



INTEGRAL UNIVERSITY, LUCKNOW

**INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES &
RESEARCH**

**DEPARTMENT OF PARAMEDICAL SCIENCES
NUTRITION AND DIETETICS**

(B. Sc. ND)

SYLLABUS

YEAR/ SEMESTER: III/V



Integral University, Lucknow
Department of Paramedical Sciences
Study and Evaluation Scheme

Program: B. Sc. ND

Semester-V

S. N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	ND301	Advance in diet therapy	Core	2	1	0	40	20	60	40	100	2:1:0	3
2	ND302	Research Methodology	Core	2	1	0	40	20	60	40	100	2:1:0	3
3	ND303	Community Nutrition	Core	2	1	0	40	20	60	40	100	2:1:0	3
4	ND304	Nutraceuticals and Functional food	Core	3	1	0	40	20	60	40	100	3:1:0	4
5	ND305	Sports Nutrition and Fitness	Core	3	1	0	40	20	60	40	100	3:1:0	4
PRACTICAL													
1	ND306	Advance in diet therapy Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
2	ND307	Community Nutrition Lab	Core	0	0	2	40	20	60	40	100	0:0:1	1
3	ND308	Clinical Posting	Core	0	0	12	40	20	60	40	100	0:0:6	6
Total				12	05	16	320	160	480	320	800	25	25

S. N.	Course code	Course Title	Type of Paper	Attributes							United Nation Sustainable Development Goal (SDGs)
				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
THEORIES											
1	ND301	Advance in diet therapy	Core	√	√	√			√	√	3,4
2	ND302	Research Methodology	Core	√	√	√			√	√	3,4
3	ND303	Community Nutrition	Core	√	√	√			√	√	3,4
4	ND304	Nutraceuticals and Functional food	Core	√	√	√			√	√	3,4
5	ND305	Sports Nutrition and Fitness	Core	√	√	√			√	√	3,4
PRACTICAL											
1	ND306	Advance in diet therapy Lab	Core	√	√	√			√	√	3,4
2	ND307	Community Nutrition Lab	Core	√	√	√			√	√	3,4
3	ND308	Clinical Posting	Core	√	√	√			√	√	3,4

L: Lecture **T:** Tutorials **P:** Practical **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination,
AE= Ability Enhancement, **DSE-** Discipline Specific Elective, **Sessional Total:** Class Test + Teacher Assessment **Subject Total:** Sessional Total + End Semester Examination (ESE)



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Effective from Session: 2024-25

Course Code	ND301	Title of the Course	ADVANCE IN DIET THERAPY	L	T	P	C
Year	III	Semester	V	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Advanced in Diet Therapy - Diseases" is to equip students with the knowledge and skills to design and implement personalized dietary modifications for individuals with various diseases, understanding the specific nutritional needs related to each condition and its pathophysiology, allowing them to effectively manage and prevent complications through nutrition interventions.						

Course Outcomes	
CO1	Aims to educate students on the crucial role of dietary modifications in managing and mitigating symptoms of various gastrointestinal (GI) disorders.
CO2	To educate students on how to design and implement personalized dietary plans for individuals with liver and pancreatic diseases, aiming to manage symptoms, prevent complications, optimize nutritional status, and support liver and pancreatic.
CO3	Explain how different food types affect blood glucose levels, particularly focusing on the role of carbohydrates. Provide practical guidance on planning meals and snacks throughout the day to maintain consistent blood sugar levels.
CO4	Differentiating dietary recommendations based on the stage of kidney disease, including restrictions on sodium, potassium, phosphorus, protein, and fluid intake.
CO5	To educate students on the crucial role nutrition plays in preventing and managing cardiovascular diseases (CVD)

