme

**A- P.G. Diploma in Home Science – Dietetics
and Applied Nutrition**

2023 - 24

Syllabus for Semester – I

Ref: GR dated 16th May, 2023 for Credit Structure of PG

University of Mumbai




(As per NEP 2020)

Sr. No.	Heading	Particulars	
1	Title of programme O: _____ A	P.G. Diploma in Home Science – Dietetics and Applied Nutrition	
	O: _____ B		
	O: _____ C		
2	Eligibility O: _____	A	For being eligible for admission, a learner must have passed: <ul style="list-style-type: none"> • B.Sc. Home Science with specialization in Foods, Nutrition and Dietetics or its equivalent. OR • B.Sc. with Foods and Nutrition/ Foods, Nutrition and Dietetics/Food Technology or its equivalent. OR • B.Sc. General/Composite Home Science OR • B.Sc. Home Science in any other Specialization OR • B.Sc. Microbiology/Biochemistry/ Life Sciences/Chemistry/Biotechnology/Biological Sciences as a major or part fulfilment. OR • B.Sc. Home Economics OR • B.Sc. Human Ecology OR • B.Sc. Family and Community Sciences OR • B.Sc. /B.A. in Human Sciences OR • B.Sc. Nursing or an equivalent Nursing Degree of another recognized University. OR • B.Sc. Pharmacology OR

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			<ul style="list-style-type: none"> • B.Pt. (Bachelor of Physiotherapy) OR • Medical Graduates in any discipline (MBBS/BAMS/BHMS/BDS) OR • B. Tech Food Technology OR • B. Voc Home Science/ Foods, Nutrition and Dietetics/Foods and Nutrition/Food Processing and Technology or its equivalent. OR • B.Sc. Catering and Hotel Management or its equivalent. OR • A graduate degree which includes at least four of the following subjects in the undergraduate programmers - Basic Nutrition, Biochemistry, Physiology, Food Science, Food processing/Food Preservation, Dietetics, Community Nutrition/Public Health Nutrition.
		B	
		C	
3	Duration of programme	A	1 Year
	R: _____	B	
		C	
4	R: _____ Intake Capacity		20
5	R: _____ Scheme of Examination		NEP 50% Internal 50% External, Semester End Examination Individual Passing in Internal and External Examination



6	Standards of Passing R: _____	40%	
7	Credit Structure R: _____	Attached herewith	
8	Semesters	A	Semester I & II
		B	
		C	
9	Programme Academic Level	A	6.0
		B	
		C	
10	Pattern	Semester	
11	Status	New	
12	To be implemented from the Academic Year Progressively	A	From Academic Year: 2023 - 2024
		B	
		C	



Sign of Head of the Institute

Sign of Dean

Name of the Head of the Institute with
Designation

Name of the Dean

Prof. Dr. Vishaka Ashish Karnad
I/C Principal &
Chairperson Board of Studies
Home Science

Name of the Faculty

Name of Department
Foods, Nutrition and Dietetics

Page 5 of 83



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Preamble

1) Introduction

From the late 1990s, there was recognition of the urgent need for trained dietitians in clinical and community settings in India. To address this need, a P.G. Diploma in Dietetics and Applied Nutrition was started in 1999 at the College of Home Science Nirmala Niketan with permanent affiliation to the University of Mumbai. Over the two decades, the Programme has yielded a growing cadre of trained (and after RD exam) registered dietitians, many of whom are heading the Diet Departments of nationally acclaimed hospitals in Mumbai and elsewhere.

Currently there are only about 30,000 qualified practicing dietitians in India for a 1.4 billion population. India stands with the burden of chronic degenerative diseases as a health emergency and duals the second burden of malnutrition. Health, wellness and lifestyle being on the forefront of the National Nutrition Mission as well as global sustainable development goals it is imperative therefore that dietetics as an integral field of public health nutrition be addressed on a high-priority basis. The field of dietetics being a newer field is very dynamic due to the multidisciplinary research emerging in this area leading to various newer techniques of medical nutrition therapy. It is therefore vital to have highly qualified dietetic professionals who will be able to transform individual and community health. With the awareness of the impact of epigenetic processes implied in chronic degenerative diseases, it is crucial to have highly qualified dietetic professionals with a strong background in clinical nutrition research and evidence-based practice to create sustainable health, dietary and lifestyle solutions. Moreover, healthcare currently encompasses many multi-disciplinary approaches which need to be incorporated into dietetic and nutrition practice in both clinics and communities.

Thus, this P.G. Diploma in Dietetics and Applied Nutrition is designed to provide an in- depth knowledge of both theoretical and practical components making it one of the courses that can lead to a contribution for both the individualised in-patient and out-patient care as well as in the public health domain.

The coursework includes fundamental concepts of therapeutic dietetics, applied physiology, clinical biochemistry, and applied nutrition in various fields and food service management in institutions. Mandatory and elective courses, along with their corresponding practical and extensive internships (On the Job training) form an integral part of the curriculum.

The papers in Research Methods and those in Statistics will help students to understand the techniques and methodologies used for evidence-based practice. The elective courses offer various training opportunities in the most recent advances in the field of dietetics, insight into entrepreneurship will enhance competencies in channelizing ideas and innovations related to dietetics and public health. Students will acquire competencies in developing a multidisciplinary approach to tackle chronic disease conditions. Emphasis has been placed in providing adequate theoretical and practical knowledge in intensive care nutrition therapy for acute and critical cases as well as emphasizing on detailed case studies in all other aspects of medical nutrition therapy. Successful completion of this

Page 6 of 83



Prof. Dr. Vishaka Ashish Karnad

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P.G. Diploma programme will enhance employability of students, providing multiple avenues for their professional development in the field of dietetics.

This field lends itself to multiple entrepreneurial opportunities as diet and fitness consultants as well as in the public health sector. The training in use of digital technology is another path to impart nutrition education and to reach out to the masses as an integral part of public health.

Overall, the P.G. Diploma in Dietetics and Applied Nutrition will aim to deliver holistic education integrating the theory and practical learnings and will help students establish a niche career for themselves while contributing positively to society's health outcomes.

With the NEP 2020, it is time to meet the evolved need of this programme to metamorphose into an M.Sc. Programme. This extensive transfer of knowledge and skill is only possible with a two-year M.Sc. Programme with both classroom learning and intense industrial interactions in clinical dietetic settings. Emerging out of the prestigious 'College of Home Science Nirmala Niketan', affiliated to the premier University of Mumbai, dietitians with a M.Sc. qualification will be more competent in addressing dietetic concerns at both the national and global level as compared to the inputs received in a postgraduate diploma.

2) Aims and Objectives

- a. To create a strong understanding of fundamental and advanced concepts in the field of Dietetics and Applied Nutrition.
- b. To equip students with knowledge, skills and research competencies for professional application into the areas of food processing, therapeutic dietetics and public health nutrition.
- c. To empower the students with analytical reasoning skills, research competencies; open mindedness to use recent technologies; creativity for contribution to individuals' and the community's health and an entrepreneurial bend of thought and action.
- d. To create competent professionals who work with acknowledgement of the dynamism and evolution in the field of clinical nutrition and dietetics, and are capable of keeping up with the emerging trends and practices in the field with a vision to contribute to national development.

3) Programme/ Learning Outcomes

The programme encompasses a comprehensive range of skills and knowledge, values and mindset, enabling graduates to excel in the multifaceted field of Dietetics and Applied Nutrition. On successful completion of the programme, student will be able to be a competent and valuable member of the fraternity as outlined below:

Programme Outcome (PO)	Definition	Graduate Attribute
	To be able to...	



PO1	Demonstrate an in-depth knowledge and understanding of core fundamentals of concepts of nutrition and therapeutic Dietetics, public health and management of food service in a hospital/health care setup.	Disciplinary Knowledge
PO2	Effectively develop nutritious and therapeutic diets and to communicate them clearly to patients, explaining complex concepts of nutrition in simple and understandable terms both orally and in writing.	Communication Skills
PO3	Design effective diets based on the nutritional diagnosis and evaluate the modes of nutritional therapies as per the individual requirements of the patient's clinical status.	Critical Thinking
PO4	Creatively construct Dietary and Nutritional strategies to manage diseases, and address nutrition related health issues in the clinical set up; to support the hospital / clinical industry as a knowledge partner in formulation of healthy food products; and to engage in entrepreneurial initiatives to solve individual and community health problems.	Innovation, Entrepreneurial
PO5	Competently evaluate traditional as well as recent nutrition practices in relation to evidence-based nutrition and draw applicable conclusions, using a scientific and an open mind with the vision of bettering food and nutrition practice in the clinical set up.	Analytical and Scientific Reasoning
PO6	Proficiently explore the cause-and-effect relationships of food, nutrition and lifestyles on health and to construct and follow through a research problem using research techniques and statistical analysis, thus drawing up adequate conclusions for applications of research in the clinical / hospital industry, community and clinical setups as employee or entrepreneur.	Research related skills
PO7	Successfully work in, cooperate and derive meaningful beneficial conclusions for food consumers' requirements as well as patients' and community health through interdisciplinary and collaborative efforts in the healthcare sector.	Cooperation /Team work
PO8	Envision a drive to translate research, recent innovations and personal and professional experiences into applications to benefit food industry, clinical management of disease, community health; and entrepreneurial ventures with self-awareness and introspection	Reflective Thinking
PO9	Use technology for nutrition and dietetic communications, consumer information, hospital administration, diet planning, nutrition education as	Information/digital literacy



	well as be aware of using digitization for entrepreneurial ventures.	
PO10	Work independently, identify appropriate resources for a project and manage a project to completion.	Self – Directed Learning
PO11	Be adept with regard to national and global multi-cultural aspects of foods and nutrition, thus being able to deliver food products and nutrition and lifestyle strategies for health in harmony with the existing cultural practices of the individual and the community.	Multi-cultural competence
PO12	Practice principles of dietetics and community health in the most sustainable and effective manner, placing consumer, patient, community and fraternity well-being at the center of operations and refrain unethical behavior at workplace, the community and research.	Moral and Ethical awareness and reasoning
PO13	Take on leadership positions formulating and sharing an inspiring vision and the eagerness to bring productive and sustainable positive results for the professional group, the community and the foods, nutrition and dietetics fraternity using organizational, entrepreneurial and managerial skills.	Leadership readiness/qualities
PO14	Continue lifelong learning and be updated with cutting edge knowledge and practices in the field and the understanding that ongoing learning has to be the personal and professional way of life; thus, being continuously involved in evolving, up scaling, reinventing and reskilling to the requirements of the times.	Lifelong learning

