Quantum University, Roorkee

Course Outcomes for the Syallbus 2022-24 Batch

Program Nam **Masters of Science in Nutrition and Dietetics**

Course Name **Advance Nutritional Biochemistry**

Course Code **ND4101**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand complex biological oxidation-reduction reactions in human body.	2	Emp, S
CO2	Students should be able to understand the metabolic pathway of protein and lipid metabolism.	**3**	Emp, S
CO3	Students should be able to understand about chemistry of enzymes and the factors affecting enzymes function.	**2**	Emp , s
CO4	Students should be able to learn about structure and metabolism of nucleic acids along with Spectrophotometric techniques.	2	Emp , S
CO5	Students should be able to learn about biosignaling of hormone along with regulation of body water and salt level.	3	Emp, S

Course Name **Clinical And Therapeutic Nutrition I**

Course Code **ND4108**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (Use , for more than
CO1	Students should be able to learn about different types of special nutrition support feeding and when and why this type of nutrition plays important role in critically ill patients.	3	Emp,S
CO2	Students should be able to learn about different types of heart diseases and how it can be prevented or treated with Nutritional intervention.	3	Emp,S
CO3	Students should be able to learn dietary management of different types of metabolic as well as degenerative diseases that occurs in old age. Students will also learn how body reacts in different types of stress.	3	Emp,S
CO4	Students should be able to learn about different types of diabetes mellitus and concept of Glycemic load & Glycemic index.	3	Emp,S

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CO5	Students should be able to learn aboutnutritional management during special conditions & inborn errors.	3	Emp,S

Course Name **Advance Nutritional Biochemistry Lab**
Course Code **ND4140**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (Use , for more than
CO1	Students should be able to learn the preparation methods of starch.	3	S
CO2	Students should be able to determine the acid value, iodine value and saponification value of fats to check there purity.	4	S
CO3	Students should be able to estimate the various vitamins and minerals through food sources.	3	S

Course Name **Public Health Nutrition**
Course Code **ND4103**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about nutrition related health issues in large community	4	Emp, S
CO2	Students should be able to learn about health related acts across the world	3	Emp , S
CO3	Students should be able to get knowledge about national international organization which are working for health and nutrition	4	Emp , s , En
CO4	Students should be able to learn , understand and apply laws related to food and health	2	Emp , S
CO5	Students should be able to plan and execute community health campaign in local areas	4	Emp , S

Course Name **HumanNutrition**
Course Code **ND4104**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about energy needs ,RDA,Metabolic disorders and how it can be treated	3	Emp,S
CO2	students should be able to learn about carbohydrates and its effect on human body	4	Emp,, S
CO3	Students should be able to learn about Protein turnover,Assessment of protein quality, Adaptation to fasting and starvation and non nutritive components.	4	Emp,, S , En
CO4	Students should be able to learn about role of leptin and ghrelin in hunger and satiety and weight management.	4	Emp, S , En
CO5	Students should be able to learn about Role of n3 and n6 fatty acids in health and diseases ,cholesterol, antioxidants, sterols. Lipoproteins-transport and metabolism	3	Emp,

Course Name **Clinical and Therapeutic Nutrition Lab I**
Course Code **ND4141**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn to plan various types of therapeutic diets used in hospitals.	6	Emp
CO2	Students should be able to learn to plan and prepare therapeutic diets for various basic diseases like Diarrhea, constipation, peptic Ulcers and different types of Fevers.	6	Emp
CO3	Students should be able to learn to calculate RDA,s according to individual patients for various basic diseases like Diarrhea, constipation, peptic Ulcers and different types of Fevers	3	Emp

Course Name **Advanced Human Physiology**
Course Code **ND4105**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about Blood composition, Erythropoiesis, Blood Coagulation and Blood Groups, Cardiac cycle and cardiac output, Blood pressure	2	Emp, S
CO2	Students should be able to learn about Respiratory and Excretory System in detail	2	Emp , S
CO3	Students should be able to learn about Digestive System:- Functions and regulation, Mechanism of digestion and absorption of carbohydrates,protein ,fats	2	Emp , s , En
CO4	Students should be able to learn about Reproductive System: Structure and function of male and female sex glands and organs.	2	Emp , S
CO5	Students should be able to learn about Endocrine System:- Definition, functions and kinds of hormones, Structure and functions of the following glands	2	Emp , S