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1.	DIET IN GASTROINTESTINAL DISEASES	<ul style="list-style-type: none"> • Indigestion • Peptic Ulcer • Carcinoma of stomach • Gastric Surgery • Dumping syndrome • Diarrhoea • Constipation • Coeliac Disease • Irritable Bowel Syndrome • Intestinal gas and flatulence • Diverticular Disease • Dietary Management 	6	CO1
2.	DIET AND DISEASES OF LIVER AND PANCREAS	<ul style="list-style-type: none"> • Function of liver • Agents responsible for liver damage • Infective Hepatitis • Cirrhosis of liver • Hepatic Encephalopathy • Cholecystitis and Cholelithiasis • Pancreatitis • Dietary Management 	6	CO2
3.	DIET IN DIABETES MELLITUS	<ul style="list-style-type: none"> • Prevalence • Types of Diabetes • Aetiology • Symptoms • Diagnose • Treatment • Complication • Dietary Management 	6	CO3
4.	DIET IN DISEASES OF KIDNEY	<ul style="list-style-type: none"> • Functions of kidney • Glomerulonephritis • Nephrotic Syndrome (Nephrosis) • Acute renal failure • Chronic Renal failure • Dialysis • Dietary Management 	6	CO4
5.	DIET IN CARDIOVASCULAR DISEASES	<ul style="list-style-type: none"> • Prevalence • Clinical effects • Role of fat in the Development of Atherosclerosis • Hypertension • Dietary Management 	6	CO5

Reference Books:

1.	Dietetics – B.Srilakshmi
2.	Food and Nutrition Vol. 2 – M.Swaminathan
3.	Advances In Diet Therapy: Practical Manual Paperback - V. Vimala
4.	ICMR (1990). Nutrient Requirements and Recommended Dietary Allowances for Indians.



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e-Learning Source:

1. <https://www.patientcareonline.com/clinical/gastrointestinal-disorders>
2. <https://www.patientcareonline.com/clinical/endocrinology>
3. <https://www.patientcareonline.com/clinical/nephrology>
4. <https://www.heart.org>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	-	3	-	2	-	-	1	2	-	1	3	-	1	1	-
CO2	3	3	-	2	-	2	-	-	2	3	-	1	3	-	1	1	-
CO3	3	3	-	3	-	2	-	-	1	2	-	1	3	-	2	2	-
CO4	3	3	-	3	-	2	-	-	1	2	-	1	3	-	1	1	-
CO5	3	3	-	2	-	2	-	-	1	3	-	1	3	-	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
ND301	ADVANCE IN DIET THERAPY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



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Effective from Session: 2023-2024

Course Code	ND302	Title of the Course	RESEARCH METHODOLOGY	L	T	P	C
Year	III	Semester	V	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	This course introduces students to fundamental principles of research methodology, including study design, data collection, statistical analysis, and ethical considerations in scientific research. On completion of this course, students will be able to apply statistical tools in various fields in their practical life.						

Course Outcomes	
CO1	Understand the basics of research, types of research, and their significance.
CO2	Formulate research questions, hypotheses, and study designs.
CO3	learning how to gather and analyze data and creating effective graphs, charts, and tables to visually communicate data insights.
CO4	Course aims to equip students with the skills to critically analyze existing research within their field and writing a comprehensive literature review
CO5	Course typically aims to equip students with the ability to develop a well-structured research proposal, including a thorough literature review, appropriate methodology, and a compelling presentation to effectively communicate

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1.	INTRODUCTION OF RESEARCH METHODOLOGY	<ul style="list-style-type: none"> Meaning, objectives, characteristics & significance. Types of research: qualitative & quantitative. Basic elements of research: variables – types- independent, dependent, active, attribute, continuous and categorical, characteristic and relationships 	6	CO1
2.	RESEARCH DESIGN AND SAMPLING METHODS	<ul style="list-style-type: none"> Research design: meaning, features, types: Observational vs. Experimental research Types of sampling: Probability and Non-probability sampling Sample size calculation and statistical power Sample test: use of distribution, test for single mean, equality of mean paired- t test, test for equality of variance, chi- square test 	6	CO2
3.	DATA COLLECTION AND ANALYSIS	<ul style="list-style-type: none"> Data collection: classification, tabulation and methods of collecting data. Types of data: Primary vs. Secondary data Methods of data collection: Surveys, Questionnaires, Interviews, and Observations. Statistics: definition, aim, scope, importance and limitation of statistics 	6	CO3
4.	SCIENTIFIC WRITING AND LITERATURE REVIEW	<ul style="list-style-type: none"> Review of related literature: Importance of literature review and referencing. Identification of the related literature. Organizing the related literature. 	6	CO4
5.	RESEARCH PROPOSAL AND PRESENTATION SKILLS	<ul style="list-style-type: none"> Preparing a research proposal – Title, Objectives, Methodology, Budgeting Research proposal: research proposal or synopsis, introduction, procedure for collecting and treating data, bibliography, time and budget schedule. Writing a thesis/dissertation – Structure and formatting guidelines How to prepare poster and oral presentations for conferences 	6	CO5

