

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

Semester-III

MDN 301: DIETARY MANAGEMENT –II

Renal disease-

- Nephritis
Epidemiology, Pathophysiology, Cause and dietary management and critical care
- Glomerulitis
Epidemiology, Pathophysiology, Cause and dietary management and critical care
- Renal failure
Epidemiology, Pathophysiology, Cause and dietary management and critical care
- Kidney stone
Epidemiology, Pathophysiology, Cause and dietary management and critical care
- Nephrolithiasis
Epidemiology, Pathophysiology, Cause and dietary management and critical care
- Inborn error of metabolism-
 - Epidemiology, Pathophysiology, Cause and dietary management and critical care
 - Phenylketonuria
Epidemiology, Pathophysiology, Cause and dietary management and critical Care
 - Galactosemia
Epidemiology, Pathophysiology, Cause and dietary management and critical care
- Glycogen storage disease
Epidemiology, Pathophysiology, Cause and dietary management and critical care
 - Maple syrup urine disease
Epidemiology, Pathophysiology, Cause & dietary management and critical care.
 - HIV
Epidemiology, Pathophysiology, Cause and dietary management and critical care
 - Sepsis-
Epidemiology, Pathophysiology, Cause and dietary management and critical care
 - Trauma-
Epidemiology, Pathophysiology, Cause and dietary management and critical care
 - Burns-

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

Epidemiology, Pathophysiology, Cause and dietary management and critical care

Neural diseases

- Parkinson disease
Epidemiology, Pathophysiology, Cause & dietary management and critical care
- Alzheimer's disease
Epidemiology, Pathophysiology, Cause & dietary management and critical care
- Angelman disease
Epidemiology, Pathophysiology, Cause & dietary management and critical care
- Corea athotosis disease
Epidemiology, Pathophysiology, Cause & dietary management and critical care
- Lafora disease
Epidemiology, Pathophysiology, Cause & dietary management and critical care
- Huntington Core disease
Epidemiology, Pathophysiology, Cause & dietary management and critical care

- Respiratory disease-
Asthma-Epidemiology, Pathophysiology, Cause and dietary management and critical care

- Chronic obstructive pulmonary disease
Epidemiology, Pathophysiology, Cause and dietary management and critical care

- Respiratory failure-Epidemiology, Pathophysiology, Cause & dietary management and critical care
- Tuberculosis-Epidemiology, Pathophysiology, Cause & dietary management and critical care

References:

- Gibney MJ, Elia M, Ljungqvist & Dowsett J. (2005) *Clinical Nutrition. The Nutrition Society Textbook Series*. Blackwell Publishing Company
- Gibson SR. (2005). *Principles of Nutritional Assessment*. 2nd Edition. Oxford University press
- Joshi YK. *Basics of Clinical Nutrition*. 2nd Edition. Jaypee Brothers Medical Publishers.
- Lee RD & Neiman DC. (2009). *Nutritional Assessment*. 5th Edition. Brown & Benchmark.
- Mahan, L. K. and Escott Stump. S. (2016) *Krause's Food & Nutrition Therapy* 14th ed. Saunders-Elsevier
- Shils, M.E., Shike, M, Ross, A.C., Caballero B and Cousins RJ (2005) *Modern Nutrition in Health and Disease*. 10th ed. Lipincott, William and Wilkins.
- Williams, S.R. (2001) *Basic Nutrition and Diet Therapy*. 11th ed. Times Mirror Mosby College Publishing. World Cancer Research Fund & American Institute for Cancer Research (2007) *Food, Nutrition, Physical Activity and the Prevention of Cancer- A Global Perspective*. Washington E.D. WCRF

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

MDN 302 :RESEARCH METHODOLOGY

Course Learning Outcomes:

Student will be able to -

1. Impart knowledge of scientific method, purpose and approaches to different research
2. Study the comparison and contrast quantitative and qualitative research
3. Demonstrate different research design and the research cycle
4. Gather knowledge on ethical principles, issues and procedures

Content:

1. Types of research

Historical

Descriptive, Experimental

Case study

Social research

Participatory research

2. Definition & Identification of Research Problem

Selection of research problem

Justification

Theory

Hypothesis

Basic assumption

Limitation & delimitation of the problems

Types of variables

3. Theory of Probability

Probability

Sampling

Simple Random Systematic, Random Sampling

Two stages & multistage sampling

Non-probability sampling : purpose

Quota & Volunteer Sampling/Screwball sampling

4. Basic principle of research design

Purpose of research design/fundamental

Applied & Action

Explanatory & descriptive

Experimental survey & case study

Longitudinal & Cross Sectional study

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

Co-relational study

5. Qualitative research in food and nutrition

Type of quality of research
Tools
Techniques and methodology
Rapid assessment procedure
Project reorientation and
evaluation

6. Quantitative research method

Theory and design in quantitative research
Definition and quantitative research
Methods and techniques of data collection
Group discussion
Interviews: key information, in depth interview
Critical analysis of research
Writing a research proposal
Analysis of data and research report

8. Ethics in research

MDN 303 : PAEDIATRIC ,GERIATRIC AND SPORTS NUTRITION

Course Learning Outcomes:

Student will be able to -

1. Impart knowledge of physiological changes, nutritional requirements Socio-psychological aspects of ageing etc
2. Gather knowledge on sports nutrition

Contents:

Paediatric Nutrition

Pediatric nutrition assessment-Anthropometric measurements, Measuring ,recording and plotting growth,Normal nutrition for infants – requirements , importance of breast feeding ,bottle feeding , commercial formulas,weaning foods ,other family foods ,physiology and care of the preterm infant.Nutritional considerations for LBW children and children with development disabilities.Nutrition in childhood; Growth and development; nutrient needs,Assessment of nutritional status of children,Providing an adequate diet - Factors affecting food intake.Feeding the preschool child, the school- aged child.Childhood obesity; Underweight and Undernutrition- short term and long term consequences in brief, Failure to thrive;Growth faltering and detection Mineral and vitamin deficiencies,Dental caries,Allergies,Attention-deficit hyperactivity disorder

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

Geriatric Nutrition

The ageing process-physiological, metabolic, body consumption changes and impact on health and nutritional status, Socio-psychological aspects of ageing-special problems of elderly women, Nutritional and health status of elderly. Factors influencing food and nutrient intake, health status including lifestyle pattern, medication, psychosocial aspect etc.

Sports Nutrition:

Sports Specific Nutrition & Clinical Sports Nutrition, Holistic approach to the management of fitness and health ,Muscle building, Micronutrient requirement, Fat burnners, Dehydration, Review of different energy system for endurance and power activity, nutrition in sports, Dietary supplements & Ergogenic Aids, Sports anaemia, Carbohydrates load etc.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

Paper code: MDN 304

HEALTH INFORMATION MANAGEMENT AND DECISION MAKING

Course Learning Outcomes:

Student will be able to -

1. Gather knowledge of scientific method, purpose and approaches to different research
2. Observe the comparison and contrast quantitative and qualitative research
3. Present different research design and the research cycle

Contents:

Unit 1

- Introduction to Health Information System: Objectives, Concept of Data & Information, Source of Health Information, Importance in Research.
- Electronic Medical Records and its Importance, Data Standards in Public Health
- System Concept, Components of a system, Components of a data Communication system Interfaces & boundaries, Environment of a system, Types of Systems, System Software & Application Software
- Data communication & Networking , Need for Computer Networking, Types of networks: LAN, MAN , WAN; Application of networking in public health

Unit 2:

- Decision Support System (DSS), Definition, Relationship with MIS , Evolution of DSS, Characteristics, Classification, Objectives, Components, Applications of DSS.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

- Database Management System (DBMS): Need for using DBMS, Concept of tables, records, attributes.
- SQL, Outsourcing: Concept of BPO, KPO

Unit 3:

- Data Warehousing and Data Mining: Concepts of Data warehousing, data mart, meta data, multi-dimensional modelling
 - Online Analytical Processing (OLAP), Online Transaction Processing (OLTP)
- Basics of Computer: Components of computer, Knowledge about computer softwares & programmes commonly used in health care sector
- Emerging communications technology in Public Health practice

References:

Data Management Soft Ware's – Galgotia
Bharat, Bhaskar : Electronic Commerce – Technologies & Applications. TMH
Forouzan : Data Communication & Networking, TMH
Joseph, P.T.: E-Commerce An Indian Perspective
Management Information Systems. M.M.Oka. EPH
Management Information Systems, O'Brien, TMH
Management Information Systems, Arora & Bhatia, EXCEL BOOKS

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

MDN 305
FOOD TECHNOLOGY AND QUALITY
CONTROL

Course Learning Outcomes:

1. The course intends to provide knowledge of cereals and animal food processing.
2. Students will learn the processes and ingredients involved in breads, cakes and biscuit processing industry.
3. The course will train students to analyse all quality aspects of cereals and animal foods.
4. Students will gain knowledge of methods of preservation of meat, fish and poultry along with value added products from meat industry.

Contents:

Cereal and cereal products technology

Cereals: Wheat, rice, maize, barely, oat, rye- Structure, cultivation, harvesting, properties, composition and commercial value.

Milling process: Complete milling process, break rolls, reduction rolls, milled products and their nutritive value and applications.

Baking technology: Bread, biscuits/ Cookies and cake, Principles of baking, Ingredients and their functions, methods of preparation, in- process control, faults, causes and remedies, methods of leavening: physical, biological and chemical, scoring of quality parameters.

Meat, fish, poultry, egg and its products technology

Meat: Composition, variety, slaughtering and related practices, pre- slaughter handling, grading, ageing, curing, smoking and tenderizing of meat, meat pigments and colour changes, cooking, storage, methods of preservation for value addition and spoilage.

Poultry: Production considerations, Processing plant operations (slaughter and bleeding, scalding, defeathering, eviscerating, chilling and packaging), cooking, tenderness, flavour and colour changes.

Eggs: Composition, quality factors, storage, bacterial infection and pasteurization, freezing, drying and egg substitutes.

Fish: Composition, onboard handling & preservation, drying and dehydration, salt curing, smoking, marinades, fermented products, canning, Modified Atmosphere Packaging, and quality factors.

Public health hazards due to microbial contamination of foods: Important food borne infections and intoxications due to bacteria, moulds, viruses (*Salmonella typhi*, *Helicobacter pylori*, *Campylobacter jejuni*, *Yersinia enterocolitica*, *Bacillus cereus*,

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

Staphylococcus aureus, Clostridium botulinum, Escherichia coli, Mycotoxins, Hepatitis A virus & Rota virus)- Symptoms, mode of transmission and methods of prevention. Risk management; Quality Control; TQM, GMP, HACCP.

Practical:

MDN 391: THERAPEUTIC DIET

CHART PREPARATION

1. Renal disease

Therapeutic diet chart preparation for Nephritis, case specific

1.2 Therapeutic diet chart preparation for Glomerulitis, case specific

1.3 Therapeutic diet chart preparation for Renal failure, case specific

1.4 Therapeutic diet chart preparation for Kidney stone, case

specific 1.5 Therapeutic diet chart preparation for

Nephrolithiasis, case specific

2. Respiratory disease

Therapeutic diet chart preparation for Asthma, case specific

Therapeutic diet chart preparation for Chronic obstructive pulmonary disease, case specific

Therapeutic diet chart preparation for Respiratory failure, case specific

Therapeutic diet chart preparation for Tuberculosis, case specific 3.0

Therapeutic diet chart preparation for Inborn error of metabolism, case specific

Therapeutic diet chart preparation for HIV, case specific

Therapeutic diet chart preparation for Sepsis, case specific

Therapeutic diet chart preparation for Trauma, case specific

Therapeutic diet chart preparation for Burns, case specific

Therapeutic diet chart preparation for Phenyl ketonuria, case specific

Therapeutic diet chart preparation for Galactosemia, case specific

Therapeutic diet chart preparation for Glycogen storage disease, case specific

Therapeutic diet chart preparation for Maple syrup urine disease, case specific

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. Dietetics & Nutrition
(Effective for Academic Session 2018-2019)

MDN 381: RESEARCH PROJECT

Each student will undertake a research project 6 Hrs per week. The students will be guided and supervised by a member of the teaching faculty of the concerned department.