Course Name **ScientificWriting&NutritionCommunication**
Course Code **ND4106**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand research and its methodology	2	S
CO2	Students should be able to learn , understand and memorize rules of research writing	2	Emp,
CO3	Students should be able to understand and implement creativity in research , report and seminars	2	En,s
CO4	Students should be able to develop a good project ongenuine problems	2	S , En
CO5	Students should be able to design synopsis scientifically	1	S,En

Course Name **PublicHealthNutrition Lab**
Course Code **ND4142**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to prepare low cost recipes for the community people.	3	Emp, S
CO2	Students should be able to develop low cost and highly nutritious recipes.	3	Emp, S
CO3	students should be able to calculate nutritional value of the nutritious innovative recipes.	3	Emp, S,En

Course Name **ScientificWriting&NutritionCommunicationLab**
Course Code **ND4145**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to build competence in scientific writing skills.	3	Emp,, S
CO2	Students should be able to develop understanding regarding the vitals aspects of nutrition communication and their use in nutrition and health education	3	Emp, S
CO3	Students should be able to understand skills to plan & use IEC.	3	Emp, S,En

Course Name **BiochemicalFoodAnalysisandInstrumentation**
Course Code **ND4201**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about Nutritional support recent advances in techniques .	3	Emp,S

CO2	Students should be able to learn about Aetiopathogenesis of Heart disease treatment, preventive aspects, lifestyle and dietary management	4	Emp,S
CO3	Students should be able to learn about Nutritional Management in Trauma Conditions dietary management in Burns, Surgery, Stress and trauma	2	Emp,S
CO4	Students should be able to learn about Nutritional Management in Diabetes Mellitus	2	Emp,S
CO5	Students should be able to learn about Nutritional Management in Special Conditions Space travel, High altitudes, Inborn errors of metabolism	2	Emp,S

Course Name **Clinical and Therapeutic Nutrition II**
Course Code **ND4202**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to Learn the basic principles of multi-variable calculus with their proofs. They should be able to classify partial differential equations and transform them into canonical form. They will also understand how to extract information from partial derivative models in order to interpret reality.	2	Emp
CO2	Students should be able to Understand and learn how to find the area and volume of any region and solid body respectively by integral and also find the moments of inertia for a thin plate in plane.	2	Emp
CO3	Students should be able to Understand theorems related to directional derivative of gradient and reproduce its proof. They should be able to Explain the concept of a vector integration in a plane and in space.	2	S
CO4	Know basic application problems described by second order linear differential equations with constant coefficients. They should be also able to understand and solve the applications associated with Laplace Transform.	2	S
CO5	Students should be able to Solve the linear equations using matrix properties and Determine characteristic equation, eigen values, eigenvectors and diagonalizable of a matrix.	1	Emp

Course Name **Advances in Nutrition**
Course Code **ND4206**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about different food agriculture and new technologies for changing trends in life style patterns in different population groups.	2	Emp,S
CO2	Students should be able to learn about effects of food on drug therapy: enteral nutrition interactions with medication, drug distribution, drug metabolism and excretion in human body.	2	Emp,S
CO3	Students should be able to learn about nutraceuticals, nutrigenomics, nutrigenetics and active compound in functional food and antioxidants and how it can be prevent various types of diseases in human body.	2	Emp,S
CO4	Students should be able to learn about different food safety measures in the food industry.	2	Emp,S
CO5	Students should be able to learn about latest trends in nutritional labelling: additives, colors preservatives, allergen information and different types of sugar derivatives.	3	S

Course Name **Nutrition For Fitness and Sports**
Course Code **ND4204**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand requirements and needs of athlete	3	Emp,S
CO2	Students should be able to learn how to calculate diet for athlete	3	S
CO3	Students should be able to learn how to examine level of nutrition in healthy and unhealthy person at various levels	2	S
CO4	Students should be able to learn to provide best diet counseling to athlete as well as health conscious people	2	Emp,S
CO5	Students should be able to motivate others towards healthy lifestyle	2	Emp,S