4) Any other point (if any)



5) **CREDIT STRUCTURE OF THE PROGRAMME (SEMESTER – I)**
(Table as per Parishishta 1 with sign of HOD and Dean)

R_____

Postgraduate Programme in University:

- P.G. Diploma in Home Science – Dietetics and Applied Nutrition

Parishishta – 1

Year (1 Yr PG)	Level	Sem. (1 Yr)	Major		RM	OJT/FP	RP	Cum. Cr.	Degree
			Mandatory*	Electives (Any one)					
I	6.0	Sem-I	PGDAN01C1A Human Physiology Theory (2 Cr) PGDAN01C1BP Health & Nutrition Assessment Practical (2 Cr)	PGDAN01C5E1A Applications of Food Science in Development of Therapeutic Foods Theory (2 Cr) PGDAN01C5E1BP Applications of Food Science in Development of Therapeutic Foods Practical (2 Cr) OR PGDAN01C5E2A Multi-Disciplinary Strategies for Health and Disease Management Theory (2 Cr) PGDAN01C5E2BP Multi-Disciplinary Strategies for Health and Disease Management Practical (2 Cr)	PGDAN01C6 Research Methods in Home Science (4 Cr)	-	-	22	PG Diploma (after 3 Year Degree)
Sem – I For P.G.			14	4	4	-	-	22	



Diploma (One - Year)							
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Note: Curriculum will be supplemented by Extension Work and Educational Trips for experiential learning with supplemental credits.

A MOOC course on SWAYAM/ NPTEL/COURSERA can be completed with supplemental credits.



CREDIT STRUCTURE OF THE PROGRAMME (SEMESTER – II)
(Table as per Parishishta 1 with sign of HOD and Dean)

R _____

Postgraduate Programme in University:

- P.G. Diploma in Home Science – Dietetics and Applied Nutrition

Parishishta – 1

Exit option: P.G. Diploma (44 Credits) after Three Year UG Degree									
Year (1 Yr PG)	Level	Sem. (1 Yr)	Major		RM	OJT/FP	RP	Cum. Cr.	Degree
			Mandatory*	Electives (Any one)					
I	6.0	Sem-II	PGDAN02C1 Adult and Geriatric Nutrition Theory (4 Cr)	PGDAN02C5E1A Entrepreneurship and Innovation in Clinical Nutrition Theory (2 Cr)	-	PGDAN02C6 On the Job training (4 Cr)	-	22	PG Diploma (after 3 Year Degree)
			PGDAN02C2 Micronutrients in Human Health and Disease Theory (4 Cr)	PGDAN02C5E1BP Entrepreneurship and Innovation in Clinical Nutrition Practical (2 Cr)					
			PGDAN02C3A Clinical Nutrition and Therapeutic Dietetics Theory (2 Cr) PGDAN02C3BP Therapeutic Dietetics - II Practical (2 Cr)	OR PGDAN02C5E2A Digital technology in Dietetics Theory (2 Cr) PGDAN02C5E2BP Digital technology in Dietetics Practical (2 Cr)					
			PGDAN02C4 Advanced Statistics in Home Science Theory (2 Cr)						
Sem – II For P.G. Diploma (One - Year)			14	4	-	4	-	22	
Cum. Cr. For PG Diploma			28	8	4	4	-	44	

Note: Curriculum will be supplemented by Extension Work and Educational Trips for experiential learning with



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supplemental credits.

A MOOC course on SWAYAM/ NPTEL/COURSERA can be completed with supplemental credits. Students are required to do a Summer Internship/Project (4 weeks) as a mandatory requirement during the summer vacation with supplemental credits.

Note: * The number of courses can vary for totaling 14 Credits for Major Mandatory Courses in a semester as illustrated.



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Sign of Dean

Name of the Head of the Institute with
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Home Science

Name of the Faculty

Name of Department
Foods, Nutrition and Dietetics



Syllabus: P.G. Diploma in Home Science – Dietetics and Applied Nutrition

Semester I

Level 6.0

Cumulative Credits: 22

Mandatory Course (Credits)

COURSE CODE	COURSE NO.	CREDITS	COURSE TITLE	THEORY/ PRACTICAL
PGDAN01C1A	Course 1 A	2	Physiology and Clinical Biochemistry	Theory
PGDAN01C1BP	Course 1 B	2	Health & Nutrition Assessment	Practical
PGDAN01C2	Course 2	4	Macronutrients in Human Health and Disease	Theory
PGDAN01C3A	Course 3 A	2	Preventive Dietetics	Theory
PGDAN01C3BP	Course 3 B	2	Therapeutic Dietetics	Practical
PGDAN01C4	Course 4	2	Descriptive Statistics in Home Science	Theory
PGDAN01C5E1A & PGDAN01C5E1BP	Course 5 (Elective)	2	Applications of Food Science in Development of Therapeutic Foods	Theory
		2	Applications of Food Science in Development of Therapeutic Foods	Practical
PGDAN01C5E2A & PGDAN01C5E2BP		2	Multi-Disciplinary Strategies for Health and Disease Management	Theory
		2	Multi-Disciplinary Strategies for Health and Disease Management	Practical
PGDAN01C6	Course 6	4	Research Methods in Home Science	Theory



Syllabus: P.G. Diploma in Home Science – Dietetics and Applied Nutrition

Semester II

Level 6.0

Cumulative Credits: 22

Mandatory Course (Credits)

COURSE CODE	COURSE NO.	CREDITS	COURSE TITLE	THEORY/ PRACTICAL	
PGDAN02C1	Course 1 A	4	Adult and Geriatric Nutrition	Theory	
PGDAN02C2	Course 2	4	Micronutrients in Human Health and	Theory	
PGDAN02C3A	Course 3 A	2	Clinical Nutrition and Therapeutic Dietetics	Theory	
PGDAN02C3BP	Course 3 B	2	Therapeutic Dietetics - II	Practical	
PGDAN02C4	Course 4	2	Advanced Statistics in Home Science	Theory	
PGDAN02C5E1A & PGDAN02C5E1BP	Course 5 (Elective)	2	Entrepreneurship and Innovation in Clinical Nutrition	Theory	
		2	Entrepreneurship and Innovation in Clinical Nutrition	Practical	
PGDAN02C5E2A & PGDAN02C5E2BP		2	Digital Technology in Dietetics	Theory	
		2	Digital Technology in Dietetics	Practical	
PGDAN01C6		Course 6	4	On the Job training	



Syllabus:
**P.G. Diploma in Home Science – Dietetics
and Applied Nutrition**
(Semester II)

Page 17 of 83



Prof. Dr. Vishaka Ashish Karnad

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Semester-II

Page 18 of 83



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I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

Semester-II: Mandatory Courses

Page 19 of 83



Prof. Dr. Vishaka Ashish Karnad

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P.G. Diploma in Home Science – Dietetics and Applied Nutrition

**Level – 6.0
(Under NEP)**

Semester- II

Major (Mandatory Course)

Course Code	Title of the Course	Th/Pr	Credits
PGDAN01C1	Adult and Geriatric Nutrition	Theory	4

Course Objectives:

1. To enable students, assess the nutritional needs of adults and geriatric individuals, taking into consideration factors such as age, gender, activity level, and underlying health conditions.
2. To help students:
 - Understand and apply specific nutritional requirements for pregnancy, lactation, adulthood, and geriatric populations.
 - Analyze how physiological changes impact nutrition and health at different life stages.
 - Develop effective communication and counseling skills for educating and supporting diverse populations.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcome
CO1	Recall the key nutrients required by adults and their functions in maintaining health.
CO2	List common nutritional challenges faced by populations, such as malnutrition or micronutrient deficiencies.
CO3	Explain the physiological changes that occur with aging and how they impact nutritional needs.
CO4	Assess the nutritional status of adults using various assessment tools and interpret the results to identify nutritional deficiencies or risks.
CO5	Evaluate the effectiveness of nutrition counseling and dietary interventions in improving the health outcomes and nutritional status of adults.
CO6	Develop innovative strategies for addressing unique challenges in providing nutrition support to geriatric populations.