Reference Books:

1. Research Methodology Method and Techniques – CR Kothari
2. Research Fundamentals in Home Economics - Joseph, William D Joseph
3. WHO (2001) Health Research Methodology – A Guide for Training in Research Methods.
4. Methods in Social Research - Goode, WJ and Hatt, PK (1981), McGraw Hill International Editions, Sociology Series

e-Learning Source:

1. https://paperpal.com/blog/academic-writing-guides/what-is-research-methodology
2. https://euacademic.org/bookupload/9.pdf
3. https://www.intechopen.com/chapters/68505
4. https://www.grammarly.com/blog/academic-writing/research-paper-introduction/



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Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-
CO2	2	3	-	2	-	2	-	-	-	1	-	2	3	-	2	2	-
CO3	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-
CO4	2	3	-	1	-	2	-	-	-	1	-	2	2	-	1	1	-
CO5	2	3	-	1	-	2	-	-	-	1	-	2	3	-	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
ND302	RESEARCH METHODOLOGY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



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Effective from Session: 2024-25							
Course Code	ND303	Title of the Course	COMMUNITY NUTRITION	L	T	P	C
Year	III	Semester	V	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Community nutrition courses is to educate students about nutrition and healthy eating habits. The courses also help students develop skills to organize and evaluate community nutrition projects.						

Course Outcomes: After the successful course completion, learners will develop following attributes:

CO1	Aims to equip students with the knowledge and skills to accurately identify and interpret indicators of nutritional deficiencies or excesses in individuals or populations
CO2	The ability to recognize groups within a community that are particularly susceptible to nutritional deficiencies or excesses, such as pregnant women, infants, older adults, or low-income populations.
CO3	Students gain knowledge on nutritional programmers and policies to overcome malnutrition
CO4	Aims to equip students with the ability to apply nutritional principles in real-world situations, including assessing individual needs, developing personalized dietary plans, educating clients on healthy eating habits,
CO5	Understand the role of national, international and voluntary nutritional organizations to combat malnutrition.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1.	ASSESSMENT OF NUTRITIONAL STATUS	<ul style="list-style-type: none"> Definition, concept, factors affecting community nutrition Basic concept of community nutrition role of nutritionist in improving nutrition in community. Assessment of nutritional status of community. Standards and methods of assessing the state of nutrition of individual and groups Socio economic and demographic surveys Dietary surveys, anthropometry, clinical, biochemical 	6	CO1
2.	HEALTH PARAMETERS	<ul style="list-style-type: none"> Vital statistics Infant, toddler, maternal mortality Birth rate, death rate, growth rate, immunization status, environmental factors 	6	CO2
3	APPLIED NUTRITION ACTIVITIES	<ul style="list-style-type: none"> Dietary diversification. Food fortification and enrichment Definition, need & programs 	6	CO3
4	APPLIED NUTRITION ACTIVITIES	<ul style="list-style-type: none"> Dietary diversification. Food fortification and enrichment Definition, need & programs 	6	CO4
5	NUTRITIONAL PROGRAMMES AND POLICIES	<ul style="list-style-type: none"> Feeding programs for vulnerable groups Iodine deficiency disorders, Calcium and vitamin D deficiency Flourine deficiency and toxicity Nutritional Deficiency control programmes- prevention for blindness (National Vit A program), National Iron and folic acid program, National Iodine Program Programmes by Government and Non-Governmental Organizing nutrition education programme. National programmes and role of national and international agencies. In improving nutritional status of the community - ICDS, MDM, SNP, ANP, FAO, WHO, UNICEF, CARE, UNDP etc. 	6	CO5