Course Name **Research Methodology and Biostatistics**
Course Code **ND4207**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand Research process and the application of statistics in .nutrition.	2	S
CO2	Students should be able to learn, identifying research problem, framing objectives, setting hypothesis& research design, testing hypothesis, reviewing literature.	2	Emp,
CO3	Students should be able to understand and implement Historical research, content analysis, causal-comparative research	2	En,s
CO4	Students should be able to develop a good observational scale	1	S , En
CO5	Students should be able to apply various statistical measurements for research data management and analysis.	2	S,En

Course Name **BiochemicalFoodAnalysisandInstrumentationLab**
Course Code **ND4240**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to know about various food analyzers	2	S
CO2	Students should be able to conduct proximate analysis of antioxidants and micronutrients.	3	Emp,S
CO3	Student should be able to learn to implement these analysis in their research	3	Emp,S

Course Name **Clinical and Therapeutic Nutrition Lab II**
Course Code **ND4141**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to plan diets for various diseases related to heart disease, diabetes mellitus, stress conditions etc..	6	Emp,S
CO2	Students should be able to prepare diets for various diseases related to heart disease, diabetes mellitus, stress conditions etc..	6	Emp,S
CO3	Students should be able to calculate diets for various diseases related to heart disease, diabetes mellitus, stress conditions etc..	3	Emp,S,En

Course Name **Research methodology & Computer Application LAB**
Course Code **ND4244**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	To impart knowledge related to computer and various softwares use in the feild of Nutrition & Dietetics AND plan diets for various diseases related to heart disease, diabetes mellitus, stress conditions etc..	6	Emp,S
CO2	To impart knowledge related to computer and various softwares use in the feild of Nutrition & Dietetics and prepare diets for various diseases related to heart disease, diabetes mellitus, stress conditions etc..	6	Emp,S
CO3	To impart knowledge related to computer and various softwares use in the feild of Nutrition & Dietetics And calculate diets for various diseases related to heart disease, diabetes mellitus, stress conditions etc..	3	Emp,S,En

Course Name **Advanced Food Science**
Course Code **ND4301**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about the nutritional importance of cereals, legumes and oilseeds and also learn about various new technologies of baking	3	Emp
CO2	Students should be able to learn about various technologies of meat, fish, poultry, egg and their products.	2	Emp
CO3	Students should be able to learn about various new technologies of milk and milk products.	2	Emp
CO4	Students should be able to learn about classification and new technologies of fruits & vegetables and their products	2	Emp
CO5	Students should be able to learn about various processing & preservation techniques of food.	3	Skill

Course Name **Advanced Food Microbiology**
Course Code **ND4302**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about the interaction of microorganisms with food. The scope and importance of Food microbiology.	2	Emp
CO2	Students should be able to learn about the various parameters of microbial analysis like sampling, culturing and transport of microbial culture along with the identification methods.	2	Skill
CO3	Students should be able to learn about protection and preservation of foods. They will also learn about microbial standard such as HACCP.	2	Emp
CO4	Students should be able to learn about the spoilage, contamination along with the prevention methods of different food groups.	2	Emp
CO5	Students should be able to acquire knowledge about the different food borne diseases caused by various causative agents such as salmonella, listeria, clostridium etc.	2	Emp

Course Name **Advance Food Service Management**
Course Code **ND4303**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about different food service systems and principles of working there	3	Skill
CO2	Students should be able to learn about importance of space organization in an institute various procedures of cost accounting and cost analysis	3	Emp
CO3	Students should be able to learn about different types of menu planning, purchasing principles in any food industry	3	Skill
CO4	Students should be able to learn about sanitation and hygiene, techniques to overpower accidents in the kitchen and various rules and regulations required for working in a kitchen	3	Emp
CO5	Students should be able to learn about various labor laws, welfare schemes for employees and staff member.	3	Emp

Course Name **Advanced Food Science Lab**
Course Code **ND4340**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about various processing techniques and their application on different food products.	3	Skill
CO2	Students should be able to learn about evaluation of different food grains and their packaging.	5	Emp
CO3	Students should be able to gain the practical knowledge of different processing aspects of foods.	3	Emp

Course Name **Food Product Development, Safety and Quality Development**
Course Code **ND4304**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about food needs and consumer preferences and also learn about market survey and its importance for new products development (NPD).	2	Emp
CO2	Students should be able to learn about the process, activities, success factors and market- oriented methodologies for designing of new product development.	3	Emp
CO3	Students should be able to learn about standardization, statistical analysis and stages of integration of market and sensory analysis and evaluation.	2	Skill
CO4	Students should be able to learn about quality and safety aspects for newproduct development (NPD).	2	Emp
CO5	Students should be able to learn about advertisement and marketing fornew product development (NPD).	3	Skill