Unit No.	Course Content	No. of Hours
I.	A. Pre-Conception Nutrition <ol style="list-style-type: none">i. Fetal origins hypothesis and Later disease riskii. Nutrition related disruptions in fertility, other preconception nutrition concerns e.g., PCOS, eating disorders, female athlete triad, PMS,	15

Page 20 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

	<p>Contraception, Diabetes Mellitus etc.</p> <p>iii. Nutrition during Pregnancy</p> <p>iv. Physiology of pregnancy</p> <p>v. Embryonic and Fetal Growth and Development</p> <p>vi. Critical periods of growth and development</p> <p>vii. Pregnancyweight gain</p> <p>viii. Nutritional requirements during pregnancy (macro and micro nutrients)</p> <p>ix. Role of dietary supplements and physical activity</p> <p>x. Common problems associated with pregnancy –Nausea, Vomiting, Heartburn, Constipation, Obesity, GDM, PIH, HIV, multi fetalpregnancies, Fetal Alcohol Syndrome</p>	
II.	<p>Nutrition during Lactation</p> <p>i Lactation Physiology – Mammary gland development, Lactogenesis, Let-down reflex</p> <p>ii. Human milk composition</p> <p>iii. Benefits of breast feeding</p> <p>iv. Nutritional requirements & dietary guidelines for lactating mothers</p> <p>v. Role of galactagogues</p> <p>vi. Complications of breastfeeding</p> <p>vii. Supplements and maternal medications</p>	15
III.	<p>Nutrition in Adult Years</p> <p>i. Physiological and psychological changes</p> <p>ii. Common nutritional concerns,</p> <p>iii. Dietary recommendations and nutritional requirements</p> <p>iv. Physical activity – factors influencing food and nutrient intake</p> <p>v. Chronic conditions and defensive health paradigm</p> <p>vi. Special health concerns of adult woman</p>	15
IV.	<p>Nutrition for Geriatrics</p> <p>i. Physiological, metabolic and body composition changes and its impact on health and nutritional status</p> <p>ii. Theories of aging, nutritional risk factors</p> <p>iii. Nutritional requirements and dietary recommendations, physical activity</p> <p>iv. Nutrition concerns under special/chronic conditions – heart disease, stroke, hypertension, diabetes mellitus, obesity and underweight, osteoporosis, GI diseases, cognitive disorders.</p> <p>v. Promoting fitness and well-being using both modern and traditional approaches</p>	15
	Total hours	60

References:

- Nutrition Across the Lifespan for Healthy Aging: Proceedings of a Workshop. (2017). United States: National Academies Press.
- Ageing and Nutrition Through Lifespan. (2020). Switzerland: Mdpi AG.
- Shepherd, S., Thodis, A. (2020). Food and Nutrition Throughout Life: A Comprehensive Overview of Food and Nutrition in All Stages of Life. United Kingdom
- Brown, J. E., Isaacs, J. S. (2011). Nutrition Through the Life Cycle. United Kingdom: Wadsworth Cengage Learning.
- Langley-Evans, S. (2013). Nutrition: A Lifespan Approach. Germany: Wiley.
- Nutraceuticals in Brain Health and Beyond. (2020). Netherlands: Elsevier Science.



- Bernstein, M., McMahon, K. (2022). Nutrition Across Life Stages. United States: Jones & Bartlett Learning.
- Bennion, H. (1979) Clinical Nutrition, New York Harper and Row Publishers
- Brown, J. E. (1998). Nutrition Now, West/Wadsworth: International Thomson Pub. Co.
- Brown, J. E., Sugarman, I. J. (2002). Nutrition through the Life Cycle, Wadsworth Thomson Learning.
- Groff, J. L and Gropper, S. S. (1999). Advanced Nutrition and Human Metabolism, Belmont CA: Wadsworth/Thomson Learning.
- Jackson, M. S., Rees, Jane, M., Golden, Neville, H.; Irwin Charles, E. (ed) (1997). Adolescent Nutritional Disorders. New York: The New York Academy of Science.

Evaluation:

4 credits (Total marks 100)

CONTINUOUS INTERNAL EVALUATION:	Marks
Class participation, Written and oral presentations on assigned topic / Literature review with class discussion	20
Class test/ Quiz/ Group Discussion	20
Creating learning resources (videos or posters or brochures)	10
Total Marks for Internal Assessment	50
SEMESTER-END EXAMINATION:	Marks
All questions are compulsory with internal choice.	
Question 1 from Unit 1	10
Question 2 from Unit 2	10
Question 3 from Unit 3	10
Question 4 from Unit 4	10
Question 5 from multiple units	10
Total Marks for Semester End Examination	50



P.G. Diploma in Home Science – Dietetics and Applied Nutrition

**Level – 6.0
(Under NEP)**

Semester- II

Major (Mandatory Course)

Course Code	Title of the Course	Th/Pr	Credits
Course 2	Micronutrients in Human Health and Disease	Theory	4

Course Objectives:

1. To enable students, get an insight into the role of Nutrition in growth and development.
2. To help students understand the importance of nutrition in maintaining optimal body composition.
3. To update students on the recent advances in Human Nutrition with respect to micronutrients.
4. To guide students, evaluate the impact of different micronutrients on wellness.
5. To enable students, understand the need and concerns of genetic modification of foods.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcome
CO1	Recall the essential micronutrients required for human health, such as vitamins and minerals.
CO2	Explain the roles and functions of different micronutrients in maintaining human health and preventing deficiencies.
CO3	Describe the consequences of micronutrient deficiencies and excesses in relation to specific diseases.
CO4	Apply knowledge of micronutrient requirements to develop dietary plans that address specific health conditions or populations with unique nutritional needs.
CO5	Critically assess scientific literature and research studies on micronutrients to evaluate their implications for human health and disease prevention.
CO6	Assess the impact of public health initiatives and policies addressing micronutrient fortification or supplementation.
CO7	Evaluate the impact of different micronutrients on wellness.

Unit No.	Course Content	No. of Hours
I.	A. Micronutrients-Vitamins: i. Over view of Classification ii. Digestion, absorption and transportation iii. Current research in the functions iv. Requirements v. Deficiency & toxicity vi. Assessment of nutritional status of: <ul style="list-style-type: none">• Fat soluble vitamins– A, D, E & K	15



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	<ul style="list-style-type: none"> • Water soluble vitamins (B-Complex vitamins and vitamin C). <p>B. Interrelationship between vitamins; & vitamins and macronutrients</p>	
II.	<p>A. Micronutrients- Minerals:</p> <ol style="list-style-type: none"> Over view of Classification Digestion, absorption and transportation Current research in the functions Requirements Deficiency & toxicity Assessment of nutritional status of: <ul style="list-style-type: none"> • Macro minerals– Na, K, Ca, Phosphorus, Magnesium and Sulphur • Micro minerals– Iron, Iodine, Zinc and Fluoride • Trace Minerals– Cadmium, Chromium, Lead, Manganese, Nickel, Boron, Molybdenum, Copper and Selenium <p>B. Mineral-Mineral interactions</p> <p>C. Interrelationship between vitamins & minerals; Interrelationship between macro and micronutrients</p>	15
III.	<p>Recent advances in nutritional requirements for special conditions:</p> <ol style="list-style-type: none"> Extreme climatic conditions High altitude Space nutrition Nutrition during natural calamities Defence system 	15
IV.	<p>Complementary Nutrition (Basic and advanced aspects)</p> <ol style="list-style-type: none"> Classification Health benefits Mechanism of action Sources & recommendations Concerns Regulations of: <ul style="list-style-type: none"> • Prebiotics, Probiotics and Synbiotics • Bioactive Dietary Components, Functional foods, Phytochemicals, Flavonoids, Phytoestrogens • Meal Replacers 	15
	Total hours	60

References:

- Anderson, L., Dibble, M. and Mitchell, H. (2012) Nutrition in health and disease, 17th ed., J.B. Lippincott Co. Philadelphia
- Bamji, M., Rao, P. N. and Reddy, V. Textbook of Human Nutrition, Oxford: IBH Pub. Co. 6
- Co. Williams, Cand Devlin, T.J. (1992) Foods nutrition and sports performance E and N Sposs I Ed.
- Davidson, S., Passmore, R., Brock, J and Truswell, A., (2019) Human nutrition and dietetics, 6th ed., ELBS Edinburgh.
- Goodhart R.S.S and Shils, M.E (1998) Modern nutrition in health and disease. Philadelphia Lea and Febiger.
- Grodd, J.L. and Gropper, S.S. (1999) Advanced Nutrition and human metabolism. Belmont CA Wodworth/ Thomson learning.
- Guthrie, H. (2016) Introductory Nutrition, 6th ed., Times Mirror/Mosby College Publication.
- Judith E. Brown (1998) Nutrition Now, West/wadsworth International Thomson Pub.
- Paul, I, Turner, E.R., Ross, Don – 2006 (2nd ed.) Discovering Nutrition – Jones and Bartlett Publishers – Canada.
- Geissler, C., Powers, H (11th ed.) (2005) Human Nutrition ELSEVIER Churchill Livinstone.



Robinson, C. and Lawler, M., (2012) Normal and therapeutic nutrition, 16th ed., Macmillan publishing Co. New York
 Shils, M.E., Olson, J., Shike, M. and Roos, C (2003). Modern Nutrition in Health and Disease, 9th edition.
 Williams and Williams. A Beverly Co. London. Stipanuk Martha H. 2006 Biochemical, physiological, molecular aspects
 of human nutrition – Saunders ELSEVIER.
 Williams, S. (2021) Nutrition and diet therapy, 8th ed., Missouri: The C.V. Masby Co.
 Zegler, E.E and Filer, L.J. (1996) Present knowledge in nutrition. Washington D.C. International Life Sciences Institute.

Evaluation:

4 credits (Total marks 100)

CONTINUOUS INTERNAL EVALUATION:	Marks
Class participation, PowerPoint presentation/ Literature review with class discussion	20
Critical analysis/ Literature review/Preparation of learning resources (videos/ posters/ brochures) for nursing or dietetic students	20
Class test/ Quiz/ Debate	10
Total Marks for Internal Assessment	50
SEMESTER-END EXAMINATION:	Marks
All questions are compulsory with internal choice.	
Question 1 from Unit 1	10
Question 2 from Unit 2	10
Question 3 from Unit 3	10
Question 4 from Unit 4	10
Question 5 from multiple units	10
Total Marks for Semester End Examination	50



P.G. Diploma in Home Science – Dietetics and Applied Nutrition

**Level – 6.0
(Under NEP)**

Semester- II

Major (Mandatory Course)

Course Code	Title of the Course	Th/Pr	Credits
PGDAN02C3A	Clinical Nutrition and Therapeutic Dietetics	Theory	2

Course Objectives:

To help students:

1. Gain a deep understanding of preventive measures and their significance in tackling disease burden.
2. Understand the etiological factors and physiological changes associated with specific disease conditions and develop an insight into the role of modified diets in specific conditions.
3. Acquire the basic skills required to modify the normal diet to suit individuals suffering from specific diseases and lifestyle disorders.
4. Apply concepts of therapeutic dietetics in community/ clinical settings.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcome
CO1	List key lifestyle factors that contribute to the development of diseases.
CO2	Explain the physiological basis of various diseases and conditions, including their impact on nutrient metabolism and requirements.
CO3	Describe the role of therapeutic diets in the prevention and management of medical conditions.
CO4	Utilize dietary modification techniques to address the nutritional needs of patients with specific medical conditions.
CO5	Analyze patient case studies to identify nutritional risk factors, assess dietary intake, and recommend appropriate therapeutic diets.
CO6	Evaluate the effectiveness of dietary interventions in improving patient health outcomes and managing medical conditions.
CO7	Design comprehensive nutrition care plans for patients with complex medical conditions, integrating dietary recommendations with medical treatment plans.
CO8	Develop innovative strategies for promoting dietary adherence and patient education in clinical settings.