Reference Books:

1.	Gibney M. J., Margetts, B.M., Kearney, J. M. Arab, I., (Eds) (2004) Public Health Nutrition, NS Blackwell Publishing
2.	Gopalan, C. (Ed) (1987) Combating Under nutrition- Basic Issues and Practical Approaches, Nutrition Foundation of India.
3.	Park, K. (2009) Park's Textbook of Preventive and Social Medicine, 20th ed. Jabalpur M/s. Banarsidas Bhanot.
4.	Kaufman M. (2007) Nutrition in promoting the public health strategies, principles and practices. Jones and Barlett Publishers.
5.	Nutritional Problems of India: Shukla P.K., Prentice Hall of India Pvt. Ltd., Delhi 1982

e-Learning Source:

1.	https://elearning.icar.gov.in/DisplayUG_ECoursesContent.aspx?CourseCode=9HpxukZaORnUcKX6kOMB9w
2.	https://www.fao.org/nutrition/e-learning-courses/en
3.	https://www.sciencedirect.com/topics/food-science
4.	https://www.scribd.com/



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Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	2	2	-	-	-	1	2	1	-	2	2	1	-	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	3	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	3	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	2	1	-	1	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
ND303	COMMUNITY NUTRITION	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



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Effective from Session: 2024-25

Course Code	ND304	Title of the Course	NUTRACEUTICALS AND FUNCTIONAL FOOD	L	T	P	C
Year	III	Semester	V	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The objectives of this course are to provide students with an overview of the field of functional foods, nutraceuticals and natural health products.						

Course Outcomes: After the successful course completion, learners will develop following attributes.

CO1	Understand the basic concepts of nutraceuticals and functional foods.
CO2	Understand the role of various nutraceuticals and functional foods towards managing chronic diseases.
CO3	Learn the marketing and regulatory aspects of nutraceuticals and functional foods.
CO4	Understand the source of various nutraceuticals and functional foods.
CO5	

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1.	FUNCTIONAL FOOD	<ul style="list-style-type: none"> Overview; definition, classification; functional food, Functional food science, Food technology and its impact on functional food development; Key issues in Indian functional food industry and nutraceutical 	8	CO1
2.	NUTRACEUTICAL	<ul style="list-style-type: none"> Historical perspective; definition, nature, nutraceutical compounds and their classification based on chemical/biochemical nature with suitable and relevant descriptions; Scope and future prospect 	8	CO2
3.	ANTIOXIDANTS	<ul style="list-style-type: none"> Concept of free radicals and antioxidants; Antioxidants role as nutraceuticals and functional foods 	8	CO3
4.	FUNCTIONAL FOOD AND NUTRACEUTICALS FOR DISEASE MANAGEMENT	<ul style="list-style-type: none"> Management of cardiovascular diseases, Diabetes, Cancer, Hypertension and Obesity by nutraceutical compounds and their mechanisms of action 	8	CO4
5.	FOOD SOURCES	<ul style="list-style-type: none"> Different foods as functional food: cereal products (oats, wheat bran, rice bran, etc.), Fruits and vegetables, Milk and milk products, Legumes, Nuts, oil seeds and sea foods, Herbs, spices and medicinal plants. Coffee, tea and other beverages as functional foods/drinks and their protective effects. 	8	CO5

Reference Books:

1. Wildman, R. E. (2016). Handbook of Nutraceuticals and Functional Foods. CRC Press
2. Richard Neeser & J. Bruce German Bioprocesses and Biotechnology for Functional Foods and Nutraceuticals, Jean, Marcel Dekker, Inc.
3. Vattam, D.A. and Maitin V. (2016). Functional Foods, Nutraceuticals and Natural Products, Concepts and Applications. DE Stech Publications, Inc
4. Gibson, G. R. and Williams, M. C. (2001). Functional Foods Concept to Product. CRC Press.
5. Pathak Y. Handbook of Nutraceuticals; Ingredient, Formulations, and Applications. CRC Press, Taylor & Francis Group, London

e-Learning Source:

1. <https://firstuniv.com>
2. <https://vignan.ac.in>
3. <https://bkbck.edu.in>
4. <https://www.jiit.ac.in>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	-	-	-	-	-	-	-	-	-	1	3	-	1	-	2
CO2	3	3	-	-	-	2	-	-	-	-	-	-	3	3	2	3	3
CO3	2	3	-	-	-	2	-	-	-	-	-	1	3	2	1	3	2
CO4	3	3	-	-	-	-	-	-	-	-	-	-	2	3	2	2	3
CO5	3	3	-	-	-	3	-	1	-	-	-	-	3	3	2	3	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
ND304	NUTRACEUTICALS AND FUNCTIONAL FOOD	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2024-25

Course Code	ND305	Title of the Course	SPORTS NUTRITION AND FITNESS	L	T	P	C
Year	III	Semester	V	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Nutrition in Health and Fitness" course is to provide a comprehensive understanding of how nutrition impacts overall health and physical performance, the goal is to equip students with the knowledge to make informed dietary choices to support health, fitness, and athletic performance, while considering individual needs and lifestyle factors.						

Course Outcomes

CO1	Understand the concept of nutrition in relation to fitness.
CO2	Determine the nutritional requirement for fitness and physical Performanc. They get opportunities in government and NGOs as public health nutritionist and understand Concept of Fitness Training.
CO3	Illustrate the relationship between body composition and fitness.
CO4	Relate and speculate the role of nutrition in preventing lifestyle related diseases.
CO5	Sports nutrition courses may also help students develop communication skills.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	DEFINITION OF HEALTH AND WELLNESS	<ul style="list-style-type: none"> Definition of health and wellness. Factors affecting health and wellness. Physiological, psychological and social health 	6	CO1
2	FITNESS	<ul style="list-style-type: none"> Definition, Basic components of physically active lifestyle in preventing obesity, osteoporosis, heart disease and diabetes. Eating and exercise disorders Weight management and energy balance 	6	CO2
3	NUTRITION AND EXERCISE	<ul style="list-style-type: none"> Types of exercises (aerobic and anaerobic exercises), Metabolic changes & their impact on energy requirement. 	6	CO3
4	IMPORTANCE OF DIET AND EXCERSICE INPREVENTING LIFE STYLE DISEASE	<ul style="list-style-type: none"> Definition and prevalence of lifestyle diseases. Risk factors associated with lifestyle diseases like smoking, alcohol abuse, poor diet, and lack of physical activity. The link between lifestyle choices and chronic disease development. Diabetes, CVD , hypertension, Obesity and Osteoporosis. 	6	CO4
5	SPORTS NUTRITION	<ul style="list-style-type: none"> Energy System Nutritional requirements Pre-event meals Food requirements Weight and body composition of athletes Special foods, Dietary modifications and diet plan, sports supplementation. 	6	CO5

Reference Books:

1. .ACSM, ACSM's Guidelines for Exercise Testing and Prescription , Sixth Ed. New York, Lippincott Williams & Wilkins, 2000
2. Borton, Benjamin. Human Nutrition . New York: McGraw-Hill, 197
3. European Journal of Applied Physiology and Occupational Physiology, (1983) 50, 255-263.

e-Learning Source:

1. https://www.myhealthcare.co
2. https://www.futurefit.co.uk
3. https://www.verywellfit.com

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-	3
CO2	2	3	-	2	-	2	-	-	-	1	-	2	3	-	2	2	-	2
CO3	3	3	-	1	-	1	-	-	1	1	-	1	2	-	1	1	-	3
CO4	2	3	-	1	-	2	-	-	-	1	-	2	2	-	1	1	-	2
CO5	2	3	-	1	-	2	-	-	-	1	-	2	3	-	1	1	-	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
ND305	SPORTS NUTRITION AND FITNESS	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2023-24

Course Code	ND306	Title of the Course	ADVANCE IN DIET THERAPY LAB	L	T	P	C
Year	III	Semester	V	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Evaluate the therapeutic role of key nutrients in maintaining health. "Advanced in Diet Therapy" typically aim to provide a deep understanding of the role of diet in managing various diseases, enabling students to design personalized therapeutic diets based on the pathophysiology of different conditions, develop advanced skills in diet counseling, and apply evidence-based nutrition practices in clinical settings, including considerations for specific life stages and situations like physical activity or sports nutrition.						

