

## In the Name of God

**Islamic Republic of Iran**  
**Ministry of Health and Medical Education**  
**Deputy for Education**

**Nutritional Medicine**  
**Master of Science (MSc)**

### Total Course Credits :24

- Core: 10
- Non-core (Electives): 8
- Dissertation (MSc): 6

**Duration:** 3 years (6 semesters)

### Introduction:

Most countries have demonstrable nutrition-related health problems spanning the range of under-nutrition, poverty-related food insecurity, micronutrient deficiencies, and diet-related chronic diseases. About seventy percent of the most prevalent diseases leading to ill health and premature deaths are considered to be nutritionally oriented.

The increasing incidence of diet-related diseases and the growing evidence of the role of nutrition in the prevention and treatment of diseases demonstrate the importance of nutrition in the health and wellbeing of the population.

In order to develop effective nutritional treatment plans for communities and individuals, it is essential to have the required ability that will make it possible to solve the aforementioned problems. This technological ability is rooted in the Nutritional Medicine program, which will additionally be able to explore the role of nutrition in disease prophylaxis and management that will lead to a happy, healthy and vibrant life.

### Definition:

Nutritional Medicine is a new field in medicine that is based on clinical nutrition but is wider in scope, covering aspects of nutrition and health via the role that nutrition plays in health, disease, lifecycle and ageing.

In this program students will gain a deep evidence-based understanding of the complex relationships between nutrition and diseases. They will learn to take a critical and scholarly approach to theory, practice, literature and research findings, resulting in a deeper understanding of the range and potential of the nutritional management of disease.

This program prepares graduates to practice in a wide range of clinical, consulting and industrial settings. The program emphasizes on an integrative approach to healthcare.

### The Aim of the Course (including its vision and mission)

The aim of the program is to inform and train those to whom the public turns for advice on nutritionally-related aspects of health and disease.

In keeping with modern concepts concerning master graduates in the field of nutrition, all graduates will be expected to enthusiastically inform and inspire their patients and clients to adopt health-protecting and the healthy diets and develop plans to prevent, and even reverse all nutrition related-diseases in enhanced health and well-being of the patients and the community.

The mission is to develop nutritional medicine graduates who have:

- An understanding of the complex relationship between nutrition and disease.

- An understanding of nutritional, dietary and lifestyle factors which influence wellbeing throughout the lifespan, and during illness and disease.
- Ability to educate the individual or community in the area of food choices which will help maintenance of wellbeing and management of disease.
- Ability to develop effective nutritional treatment plans for communities or individuals.
- An understanding of methodologies in the design of relevant research.
- Ability to undertake supervised research activities.

### **General Competencies:**

The graduate of M.Sc. degree in Nutritional Medicine is a professional who:

- Has competency as a research assistant
- Can identify the causes of health issues, educate the patient and develop treatment and prevention plans to re-establish and promote ongoing optimal health and wellbeing.
- Can combine the traditions related to food as medicine and modern dietary planning with scientific advances in the use of nutrients at therapeutic doses in the treatment, management and prevention of disease.

### **Specific Competencies and Skills (Special Qualifications):**

The graduate of MSc degree in Nutritional Sciences has competency to:

- Counsel individuals and groups on basic roles of good nutrition, healthy eating habits, and nutrition monitoring to improve their quality of life.
- Assess nutritional needs, diet restrictions and current health plans to improve and implement nutritional plans.
- Provide nutritional counseling to patients with non-communicable disease, brain and nervous system, gastrointestinal disease and other diseases that nutrition can potentially prevent or control them.
- Advise patients and their families on the importance of nutritional principles, and food selection and preparation
- Make recommendations regarding public policy, such as food fortification and nutrition standards for specific groups.
- Participate in planning and conducting research projects on diet and nutrition.