Unit No.	Course Content	No. of Hours
I.	A. Disorders of the Gastro Intestinal system <ol style="list-style-type: none"> i. GERD and esophagitis ii. Gastroparesis iii. Gastritis iv. Peptic Ulcers v. Gluten Induced Enteropathy vi. Lactose intolerance vii. Inflammatory bowel Disease viii. Short Bowel Syndrome ix. Small intestinal Bacterial Overgrowth and Dysbiosis x. Irritable Bowel Syndrome xi. Diverticulitis and Hemorrhoids 	15
II.	A. Respiratory diseases <ol style="list-style-type: none"> i. Bronchitis ii. COPD iii. Asthma iv. Cystic Fibrosis A. Diseases of the Liver and Gall bladder <p>Liver Diseases</p> <ol style="list-style-type: none"> i. Hepatitis ii. Cirrhosis iii. Effects of alcohol on the Liver <p>Gall Bladder</p> <ol style="list-style-type: none"> i. Cholecystitis ii. Dyskinesia iii. Cholelithiasis C. Renal Diseases <ol style="list-style-type: none"> i. Glomerulonephritis ii. Nephrotic Syndrome iii. Nephrolithiasis 	15
	Total hours	30

References:

- Barrer. K. (2007) Basic Nutrition Counselling Skill Development. Wadsworth Pub
- Bendich, A., & Deckerbaum, R. J. (Eds.). (2006). Preventive Nutrition: The Comprehensive Guide for Health Professionals. Springer.
- Bendich, A., & Deckerbaum, R. J. (Eds.). (2016). Preventive Nutrition: The Comprehensive Guide for Health Professionals. Humana Press.
- Blake, J. S. (2018). Nutrition: From Science to You. Pearson.
- Blake, J. S. (2020). Nutrition and You: Core Concepts for Good Health. Pearson.
- Brown, J. E. (2019). Nutrition Through the Life Cycle. Cengage Learning.
- Journal of American Dietetic Association.
- Lutz, C. A., Przytulski, K. R., & Rutherford, K. L. (2015). Nutrition and Diet Therapy. F.A. Davis Company.
- Mahan, L. K., & Raymond, J. L. (2021). Krause's Food & the Nutrition Care Process. 15th edition. Elsevier. Nutrition Review
- Pope, J., & Berman, M. (2017). Nutrition for a Changing World. Wadsworth Publishing.
- Shills. M. (2006). Modern Nutrition in Health and Disease. 10th ed. Lippincot William and Wilkins.
- Sizer, F., & Whitney, E. (2020). Nutrition: Concepts and Controversies. Cengage Learning.



Evaluation:

2 credits (Total marks 50)

CONTINUOUS INTERNAL EVALUATION:	Marks
Class participation, Create a brand (website/ logo), create a nutrition care process model and use social media for nutrition education/ Design a preventive module for community on a chosen topic using oral, written and social media communication	10
Developing a nutrition education resources on preventive health for nurses/ doctors/ dietitians	10
Quiz/ Debate/ Class discussion/ Debate	5
Total Marks for Internal Assessment	25
SEMESTER-END EXAMINATION:	Marks
All questions are compulsory with internal choice.	
Question 1 from Unit 1	10
Question 2 from Unit 2	10
Question 3 from multiple units	5
Total Marks for Semester End Examination	25



**P.G. Diploma in Home Science – Dietetics and Applied Nutrition
(Under NEP)**

Semester- II

Major (Mandatory Course)

Course Code	Title of the Course	Th/Pr	Credits
PGDAN02C3BP	Therapeutic Dietetics II	Practical	2

Course Objectives:

1. To provide a detailed practical aspect to the clinical conditions studied in theory.
2. To enable students to:
 - Do a detailed study of Medical Nutrition Therapy with appropriate literature review.
 - Analyze the given case.
 - Make a nutritional diagnosis with problem, etiology and symptom (PES) Statement and outline the goals of therapy.
 - Study of medical and surgical interventions which require nutritional management.
 - Propose a nutrition plan for the patient – with suggested outline of medical nutrition therapy with appropriate literature review, diet plan with detailed calculations and suggested supplements and adjuncts.
 - Prepare the selected meal.
 - Evaluate the suggested diet plans.
 - Prepare patient education resources.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcome
CO1	Recall key principles of therapeutic dietetics and their application in clinical settings.
CO2	Explain the rationale behind different therapeutic diets and their effects on health.
CO3	Apply knowledge of dietary modifications to create personalized meal plans for different medical conditions.
CO4	Demonstrate the ability to calculate nutrient content in therapeutic diets.
CO5	Compare and contrast various dietary approaches for managing similar health conditions.
CO6	Judge the suitability of therapeutic diets for patients with comorbidities or special dietary requirements.
CO7	Design comprehensive dietary plans that integrate therapeutic requirements, patient preferences, and cultural considerations.

Unit No.	Course Content	No. of Hours
I.	A. Planning of Diets:	30

Page 29 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

	i Planning diets using Medical Nutrition Therapy with allocation of macronutrients ii Menu Planning iii Detailed calculation to understand the efficacy of the plan iv Supplement usage v Outline recommendations in easily understood format vi Planning for the following conditions: <ul style="list-style-type: none"> • Gastro Intestinal system: GERD, Esophagitis, Gastritis, Peptic Ulcer, Gluten Induced Enteropathy, Irritable Bowel Syndrome, Diverticulitis • Disease of Liver, Pancreas and Gall bladder: Hepatitis, Cirrhosis, Alcoholic Cirrhosis, Hepatic Encephalopathy, Wilsons disease, Cholecystitis, Cholelithiasis, Pancreatitis. B. Preparation of the prescribed therapeutic food samples with respect to the above cases	
II.	A. Planning of Diets: i Planning diets using Medical Nutrition Therapy with allocation of macronutrients ii Menu Planning iii Detailed calculation to understand the efficacy of the plan iv Supplement usage v Outline recommendations in easily understood format vi Planning for the following conditions: <ul style="list-style-type: none"> • Renal disease: Glomerulonephritis, Nephrotic Syndrome Acute Renal failure, Chronic Renal failure and ESRD, Nephrolithiasis • Respiratory disease: COPD, Asthma, Cystic Fibrosis B. Preparation of the prescribed therapeutic food samples with respect to the above cases	30
	Total hours	60

References:

- Brown, J. (2002). Nutrition through the Lifecycle. Wadsworth Pub Co.
 Garrow, J.S (1993). Human Nutrition and Dietetics 9th ed. Churchill Livingstone Pub.
 Gibney, J.M. (2005). Clinical Nutrition Blackwell Publishing House.
 Gopalan.C. (2000). Nutritive Value of Indian Foods. NIN ICMR Pub.
 Jamison, J. (2003). Clinical Guide to Nutrition and Dietary Supplements in Disease Management Churchill – Livingstone Pub.
 Jeejeebhoy, et al (1988). Nutrition and Metabolism in Patient Care.
 King, K. (2003). Nutrition Therapy 2nd ed. Helm Publishing, Texas.
 Kathryn Pinna (Author), Sharon Rady Rolfes, Ellie Whitney: Understanding Normal and Clinical Nutrition, 12th Edition. (2020), Brooks/Cole publishers.
 L. Kathleen Mahan: Krause's Food & the Nutrition Care Process, 14th Edition, (2017), Saunders Publishers.
 Peckenpaugh, N (2003). Nutrition Essentials and Diet Therapy. 9th ed.
 Sauberlich. H (1999) Laboratory Tests for the Assessment of Nutritional Status 2nd ed. CRC Press.
 Saunders Pub Co. Blackwell Scientific Publication (1994). Manual of Dietetic Practice. 2nd ed.
 Shills, M. (2006). Modern Nutrition in Health and Disease. 10th ed. Lippincot.
 W.B.Saunders CO. Lee, R.D. (2003). Nutritional Assessment 3rd ed. Mc Graw Hill Pub.
 Whitney.C. (2006) Understanding Normal and Clinical Nutrition. Wadsworth publication.
 William and Wilkins ICMR Pub. (2000). Nutrient Requirement and Recommended Dietary Allowances for Indians.

Evaluation:

2 credits (Total marks 50)

CONTINUOUS INTERNAL EVALUATION:	Marks
Class participation, Journal	5



Continuous Evaluation: Assessment of case studies	20
Total Marks for Internal Assessment	25
SEMESTER-END EXAMINATION:	Marks
Construction of a case specific diet plan	20
Viva Voce examination	5
Total Marks for Semester End Examination	25



P.G. Diploma in Home Science – Dietetics and Applied Nutrition

**Level – 6.0
(Under NEP)**

Semester- II

Major (Mandatory Course)

Course Code	Title of the Course	Th/Pr	Credits
PGDAN02C4	Advanced Statistics in Home Science	Theory	2

Course Objectives:

1. To enable students value the crucial role of advanced/inferential statistics in quantitative research.
2. To enable students master the prerequisite concepts needed for the use of advanced/inferential statistics.
3. To enable in students the skills in selecting, computing, interpreting and reporting advanced statistics.
4. To facilitate students in learning how to run advanced statistical tests using SPSS.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcome
CO1	Students will be able to explain each of the prerequisite concepts needed for the use of advanced/inferential statistics (e.g., sampling distribution, Type I and Type II errors, central limit theorem, standard error).
CO2	Students will be able to identify the types of variables needed for each advanced statistical test and the level of measurement of each selected variable, and also meet test assumptions, such that the advanced statistical test can be used in a suitable manner.
CO3	Students will be able to identify, differentiate between, evaluate, select, and use (compute, interpret and report test results for) different advanced statistical tests to compare and contrast phenomena.
CO4	Students will be able to identify, differentiate between, evaluate, select, and use (compute, interpret and report test results for) different advanced statistical tests to examine interrelationships between phenomena.
CO5	Students will have the necessary knowledge and skills to design and conduct explanatory research design studies.
CO6	Students will demonstrate working knowledge of the use of SPSS for selected advanced statistical tests.