Course Outcomes

CO1	Students will be able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of individuals with medical conditions.
CO2	Understand the importance of nutritional assessment in the care of patients.
CO3	Comprehend the rationale of prevention of various diseases/disorders.
CO4	Plan and prepare diets suitable for patients of Renal diseases.
CO5	Understand the importance of Plan and prepare diets suitable for patients of CHD patients.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	MEAL PLAN IN GASTROINTESTINAL DISEASES	<ul style="list-style-type: none"> Meal plan and calculation of nutritive value for constipation patient. Meal plan and calculation of nutritive value for diarrheal patient. Meal plan and calculation of nutritive value for diarrheal patient. 	6	CO1-5
2	MEAL AND DISEASES OF LIVER AND PANCREAS	<ul style="list-style-type: none"> Meal plan and calculation of nutritive value for CLD patient. 	6	CO1-5
3	DIET IN DIABETES MELLITUS	<ul style="list-style-type: none"> Meal plan and calculation of nutritive value for Type -1 DM patient. Meal plan and calculation of nutritive value for Type -2 DM patient. 	6	CO1-5
4	DIET IN DISEASES OF KIDNEY	<ul style="list-style-type: none"> Meal plan and calculation of nutritive value for CKD patient. Meal plan and calculation of nutritive value for CLD patient during dialysis. 	6	CO1-5
5	DIET IN CARDIOVASCULAR DISEASES	<ul style="list-style-type: none"> Meal plan and calculation of nutritive value for CHD patient. Meal plan and calculation of nutritive value for hypertensive patient. 	6	CO1-5

Reference Books:

- Bamji M.S., Rao N.P., Reddy V. Eds. (2009). **Textbook of Human Nutrition**. 3rd Edition. Oxford and IBH Publishing Co. Pvt. Ltd.
- ICMR (1990). Nutrient Requirements and Recommended Dietary Allowances for Indians.
- Whitney, E.R. and S.R. Rolfes (2009) understanding Nutrition 9th ed. Wadsworth Thomson, Learning, Australia.
- Williams, S.R. (2001) Basic Nutrition and Diet Therapy. 11th ed. Times Mirror Mosby College Publishing

e-Learning Source:

- <https://medicarehealthscience.com>
- <https://www.gacwrmd.in>
- <https://www.du.ac.in>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO2	1	3	1	3	-	-	-	1	3	-	-	3	-	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
ND306	ADVANCE IN DIET THERAPY LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2023-2024

Course Code	ND307	Title of the Course	COMMUNITY NUTRITION LAB	L	0	T	0	P	2	C	1
Year	III	Semester	V								
Pre-Requisite	Nil	Co-requisite	Nil								
Course Objectives	. Community nutrition courses is to educate students about nutrition and healthy eating habits. The courses also help students develop skills to organize and evaluate community nutrition projects.										

Course Outcomes

CO1	Students gain knowledge on nutritional programmes and policies to overcome malnutrition.
CO2	Understand the role of national, international and voluntary nutritional organizations to combat malnutrition.
CO3	Become capable of organizing community nutrition education programme.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1.	PREPARATION AND USE OF NUTRITION	<ul style="list-style-type: none"> Preparation and use of Nutrition. Education ads – charts, poster, models, demonstration, etc 	30	CO1
2.	ASSESSMENT OF NUTRITIONAL STATUS.	<ul style="list-style-type: none"> Assessment of Nutritional Status of different age group. 		CO2
3.	NUTRITIONAL DEFICIENCY CONTROL PROGRAMME	<ul style="list-style-type: none"> Diet survey for family, a small group or community. 		CO3

Reference Books:

- Gibney M. J., Margetts, B.M., Kearney, J. M. Arab, I., (Eds) (2004) Public Health Nutrition, NS Blackwell Publishing.
- Gopalan, C. (Ed) (1987) Combating Under nutrition- Basic Issues and Practical Approaches, Nutrition Foundation of India.
- Kaufman M. (2007) Nutrition in promoting the public health strategies, principles and practices. Jones and Barlett Publishers.
- Park, K. (2009) Park's Textbook of Preventive and Social Medicine, 20th ed. Jabalpur M/s. Banarsidas Bhanot.

e-Learning Source:

- <https://raubikaner.org>
- <https://www.slideshare.net/mlogaraj>
- <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=19054>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	2	2	-	-	-	1	2	1	-	2	-	2	2	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	-	1	1	1	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	-	1	1	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	2	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	-	1	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
ND307	COMMUNITY NUTRITION LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	ND308	Title of the Course	CLINICAL POSTING	L	T	P	C
Year	III	Semester	V	0	0	12	6
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Students will engage in clinical practice in Physiotherapy departments in the musculoskeletal, neurology, cardiopulmonary, sports settings to enhance their clinical skills and apply contemporary knowledge gained during teaching sessions.						

Course Outcomes	
CO1	To learn the punctuality and interaction with colleague and supporting staff during clinical training.
CO2	To develop assessment skills.
CO3	To develop appropriate treatment protocol.
CO4	To understand the importance of documentation of the case record and case presentation.
CO5	To develop discipline and improve overall quality of clinical work.

CLINICAL POSTING ASSESSMENT FORM

Name of Student:		Session:	
Enrolment Number:		Date:	
Name of Subject:	CLINICAL POSTING	Subject code:	ND308
Topics:			

S. No.	Point to be Considered	Max. Marks	Marks Obtained
1.	Punctuality	4	
2.	Interaction with colleagues and supporting staff	2	
3.	Maintenance of case records	3	
4.	Presentation of case during rounds	2	
5.	Maintained OT records	2	
6.	OT Manners	2	
7.	Rapport with patients	2	
8.	Assistance during operative procedures	3	
9.	Discipline	2	
10.	Overall quality of clinical work	3	
TOTAL SCORE		25	

(Name and signature of In-charge)

(Head, Paramedical)

GUIDELINES FOR CLINICAL TRAINING PROGRAM

The students of Post Graduate B.Sc. ND program must spend above mentioned allotted time period in the hospital based clinical training for specified clinical experiences to meet the objectives of the training program. This period of practical and theoretical experience will enable the students to acquire competency and experience to perform as an independent practice and will enable to adjust to the real practical life in different units in the hospital settings.

S.No.	Program Name	Year/Semester	Duration of Training
1.	B.Sc. ND	II Year/ V Semester	4 Months
2.		II Year/ V Semester	4 Months
3.		III Year/ V Semester	4 Months
4.		III Year/ V Semester	4 Months

By the successful completion of this clinical training period, the student is expected to fulfil the objectives of the program and will be examination as given below:

S.No.	Program Name	Year/Semester	Case file	Practical on Case	Voice/Viva	Attendance
1.	B.Sc. ND	II Year/ V Semester	10 Marks	10 Marks (1 Long Case and 2 Short Case)	25 Marks	5 Marks
2.		II Year/ V Semester				
3.		III Year/ V Semester				
4.		III Year/ V Semester				

EVALUATION OF CLINICAL POSTING

BAICT- Students has to prepare 1 long case and 2 short cases during their clinical posting. The evaluation for internal clinical examination of 50 marks will be distributed:

Cases during clinical posting=**25 marks**.

Viva voce =**20 marks**

Attendance=**5 marks**

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO																	
CO1	2	3	3	2	3	2	3	1	2	1	-	-	3	2	3	3	2
CO2	3	3	3	3	2	2	3	2	1	3	-	-	2	2	3	2	3
CO3	3	3	3	3	2	2	3	2	1	3	-	-	3	2	2	2	3
CO4	3	3	3	3	2	2	3	2	1	3	-	-	2	3	2	2	3
CO5	3	3	3	3	2	2	3	2	1	3	-	-	3	2	3	3	2

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
ND308	CLINICAL POSTING	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
		√	√	√			√	√	3,4,11