



DR. BHIMRAO AMBEDKAR UNIVERSITY, KHANDARI, CAMPUS, AGRA
Department of Biochemistry
School of Life Sciences
Value Added Course

Course Name	Frontiers of Biochemistry
Course Code	BC VAC-01
Duration And Credit	30 hrs & 02 Credits
Coordinator	Dr. Uditia Tiwari, Assistant Professor
Evaluation	By Coordinator
Organized by	Department of Biochemistry

Course Objectives:

After successful completion of the course student will learn the emerging scope of biochemistry in various fields of forensic, food and blood biochemistry

UNIT I

Scope and Future of Biochemistry, its branches, Green biochemistry and Red Biochemistry and its biological significance

UNIT II

Food Biochemistry- Biochemistry in Food industry, Handling, and Processing, Biochemically Induced Food flavours

UNIT III

Forensic Biochemistry - Qualitative analysis of evidence, Study of body fluids, DNA testing

Reference Books

Principles of Biochemistry by Nelson, Cox and Lehninger

Biochemistry by G. Zubay

Biochemistry, DVoet and JG. Voet, J Wiley and Sons.

Physical Biochemistry: Applications to Biochemistry and Molecular Biology, D Freifilder, W.H. Freeman & Company.

Practical Biochemistry, Wilson & Walker

Course Outcomes (COs)

On the completion of the course, students will be able to:

CO1: To understand the actual chemical concepts of various body processes and physiology using bio-molecules.

CO2: To study of biochemistry helps one to understand the actual chemical concepts of biology.

CO2: To apply the principles of environmental biochemistry to protect our environment.



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Course Name	Dietary modifications in health management
Course Code	BC VAC-02
Duration And Credit	30 hrs & 02 Credits
Coordinator	Dr. Udit Tiwari, Assistant Professor
Evaluation	By Coordinator
Organized by	Department of Biochemistry

Course Objectives:

After successful completion of the course student will learn the ability to analyse society related/ applied health problem. Interdisciplinary knowledge to find solution for the complex biological problems

UNIT I

Introduction: Concept of Nutrition, Relation of nutrition to health, adequate nutrition, optimum nutrition and malnutrition. Role of yoga in stress management

UNIT II

Diet in fever, infection, and nutritional deficiency diseases: Etiological factors and Dietary modifications in (a) Fevers and infection (b) Nutritional deficiency diseases anaemia, vitamin A deficiency.

UNIT III

Diet in nutritional imbalances: Nutritional Imbalances - Obesity and under weight, types of obesity. Dietary modifications role in maintenance of Arthritis, rheumatoid and osteo arthritis

Reference Books

Corinne H. Robinson, Marilyn R. Lawler, Wanda L., Chenweth, Ann Garwin, Normal and Therapeutic Nutrition, XVII Editor

Krause, M.V. Hunseher, M.A., Food Nutrition and Diet Therapy, W.S. Saunder_s Company, Philadelphia, London, Toronto, Eleventh edition

Maurice, E. Shills, James, A. Olsen, Moshe Shihe, Modern Nutrition on Health and Disease, Ninth Edition, Lea and Pediger, Philadelphia, 1994

Sue Rod Williams, Nutrition and Diet Therapy, Times Mirror Masby College Publishing St. Laws, Toronto, Boston, 1989

Gopalan, C., Ramshastri and Balasubramaniam, S.C. Nutritive value of Indian Foods, NIN, Hyderabad, 1994

Course Outcomes (COs)

On the completion of the course, students will be able to:

CO1: To select specific foods for management of disease condition and evaluate the role of diet in the control of diseases

CO2: To apply yoga principles to health promotion and the prevention of stress

CO3: Analyze the relationship between diet and disease.



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Value Added Course

Course Name	Emerging Trends of Nutraceuticals
Course Code	BC VAC-03
Duration And Credit	30 hrs & 02 Credits
Coordinator	Dr. Udit Tiwari, Assistant Professor
Evaluation	By Coordinator
Organized by	Department of Biochemistry

Course Objectives:

After successful completion of the course student will learn preliminary knowledge of the nutraceuticals and develop an interest in pursuing a career in different Nutraceuticals companies.

UNIT I

Medicinal Plants – Importance and Scope, Herbs and spices as Nutraceuticals

UNIT II

Traditional herbal teas (Ginger tea, Chamomile tea, Hibiscus tea), Herbs for woman, Babies and children, Concepts of Herbal garden– Home

UNIT III

Role of antioxidants and phyto chemicals (phenolics, flavanoids, saponins, alkaloids, glycosides, terpenoids, tri-terpenoids) in pandemic (COVID-19), Cancer

Reference Books

Farooqi, A.A. and B. S. Sreeramu, 2004. Cultivation of medicinal and aromatic crops. Revised edition, Universities Press (India) Private Limited, Hyderabad

WHO, 2002. Quality control methods for medicinal plant materials, World Health Organization, Geneva. A.I.T.B.S., Publishers and Distributors, New Delhi

Harbone, J.B. 1998. Phytochemical Methods; A guide to modern techniques of plant analysis. 3rdEdn., Springer (India) Private Limited , New Delhi

Halliwall, B. and J.M.Gutteridge. 1985. Free radicals in Biology and medicine. Oxford university press

Course Outcomes (COs)

On the completion of the course, students will be able to:

CO1: To understand the potential of herbs and spices

CO2: To analyse the medicinal property of herbal tea

CO3: To learn health benefits of antioxidants