Unit No.	Course Content	No. of Hours
I.	A. Prerequisite concepts needed for the use of advanced/inferential statistics (i) Types of distribution Frequency distribution Normal distribution & departures from normality Probability distribution Sampling distribution	15

Page 32 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

	(ii) Central limit theorem & normality of sampling distributions (iii) Test assumptions, & parametric and nonparametric methods (iv) Point estimation vs. interval estimation (v) Standard error (and confidence intervals) (vi) Null hypothesis vs. alternative hypotheses (vii) Significant vs. nonsignificant findings, Type I error vs. Type II error, Type I error and levels of significance B. Using an advanced statistical method (steps in using an advanced statistical method)	
II.	A. To study statistics that allows us to contrast phenomena (a) Univariate chi-square test (b) Bivariate chi-square test (c) One sample t-test (d) t- or z- test for contrasting two independent groups (e) Paired t-test (f) one-way independent groups ANOVA & conceptualizing other ANOVAs B. To study statistics that allows us to examine relationships between variables (a) Bivariate chi-square test (b) Product-moment correlation coefficient & conceptualizing applications for simple linear regression C. Ethics in the use of statistics (e.g., the importance of test assumptions, the number of statistical tests in a research and levels of significance)	15
	Total hours	30

References:

- Bhattacharyya, G.K., & Johnson, R.A. (1977). *Statistical concepts and methods*. John Wiley. (classic)
- Jackson, S. L. (2012). *Research methods and statistics: A critical thinking approach* (4th ed.). Wadsworth Cengage Learning.
- Johnson, R. A., & Bhattacharyya, G. K. (2019). *Statistics: Principles and methods* (8th ed.). John Wiley.
- Martin, W. E., & Bridgmon, K. D. (2012). *Quantitative and statistical research methods*. Jossey-Bass.
- Kachigan, S. K. (1986). *Statistical analysis: An interdisciplinary introduction to univariate & multivariate methods*. Radius Pr.
- Kerlinger, F. N. & Lee, H. B. (2000). *Foundations of behavioral research*. Harcourt.
- Wheelan, C. J. (2014). *Naked statistics: Stripping the dread from the data*. W.W. Norton.

Evaluation:

2 credits (Total marks 50)

CONTINUOUS INTERNAL EVALUATION:	Marks
Written Short Quizzes (individually) & Problem-solving Exercises (in pairs or small groups)	5
Completion of an Add-On SPSS short-term course on using SPSS to compute the following advanced statistical tests and their nonparametric equivalents: univariate chi square, bivariate chi square, one sample t-test, t- or z-test of independent groups, paired t-test, one-way independent groups ANOVA, and correlation coefficient.	10
Practice Sums (individually), at least three for each of the following: standard error of the mean, univariate chi square, bivariate chi square, one sample t-test, t- or z-test of independent groups, paired t-test, one-way independent groups ANOVA, and correlation coefficient.	10
Total	25
SEMESTER-END EXAMINATION:	Marks
All questions are compulsory with internal choice.	



Question 1 from Unit 1	10
Question 2 from Unit 2	10
Question 3 from multiple units	5
Total	25



Semester-II: Elective Courses

Page 35 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

P.G. Diploma in Home Science – Dietetics and Applied Nutrition
Level- 6.0
(Under NEP)

Semester- II

Major (Elective Course)

Course Code	Title of the Course	Th/Pr	Credits
PGDAN02C5E1A	Entrepreneurship and Innovation in Clinical Nutrition	Theory	2

Course Objectives:

1. To help students:

- Understand the principles of entrepreneurship and innovation in the context of clinical nutrition and healthcare.
- Explore various forms of healthcare entrepreneurship, such as private practice, consulting, and product development.
- Develop skills in creating business plans and strategies for launching clinical nutrition services or innovative nutrition-related products.
- Evaluate the market potential and feasibility of entrepreneurial ventures and nutrition-related innovations.
- Analyze case studies of successful entrepreneurial initiatives in clinical nutrition to identify best practices and lessons learned.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcome
CO1	Recall the fundamental concepts of entrepreneurship and innovation in the context of clinical nutrition.
CO2	Explain the importance of entrepreneurship and innovation in addressing challenges and improving healthcare outcomes in clinical nutrition.
CO3	Describe the various forms of healthcare entrepreneurship, such as private practice, consulting, or product development.
CO4	Apply entrepreneurial principles to develop business plans or strategies for launching clinical nutrition services or products.
CO5	Utilize innovative thinking to identify opportunities for improving patient care and nutrition-related solutions in healthcare settings.
CO6	Evaluate the market potential and feasibility of innovative nutrition-related products or services.



CO7	Evaluate the effectiveness of entrepreneurial initiatives in addressing specific clinical nutrition challenges or improving patient outcomes.
CO8	Generate novel ideas and strategies for addressing emerging healthcare nutrition trends and needs.

Unit No.	Course Content	No. of Hours
I.	<ol style="list-style-type: none"> 1. Introduction to Entrepreneurship in Nutrition <ol style="list-style-type: none"> a. Overview of Entrepreneurship: Concepts, Characteristics, and Mindset b. Identifying Opportunities in the Nutrition Industry c. Entrepreneurial Challenges and Success Stories in Nutrition 2. Basics of Nutrition and Market Trends <ol style="list-style-type: none"> a. Current Trends and Innovations in the Nutrition Market b. Market Analysis and Dynamics in the Health and Wellness Industry 3. Business Planning for Nutrition Ventures <ol style="list-style-type: none"> a. Developing a Business Idea in the Nutrition Sector b. Creating a Business Plan: Structure and Components c. Financial Planning and Budgeting for Nutrition Start-ups 4. Market Research Strategies in Nutrition <ol style="list-style-type: none"> a. Introduction to Market Research in Nutrition in various areas: Clinical set-up, Food Service management, Food product development, Catering for industries with issues, Nutrition Education b. Primary and Secondary Research Methods c. Data Collection and Analysis Techniques 	15
II.	<ol style="list-style-type: none"> 1. Consumer Behavior in Nutrition <ol style="list-style-type: none"> a. Understanding Consumer Preferences in Nutrition b. Influencing Factors in Purchasing Decisions 2. Branding and Marketing for Nutrition Start-ups <ol style="list-style-type: none"> a. Branding Strategies for Nutrition Products b. Digital Marketing in the Nutrition Industry c. Building a Strong Online Presence 3. Legal and Regulatory Considerations in the Nutrition Sector <ol style="list-style-type: none"> a. Compliance and Regulations for Nutrition Products b. Intellectual Property Protection c. Ethical Considerations in Nutrition Entrepreneurship 	15



	4. Funding and Financing in Nutrition Ventures a. Funding Options for Start-ups in Nutrition b. Pitching to Investors: Strategies and Techniques c. Government Grants and Support Programs for Nutrition Entrepreneurs	
	Total hours	30

References:

- Ariely, D. (2008). Predictably Irrational: The Hidden Forces That Shape Our Decisions. HarperCollins.
Aaker, D. A. (2010). Building Strong Brands. Simon and Schuster.
Berger, J. (2013). Contagious: How to Build Word of Mouth in the Digital Age. Simon and Schuster.
Buettner, D. (2015). The Blue Zones Solution: Eating and Living Like the World's Healthiest People. National Geographic Society.
Burns, A. C., & Bush, R. F. (2014). Marketing Research. Pearson.
Calacanis, J. (2017). Angel: How to Invest in Technology Startups. Harper Business.
Christensen, C. M. (2016). The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail. Harvard Business Review Press.
Cialdini, R. B. (2006). Influence: The Psychology of Persuasion. HarperCollins.
Cremades, A. (2016). The Art of Startup Fundraising: Pitching Investors, Negotiating the Deal, and Everything Else Entrepreneurs Need to Know. John Wiley & Sons.
Feld, B., & Mendelson, J. (2011). Venture Deals: Be Smarter Than Your Lawyer and Venture Capitalist. John Wiley & Sons.
Harvard Business Review. (2017). HBR Case Studies: Keeping Strategy on Track. Harvard Business Review Press.
Hoffman, R., & Yeh, C. (2018). Blitzscaling: The Lightning-Fast Path to Building Massively Valuable Companies. Currency.
Lenssen, G. G., & Paton, B. (2016). Sustainable Business: An Executive's Primer. World Scientific Publishing.
Mann, R. A., & Roberts, B. S. (2017). Business Law and the Regulation of Business. Cengage Learning.
McQuarrie, E. F. (2018). The Market Research Toolbox: A Concise Guide for Beginners. SAGE Publications.
Osterwalder, A., & Pigneur, Y. (2010). Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. John Wiley & Sons.
Ries, E. (2011). The Lean Startup. Crown Business.
Sizer, F., & Whitney, E. (2015). Nutrition: Concepts and Controversies. Cengage Learning.
Thiel, P. (2014). Zero to One: Notes on Startups, or How to Build the Future. Crown Business.
Sanchez, M. C. (2017). Food Law and Regulation for Non-Lawyers. Springer.