Course Name **Advanced Food Microbiology Lab**
Course Code **ND4341**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn to prepare culture media for the growth and enumeration of microorganisms.	6	skill
CO2	Students should be able to acquire knowledge for microbiological analysis of processed and unprocessed food.	4	Emp
CO3	Students should be able to learn to microbiological quality of milk and water etc.	3	skill

Course Name **Advance Food service Management Lab**
Course Code **ND4342**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to analysis the different layouts of kitchen.	4	Skill
CO2	Students should be able to standardize various recipes and have in- house training of food service management and also learn the cost analysis.	6	Skill
CO3	Students should be able to gain knowledge of various food service equipments used in catering management.	3	Emp

Course Name **Food Product Development , Safety& Quality Development Lab**
Course Code **ND4343**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about the methodology and evaluation required for new product development	5	Emp
CO2	Students should be able to learn about analysis physical & chemical properties of new product development	4	Emp
CO3	Students should be able to gain knowledge about various aspects of sensory evaluation of a new product.	3	Emp

Course Name **Nutrition Epidemiology Pediatric and Geriatric Nutrition**
Course Code **ND4216**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students will be able to learn about the type of epidemiological studies and various variables	2	Emp
CO2	Students will be able to learn about pediatric nutrition and management of related problems	3	Emp

CO3	Students will be able to learn about therapeutic care and management of children.	2	Skill
CO4	Students will be able to learn about various geriatric changes, consequences and related nutrition.	2	Emp
CO5	Students will be able to learn about therapeutic care and management of elderly.	3	Skill

Course Name **Food Processing Technology**
Course Code **ND4217**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students will be able to learn the detailing related to baking technology.	2	Emp
CO2	Students will be able to learn in detail related to processing technology used in Non-Vegetarian food items.	3	Emp
CO3	Students will be able to learn in detail related to processing technology used in Fruits and vegetables food items.	2	Skill
CO4	Students will be able to learn in detail related to processing technology used in Milk & Milk Products food items.	2	Emp
CO5	Students will be able to learn in detail related to preservation methods used in fruits & vegetables food items.	3	Skill

Course Name **Clinical Psychology**
Course Code **ND4218**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student will be able to understand the basics of clinical field of psychology.	2	Emp
CO2	Students will be able to learn the behaviour of the person in different health conditions.	3	Emp
CO3	Students will be able to understand the procedures of prevention, promotion and management of psychological disorders	2	Skill
CO4	Students will be able to learn the different intervention methods for psychological disorders	2	Emp

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CO5	Students will be able to learn the counseling techniques.	3	Skill

Course Name **Functional Foods & Nutraceuticals**
Course Code **ND4316**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about history, concept, evolution of nutraceuticals & functional foods. They will also learn about different types of nutraceuticals.	2	Emp
CO2	Students should be able to learn about different Phytochemicals, antioxidants, flavanoids and their role in health and diseases.	3	Emp
CO3	Students should be able to learn about the various methods used to isolate, extract and purify the various bioactive compounds.	2	Skill
CO4	Students should be able to learn about pre & probiotics and their health benefits in various diseases	2	Emp
CO5	Students should be able to learn about different functional foods and other new technologies or nutraceuticals that will be making new trends	3	Skill

Course Name **Food Toxicology**
Course Code **ND4318**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about food toxicology and its evaluation.	2	Emp
CO2	Students should be able to learn about various food toxicants	3	Emp
CO3	Students should be able to learn about various food allergens	2	Skill
CO4	Students should be able to learn about various environmental contaminants and drug residues in food.	2	Emp
CO5	Students should be able to learn about various safety aspects of food	3	Skill

Course Name **Food Anthropology**
Course Code **ND4319**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn about the research tools used in anthropology.	2	Emp
CO2	Students should be able to learn about anthropology and its relevance.	3	Emp
CO3	Students should be able to learn about cultural interpretation of Malnutrition and Rural Urban and its differences.	2	Skill
CO4	Students should be able to learn about comparing rural vs urban differences in anthropology.	2	Emp
CO5	Students should be able to learn about applications of Operations Research in anthropology	3	Skill