Evaluation:

2 credits (Total marks 50)

CONTINUOUS INTERNAL EVALUATION:		Marks
Class participation, Literature review with class discussion		15
Critical analysis/ Preparation of learning resources (videos/ posters/ brochures) for student/ Group discussion/ Quiz/ Class Test		10
Total Marks for Internal Assessment		25
SEMESTER-END EXAMINATION:		Marks
All questions are compulsory with internal choice.		
Question 1 from Unit 1		10
Question 2 from Unit 2		10
Question 3 from multiple units		10
Total Marks for Semester End Examination		25



P.G. Diploma in Home Science – Dietetics and Applied Nutrition

**Level- 6.0
(Under NEP)**

Semester- II

Major (Elective Course)

Course Code	Title of the Course	Th/Pr	Credits
PGDAN02C5E1BP	Entrepreneurship and Innovation in Clinical Nutrition	Practical	2

Course Objectives:

1. To help students:

- Understand the principles of entrepreneurship and innovation in the context of clinical nutrition and healthcare.
- Explore various forms of healthcare entrepreneurship, such as private practice, consulting, and product development.
- Develop skills in creating business plans and strategies for launching clinical nutrition services or innovative nutrition-related products.
- Evaluate the market potential and feasibility of entrepreneurial ventures and nutrition-related innovations.
- Analyze case studies of successful entrepreneurial initiatives in clinical nutrition to identify best practices and lessons learned.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcome
CO1	Recall the fundamental concepts of entrepreneurship and innovation in the context of clinical nutrition.
CO2	Explain the importance of entrepreneurship and innovation in addressing challenges and improving healthcare outcomes in clinical nutrition.
CO3	Describe the various forms of healthcare entrepreneurship, such as private practice, consulting, or product development.
CO4	Apply entrepreneurial principles to develop business plans or strategies for launching clinical nutrition services or products.
CO5	Utilize innovative thinking to identify opportunities for improving patient care and nutrition-related solutions in healthcare settings.
CO6	Evaluate the market potential and feasibility of innovative nutrition-related products or services.
CO7	Evaluate the effectiveness of entrepreneurial initiatives in addressing specific clinical nutrition challenges or improving patient outcomes.



CO8	Generate novel ideas and strategies for addressing emerging healthcare nutrition trends and needs.
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Unit No.	Course Content	No. of Hours
I.	<p>A. Creation of an Entrepreneurial Project It should involve the following aspects:</p> <ol style="list-style-type: none"> Market Research Problem identification and Goal setting Strategy and Target group identification Planning the Entrepreneurial Project Running the Entrepreneurial Project Measurement of the efficacy of the campaign <p>(Any area of nutrition can be chosen)</p>	30
II.	<p>A. Guest Speaker Series: Entrepreneurs</p> <ol style="list-style-type: none"> Inviting guest speakers who have successfully launched clinical nutrition startups., existing wellness, sports and fitness industry, digital technology, clinical products, health kitchen. Sharing their experiences, challenges, and insights. Q&A session with guest speakers. 	30
	Total hours	60

References:

- Consumer-Driven Innovation in Food and Personal Care Products. (2010). India: Elsevier Science.
De Bernardi, P., Azucar, D. (2019). Innovation in Food Ecosystems: Entrepreneurship for a Sustainable Future. Germany: Springer International Publishing.
Huizenga, E. (2014). Knowledge Enterprise, The: Innovation Lessons From Industry Leaders (2nd Edition). Singapore: World Scientific Publishing Company.
Innovation Strategies in the Food Industry: Tools for Implementation. (2021). Netherlands: Elsevier Science.
Mejía-Trejo, J. (2022). Food Technology Neophobia Scale and Food Innovations Technology: Nutrition Needs & Business Alignment for Next Normal. (n.p.): SSRN.

Evaluation:

2 credits (Total marks 50)

CONTINUOUS INTERNAL EVALUATION:		Marks
Class participation, Viva-Voce examination		5
Development of a project and its presentation		20
Total Marks for Internal Assessment		25
SEMESTER-END EXAMINATION:		Marks



All questions are compulsory with internal choice.	
Question 1 Applications of food science from Unit 1	10
Question 2 Plan an experiment from Unit 2	10
Question 3: Viva-voce examination	5
Total Marks for Semester End Examination	25



P.G. Diploma in Home Science – Dietetics and Applied Nutrition

**Level- 6.0
(Under NEP)**

Semester- I

Major (Elective Course)

Course Code	Title of the Course	Th/Pr	Credits
PGDAN02C5E2A	Digital Technology in Dietetics	Theory	2

Course Objectives:

- To help students:
 - Understand and use digital tools and applications for dietary assessment, analysis, and client communication.
 - Collect dietary data digitally and ensure accuracy, completeness, and data privacy.
 - Analyze nutrition information generated by digital tools to provide evidence-based recommendations.
 - Evaluate the reliability and usability of digital dietary assessment tools.
 - Explore innovations in digital technology and their impact on dietetics and nutrition research.
 - Integrate digital technology into dietetics practice, optimizing workflows and enhancing client care.
 - Address ethical considerations related to data privacy, cultural sensitivity, and informed consent in digital dietetics practice.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcomes
CO1	Recall the basic principles of digital technology and its relevance in the field of dietetics.
CO2	Explain the significance of digital technology in dietetics for data collection, analysis, and communication with clients.
CO3	Describe the various digital tools and software commonly employed in dietary assessment and nutrition planning.
CO4	Apply digital technology to collect and analyze dietary intake data from clients or research participants.
CO5	Evaluate the effectiveness of digital technology in enhancing dietary counseling and nutrition education for clients.
CO6	Develop strategies for integrating digital technology into dietetics practice to improve efficiency and effectiveness.

Unit No.	Course Content	No. of Hours
I.	A. Introduction <ol style="list-style-type: none">Principles, characteristics, classificationEthics in digital marketing and technology	15

Page 42 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

	<p>c. Scope of using digital technologies and resources in Nutrition, lifestyle and health considerations</p> <p>B. Digital technology, resources and applications in nutrition assessments</p> <p>a. Digital resources for data collection for nutrition assessment</p> <p>b. Using mobile-phone technology</p> <p>c. Applications: digital food and lifestyle diaries, food choice and lifestyle monitoring, apps for screening tools, digital score generation of risk factors and knowledge attitudes and practices using add in apps</p> <p>d. Health monitoring: ambulatory BP monitoring, blood sugar monitoring</p> <p>C. Digital technology, resources and applications in Dietetics Practice</p> <p>a. Digital consultations and coaching</p> <p>b. Software for diet planning</p> <p>c. Software's for documentation of Nutrition Care Process</p> <p>d. AI (Artificial Intelligence) based Nutrition counselling</p> <p>e. Interactive Chatbots for patient support</p>	
II.	<p>A. Digital technology, resources and applications in Nutrition and Lifestyle education</p> <p>a. Websites, blogs and E learning resources and platforms</p> <p>b. Social media in nutrition education and support - Facebook, Instagram, WhatsApp</p> <p>B. Digital technology, resources and applications in hospital kitchens for</p> <p>a. Software for Purchasing, inventory and Menu planning</p> <p>b. Automation in hospital kitchens using software, robotics and AI</p> <p>c. Software for Meal scheduling and disbursal</p> <p>C. Digital technology, resources and applications in sustainable practices</p> <p>1. Tools for Digital Technology in Sustainable Dietetics:</p> <p>a. Smart Kitchen Appliances</p> <p>b. Meal Planning Apps with Sustainable Recipes</p> <p>c. Blockchain for Food Traceability</p> <p>2. Resources for Understanding Digital Technology in Sustainable Dietetics:</p> <p>a. Sustainable Nutrition Guidelines</p> <p>b. Online Courses on Sustainable Nutrition</p> <p>3. Applications of Digital Technology in Sustainable Dietetics:</p> <p>a. Telehealth Platforms for Virtual Consultations</p> <p>b. Personalized Nutrition Apps with Sustainability Metrics</p> <p>c. Digital Tools for Food Waste Reduction</p> <p>d. Educational Apps on Sustainable Eating</p> <p>e. Smart Agriculture Platforms for Locally Sourced Foods</p>	15
	Total hours	30

References:

- Digital Food Cultures. (2020). United Kingdom: Taylor & Francis.
- Digital Health Technology for Better Aging: A Multidisciplinary Approach. (2021). Germany: Springer International Publishing.
- Emerllahu, D. (2022). Technology Use by Registered Dietitians for Patient Care in an Outpatient Setting. United



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

States: Rochester Institute of Technology.

<https://www.unscn.org/uploads/web/news/UNSCN-Nutrition-45-WEB.pdf>

Šmahel, D., Macháčková, H., Šmahelová, M., Čevelíček, M., Almenara, C. A., Holubčíková, J. (2018). Digital Technology, Eating Behaviors, and Eating Disorders. Germany: Springer International Publishing.

Trends in Personalized Nutrition. (2019). Netherlands: Elsevier Science.

Wardlaw, G. M., Byrd-Bredbenner, C. (2012). Wardlaw's Perspectives in Nutrition. United Kingdom: McGraw-Hill Higher Education.

Evaluation:

2 credits (Total marks 50)

CONTINUOUS INTERNAL EVALUATION:	Marks
Class participation, Literature Review	10
Create a resource or complete a course	10
Class discussion	5
Total Marks for Internal Assessment	25
SEMESTER-END EXAMINATION:	Marks
All questions are compulsory with internal choice.	
Question 1 from Unit 1	10
Question 2 from Unit 2	10
Question 3 from multiple units	5
Total Marks for Semester End Examination	25



P.G. Diploma in Home Science – Dietetics and Applied Nutrition

**Level- 6.0
(Under NEP)**

Semester- II

Major (Elective Course)

Course Code	Title of the Course	Th/Pr	Credits
PGDAN02C5E2BP	Digital Technology in Dietetics	Practical	2

Course Objectives:

- To help students:
 - Understand and use digital tools and applications for dietary assessment, analysis, and client communication.
 - Collect dietary data digitally and ensure accuracy, completeness, and data privacy.
 - Analyze nutrition information generated by digital tools to provide evidence-based recommendations.
 - Evaluate the reliability and usability of digital dietary assessment tools.
 - Explore innovations in digital technology and their impact on dietetics and nutrition research.
 - Integrate digital technology into dietetics practice, optimizing workflows and enhancing client care.
 - Address ethical considerations related to data privacy, cultural sensitivity, and informed consent in digital dietetics practice.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcomes
CO1	Recall the basic principles of digital technology and its relevance in the field of dietetics.
CO2	Explain the significance of digital technology in dietetics for data collection, analysis, and communication with clients.
CO3	Describe the various digital tools and software commonly employed in dietary assessment and nutrition planning.
CO4	Apply digital technology to collect and analyze dietary intake data from clients or research participants.
CO5	Evaluate the effectiveness of digital technology in enhancing dietary counseling and nutrition education for clients.
CO6	Develop strategies for integrating digital technology into dietetics practice to improve efficiency and effectiveness.

Unit No.	Course Content	No. of Hours
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<p>I.</p>	<p>1. Digital Technology in Dietetics: a. Hands-on experience with mobile apps for data collection. b. Simulation of digital consultations and AI-based counseling.</p> <p>2. Digital Technology in Nutrition Assessments: a. Practical use of apps for nutrition assessment. b. Exploration of screening tools and health monitoring apps.</p> <p>3. Digital Technology in Dietetics Practice: a. Simulated digital consultations. b. Introduction to diet planning software and AI-driven counseling. c. Hands-on experience with interactive chatbots.</p> <p>4. Digital Technology in Nutrition and Lifestyle Education: a. Creation of an educational blog. b. Hands-on session on social media for nutrition education.</p> <p>5. Digital Technology in Hospital Kitchens: a. Practical exercises with software for menu planning and inventory.</p>	<p>30</p>
<p>II.</p>	<p>Case study presentation and Guest Speaker Series: a. Inviting guest speakers who have successfully launched clinical nutrition startups., existing wellness, sports and fitness industry, digital technology, clinical products, health kitchen, nutrition education. b. Sharing their experiences, challenges, and insights. c. Q&A session with guest speakers.</p>	<p>30</p>
	<p style="text-align: right;">Total hours</p>	<p>60</p>

References:

- Alman, B. M., Lambrou, P. (2013). Self-Hypnosis: The Complete Manual for Health and Self-Change, Second Edition. United Kingdom: Taylor & Fran
- Angleo, J. (2016). Spiritual Healing: Energy Medicine for Health & Well-being. United Kingdom: Pavilion Books.
- Art Therapy and Health Care. (2012). United States: Guilford Publications.
- Ayurveda: A Preventive Approach to Lifestyle Diseases. (2023). (n.p.): Book Bazooka Publication.
- Bays, J. C. (2017). Mindful Eating: A Guide to Rediscovering a Healthy and Joyful Relationship with Food (Revised Edition). United Kingdom: Shambhala.
- Church, D. (2012). Soul Medicine: Awakening Your Inner Blueprint for Abundant Health and Energy. United States: Hay House.
- Circadian Clocks: Role in Health and Disease. (2016). United States: Springer New York.
- Elkins, G. (2016). Handbook of Medical and Psychological Hypnosis: Foundations, Applications, and Professional Issues. United States: Springer Publishing Company.
- Henwood, S., Lister, J. (2007). NLP and Coaching for Health Care Professionals: Developing Expert Practice. Germany: Wiley.
- Jarmey, C., Hearn, G. (2001). The Book of Meditation: Practical Ways to Health and Healing. United States: Journey Editions.
- Khalsa, S. B., Cohen, L., McCall, T., Telles, S. (2016). Principles and Practice of Yoga in Health Care. United Kingdom: Jessica Kingsley Publishers.
- Luthra, O. P. (2016). Healing Without Medicine: Restoring Well-Being with Accupressure. India: B. Jain Publishers Pvt. Limited.
- Nelson JB. (2017). Mindful Eating: The Art of Presence While You Eat. Diabetes Spectr. 2017 Aug;30(3):171-174.



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

- Pittler, M. H., Wider, B. (2007). Complementary Therapies for Pain Management: An Evidence-based Approach. United Kingdom: Elsevier/Mosby.cis.
- Sant R. S. (2012). Meditation as Medication for the Soul. India: Radiance Publishers.
- Sarris, J., Wardle, J. (2010). Clinical Naturopathy: An Evidence-based Guide to Practice. United Kingdom: Elsevier Health Sciences.
- Scott Shannon. (2002). Complementary and Alternative Strategies for Mental Health. Elsevier Inc
- Tribole, E., Resch, E. (2020). Intuitive Eating, 4th Edition: A Revolutionary Anti-Diet Approach. United States: St. Martin's Publishing Group.

Evaluation:

2 credits (Total marks 50)

CONTINUOUS INTERNAL EVALUATION:	Marks
Class participation, Create a digital module for assessment, counseling and nutrition education	15
Continuous marking for each practice component	10
Total Marks for Internal Assessment	25

SEMESTER-END EXAMINATION:	Marks
Developing a strategy for management of a specific health condition	15
Journal	5
Viva-voce examination	5
Total Marks for Semester End Examination	25



Semester-II: On the Job Training

Page 48 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

P.G. Diploma in Home Science – Dietetics and Applied Nutrition

**Level – 6.0
(Under NEP)**

Semester- II

Type of Course: **OJT/ FP**

Course Code	Course Name	Th/Pr	Credits	Hours
PGDAN02C6	On Job Training/Field Project	Practical	4	120

Course Objectives:

1. To introduce students to Dietetics and Applied Nutrition related agency/organization and understand the nature of work offered.
2. To enhance subject related knowledge base development and learn to apply theoretical learnings on field.
3. To develop ethics and skill-sets required to be a Dietetics professional.
4. To develop a creative/innovative and entrepreneurial mind-set through working in and observing the organisation.
5. To become well versed in positive group dynamics and learn strategies for effective team work, leadership development and responsibility completion.

Course Outcomes (CO):

On successful completion of the course, the student will be able to:

CO No.	Course Outcome
CO 1	Identify different agencies/organizations related to Dietetics catering to people with different ages and needs.
CO 2	Enhance knowledge of the subject and be able to apply theories of Foods, Nutrition and Dietetics in the professional space
CO 3	Develop and demonstrate skill-sets and ethics expected out of a Dietetics professional.
CO 4	Apply creative, innovative and /or entrepreneurial concepts into professional practical settings
CO 5	Work effectively in teams with collaboration and responsibility.

Content of OJT:

1. Understanding the Vision, Mission, and Goals of the Organization

- Organizational Aspects: Familiarize oneself with the organogram, hierarchy, chain of command, and overall organizational structure.
- Roles and Responsibilities: Understand the specific roles and responsibilities of employees in the Dietetics Department.
- Acquaintance with Human Resource and Resource Management Policies (specifically with Dietetics) management, inventory control, standard operating procedures and any other services offered.
- HR Policies: Comprehend policies related to human resource management, ensuring a thorough understanding of employee rights and responsibilities.
- Inventory Control and SOPs: Learn the intricacies of inventory control, standard operating procedures, and other services offered within the department.

Page 49 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

2. **Aspects related to increasing the existing knowledge and skills; and specialised training to gain expertise in specific aspects in the field of Dietetics.**
 - Clinical Internship: Gain theoretical and practical insights in clinical settings, understanding patient nutrition requirements and therapeutic diets.
3. **Hands-On Training and Skill Development**
 - Equipment Use: Gain hands-on experience with equipment and tools related to the area of Dietetics – nutritional assessment; workflow process and counselling software.
 - Digital Media, Communication & Technology Application: Understand the application of technology – mechanical/AI/Robotics in nutritional assessment and diagnosis; utilizing relevant tools, equipment, and interpretation software.
 - Hands-On Projects and Case Studies: (One or more as applicable)
 - Diet Planning and Management: Apply tools and methods for diet assessment, planning and managing food production and service in real-world scenarios.
 - Counseling Experience: Engage in counseling sessions in both in-patient (IPD) and out-patient (OPD) settings.
 - Action research in: Dietetics/Nutrition Communication.
 - Content Development for consumer/patient awareness and education in print, voice or digital formats
4. **Development of Interpersonal Skills and Leadership**
 - Participation in Organizational Activities
 - Teamwork: Collaborate with organizational teams on existing or new projects, fostering interpersonal skills and leadership qualities.
 - Learning to work for consumer/ client satisfaction/ management
 - Community and Social Engagement: Plan and execute community and social engagement projects related to Dietetics.
5. **Inculcation of a mind-set of Research, Creativity, Innovation, and Entrepreneurship (One or more as applicable)**
 - Make a study of the organisation's initiatives in research, creativity, innovation and entrepreneurship.
 - Nutrition Communication Resources: Create communication resources, prototypes, or models to convey nutritional information effectively.
 - Entrepreneurial Venture: Develop a feasible product or service for entrepreneurial ventures, emphasizing unique features and feasibility, addressing specific needs and problems in the relevant field.
 - Case Studies and Project Work: Prepare and present case study reports or work on a research project aligned with industry needs.

Process Outline:

1. Preparation:

- Identifying the age and target group the student wants to work for; contacting different Human Development agencies/organisations catering to them and co-ordinating with staff in-charge to get approval and seek permission with the organisation.
- Procuring job profile and assisting the employer with tasks assigned within the framework of their job profile.
- Maintaining comprehensive observations/records of tasks accomplished.
- Making a self-reflection report at the end of every week.

2. Enhancing Practical Skills through OJT:

- The On-the-Job Training (OJT) program spans 4-6 weeks, requiring a minimum of 120 hours of physical presence at the organization.
- Students are expected to find their own OJT placements, although the institution provides support and guidance in securing positions with reputable organizations.
- OJT must be conducted outside the home institution to expose students to real-world work environments.
- OJT covers any subject within the syllabus, allowing students to align their experience with their academic interests.

Page 50 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

- In recognition of changing dynamics, some OJT sessions can be conducted online to accommodate virtual work environments.
- OJT will offer students the opportunity to apply classroom learning in a real-world setting, fostering the development of technical and non-technical skills.
- Mutual Benefits: Organizations gain insights into the program's curriculum and industry requirements, enabling them to provide constructive feedback and enhance course relevance.
- OJT bridges the gap between theoretical knowledge and practical application, preparing students for successful careers in Home Science

3. Interning Organizations:

Students have the flexibility to pursue their OJT in various types of organizations, including but not limited to:

- Dietetics organizations working with sustainability concepts
- Governmental and non-governmental organizations pertaining to dietetics
- Diet departments in hospitals
- Nutrition Clinics
- Entrepreneurs
- Global online internship programmes
- Dietetics startups

4. Role of OJT Mentors:

- To enhance the learning experience and ensure the quality of the MSc programme, each student participating in the OJT will be assigned two mentors:
 - i. A faculty mentor from the institution
 - ii. An industry mentor from the organization where the student is interning.
- By having both an industry mentor and a faculty mentor, students benefit from a comprehensive guidance system that combines industry expertise and academic support.

5. Role of Industry Mentor:

The industry mentor plays a crucial role in:

- Guiding the student during the internship.
- Ensuring that the intern fulfils the requirements of the organization and successfully meets the demands of the assigned project.
- Providing valuable insights into real-work practices and industry expectations through their expertise and experience.

6. Role of Faculty Mentor:

The faculty mentor serves as the overall coordinator of the OJT program.

- Oversee the entire internship process.
- Evaluate the quality of the OJT in a consistent manner across all students.
- Ensures that the OJT aligns with the programme objectives by providing valuable learning opportunities.
- Facilitates communication between the institution, industry mentor, and student ensuring a fruitful OJT experience.

7. Submission of Documentation for OJT

The student will make two documents as part of the OJT:

- Online Diary:** This ensures that the student updates daily activity, which could be accessed by both the mentors. Daily entry can be of 3- 4 sentences giving a very brief account of the learning/activities/interaction taken place. The faculty mentor will be monitoring the entries in the diary regularly.
- OJT Report:** A student is expected to make a report based on the OJT he or she has done in an organization. It should contain the following:
 - ✓ **Certificate:** A certificate in the prescribed Performa from the organization where the OJT was done.
 - ✓ **Title:** A suitable title giving the idea about what work the student has performed during the OJT.
 - ✓ **Description of the organization:** A small description of the organization where the student has interned.
 - Description of the activities done by the section where the intern has worked: A description of the section or cell of the organization where the intern worked. This should give an idea about the type of activity a new employee is expected to do in that section of the organization.

Page 51 of 83



Prof. Dr. Vishaka Ashish Karnad

I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

- Description of work allotted and done by the intern: A detailed description of the work allotted, and actual work performed by the intern during the OJT (Online/In Person/Onsite) period. It shall be the condensed and structured version of the daily report mentioned in the online diary.
- ✓ **Self-assessment:** A self-assessment by the intern on what he or she has learned during the OJT period. It shall contain both technical as well as interpersonal skills learned in the process.

8. Interaction between mentors:

- To ensure the smooth conduct of the OJT a meet-up involving the intern, industry mentor, and the faculty mentor will be scheduled as a mid-term review.
- The meeting can preferably be online to save time and resources.
- The meeting ensures the synergy between all stakeholders of the OJT.
- A typical meeting can be of around 15 minutes where at the initial stage the intern brief about the work and interaction goes for about 10 minutes.
- This can be followed by the interaction of the mentors in the absence of the intern. This ensures that issues between the intern and the organization, if any, are resolved.

9. OJT Workload for the Faculty: Every student is provided with a faculty member as a mentor. So, a faculty mentor will have a few students under him/her. A faculty mentor is the overall in charge of the OJT of the student. He/she constantly monitors the progress of the OJT by regularly overseeing the diary, interacting with the industry mentor, and guiding on the report writing etc. Considering the time and effort involved, a faculty mentor who is in-charge of 10-12 students shall be provided by a workload of 3 hours.

Evaluation:

4 credits (Total marks 100)

CONTINUOUS INTERNAL EVALUATION:		Marks
Online Diary		25
Mid-term interaction and case study presentation		25
Total		50
EXTERNAL EVALUATION:		Marks
OJT Documentation		25
Case Study Presentation		10
OJT Viva		15
Total		50



Letter Grades and Grade Points

Semester GPA/Programme CGPA Semester/ Programme	% of Marks	Alpha-Sign/ Letter Grade Result
9.00-10.00	90.0-100	O (Outstanding)
8.00-<9.00	80.0-<90.0	A+ (Excellent)
7.00-<8.00	70.0-<80.0	A (Very Good)
6.00-<7.00	60.0-<70	B+ (Good)
5.50-<6.00	55.0-<60.0	B (Above Average)
5.00-<5.50	50.0-<55.0	C (Average)
4.00-<5.00	40.0-<50.0	P (Pass)
Below 4.00	Below 40	F (Fail)
Ab (Absent)	-	Absent



Team for Creation of Syllabus

Name	College Name	Signature
Prof. Dr. Vishaka Karnad I/C Principal	College of Home Science Nirmala Niketan	
Ms. Vibha Hasija Head of the Department	College of Home Science Nirmala Niketan	
Ms. Fatima Aziz Kader Assistant Professor	College of Home Science Nirmala Niketan	
Dr. Tasneem Hussain Ravat Assistant Professor (Temporary: Self-financed Faculty)	College of Home Science Nirmala Niketan	

Sign of Head of the Institute

Sign of Dean

Name of the Head of the Institute with
Designation

Name of the Dean

Prof. Dr. Vishaka Ashish Karnad
I/C Principal &
Chairperson Board of Studies
Home Science

Name of the Faculty

Name of Department
Foods, Nutrition and Dietetics

Page 54 of 83



Prof. Dr. Vishaka Ashish Karnad
I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science

Appendix B

Justification for P.G. Diploma in Home Science – Dietetics and Applied Nutrition

1.	Necessity for starting the course:	<p>A 'P.G. Diploma in Dietetics and Applied Nutrition' is crucial to address the evolving complexities of nutrition and healthcare. This advanced degree equips students with specialized expertise, evidence-based practices, and clinical proficiency. The programme's interdisciplinary approach fosters collaboration with healthcare teams and prepares graduates for leadership roles in healthcare institutions, research, and public health interventions. Moreover, the programme aligns with the changing requirements for professional credentialing, offers opportunities for research and innovation, and meets the increasing demand for skilled nutrition professionals to tackle global health challenges.</p> <p>In a rapidly changing landscape of improved diagnosis and identification of early biomarkers of disease a 'P.G. Diploma in Dietetics and Applied Nutrition' meets the demand for a highly trained expert to plan out diet and nutrition based therapies. This programme provides an in-depth learning in various specialization areas of clinical nutrition addressing the need for both super-specialized and multi-disciplinary approach as a part of the health care team in total patient care and management. The Programme is designed to emphasize the application of evidence-based practice and enable interdisciplinary collaboration. The graduates in addition will be well-equipped to contribute to research advancements, use digital technology and apply entrepreneurial skills shaping the field's future trajectory and making substantial contributions to individual and public health.</p> <p>This course is in line with the values of the UN Sustainable Development Goals (SDGs) as well as the National Health Policy of Poshan Abhiyan, thus enabling the P.G. Diploma student to make strong and impactful contributions to national health.</p> <p>With NEP 2020, the time has come to meet the growing need for this program to transform into an M.Sc. Program.</p> <p>This extensive transfer of knowledge and skills is only possible with a two-year Master's degree. The program includes both classroom learning and intense industry interactions within the context of clinical nutrition.</p> <p>The qualification will be more valuable in addressing dietary concerns nationally and globally than the input received at the end of 1 year P.G. Diploma programme.</p>
2.	Whether the UGC has recommended the course:	Yes, P.G. Diploma in Dietetics and Applied Nutrition shall commence from the academic year 2023-2024.
3.	Whether all the courses have commenced from the academic year 2023-2024:	<p>P.G. Diploma in Dietetics and Applied Nutrition shall commence from the academic year 2023-2024 (Pending approval).</p> <p>Semester I and Semester II shall commence from the academic year 2023-2024.</p>
4.	The courses started by the University are self-financed,	<p style="text-align: center;">The course is SELF-FINANCED.</p> <p style="text-align: center;">Adequate eligible faculty members are recruited each year.</p>



	whether adequate number of eligible permanent faculties are available?	
5.	To give details regarding the duration of the Course and is it possible to compress the course?	One Year Full Time (Two Semesters) It is NOT advisable to compress the Programme. However, with the extensive developments in the field, there is a strong need to convert it into a 2 years degree programme.
6.	The intake capacity of each course and no. of admissions given in the current academic year:	Intake Capacity: 20 Number of admissions given in the current academic year: 20
7.	Opportunities of Employability/ Employment available after undertaking these courses:	Graduates can excel as dietitians, clinical nutritionists, pediatric nutritionists, community health practitioners, researchers, corporate wellness consultants, nutrition educators, food product developers, private practitioners, public health specialists, fitness and sports nutrition consultants, academic instructors, media experts, and consultants. They can reach out with nutrition education and diet plans digitally across the country and the globe. This advanced programme equips graduates with specialized skills to impact individual health, community well-being, and nutrition science, making them valuable assets in healthcare, research, education, and various industries. Students have a great scope for entrepreneurial ventures and can institute nutrition clinics, nutrition and lifestyle related foods, meals and service endeavors either in person or digitally.

Sign of Head of the Institute

Sign of Dean

Name of the Head of the Institute with
Designation

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Page 56 of 83



Prof. Dr. Vishaka Ashish Karnad
I/C Principal & Chairperson Ad-hoc Board of Studies in Home Science