### **The Terms and Conditions of Admission to the Course**

General guidelines:

The following can apply:

- Qualified graduates of recognized universities, colleges or schools who hold an MD Degree, Pharm.D Degree, Bachelor's degree in Dietetics, Nutritional Medicine, Nutritional Sciences as well as health care workers with a Bachelor's or master degree in medical sciences
- Students who are considered to have inadequate background in Nutrition maybe required to take additional prerequisite courses to make up for the deficiencies, without graduate credit.
- Documents to be submitted for admission: transcript of records, copy of last degree, certificate of English proficiency, and a medical certificate.

### **Educational Strategies, Methods and Techniques:**

A strong nutritional medicine approach to nutritional problems will strengthen the evidence-base for etiology, diagnostics, preventive and therapeutic interventions in solving national health problems. The guiding philosophy will be to integrate this vision into a holistic and

participatory strategy to provide a foundation for more effective health strategies and programs. The strength of the nutritional medicine program is its focus on applied science that involves nutrition science, clinical nutrition, public health and health promotion, in order to develop effective nutritional treatment plans for communities and individuals. This Program is an evidence-based course on the role of nutrition in health and disease, covering the principles of nutrition and special subjects. The course will be offered through class training with didactic lectures and practicum content, and will focus heavily on skill learning and development.

#### **Student Assessment:**

Methods of the assessment

Students will be evaluated by the following methods:

Written examination; verbal

b) Types of the assessment

Periodic, comprehensive (final); monitoring of progress and completion of Dissertation

#### **Ethical issues**

The graduates should,

- Observe the Patient's Bill of Rights<sup>1</sup> when working with the patients.
- Observe the Rulebook for Dress Code<sup>2</sup>.
- Strictly observe the Regulations of Working with the Laboratory Animals<sup>3</sup>.
- Carefully preserve resources and equipment.
- Truly respect faculty members, the staff, classmates and other students and work for creating an intimate and respectful atmosphere.
- Observe social and professional ethical considerations in criticism.

1, 2 and 3 are contained in the Enclosures.

\* Biosafety and Patient Safety Rules will be set out by the Educational Departments and will be available to the students.

## Tables of the Courses

**Table 1. Core Courses**

Title of the Course	Number of Credits
Principles of Nutrition I (2 units)	2
Principles of Nutrition II (2 unit)	2
Nutritional Epidemiology (2 units)	2
Preventive Nutrition (2 units)	2
Clinical Nutrition and Nutritional Support (2 units)	2
<b>Total</b>	<b>10</b>

**Table 2. Non-core Courses**

Title of the Course	Number of Credits
Nutrition and Weight Management (2 units)	2
Nutrition and Inherited Metabolic Disorders (2 units)	2
Nutritional Aspects of Pregnancy, Infancy and Childhood (2 units)	2
Nutrition and Aging (2 units)	2
Nutrition and Bone and Dental Health (2 units)	2
Nutrition and Exercise for Health and Sports Performance(2 units)	2
Nutrition and the Brain and Nervous System (2 units)	2
Nutrition and Diabetes Mellitus(2 units)	2
Nutrition and Gastrointestinal Diseases (2 units)	2
Nutrition and Cardiovascular Diseases (2 units)	2
Nutritional Support of Critically Ill Patients (2 units)	2
Nutrition and Immune Diseases (2 units)	2
Nutrition and Cancer (2 units)	2
Nutrition and Renal Diseases (2 units)	2
Nutrition and Hematologic Diseases (2 units)	2
Medical Ethics and Legal Issues (2 units)	2
<b>Total</b>	<b>Choose 8 courses from the list</b>

**Dissertation: 6 units**

## **Course Details**

**Title of the Course: Principles of Nutrition I**

**Code of the course: 01**

**Number of Credits: 2**

**Type of the course: Theory**

**Prerequisites:-**

**Principal objective(s) of the course:**

By the end of the course students should understand and apply the principles of nutritional sciences to integrate biochemical and physiological aspects of energy and macronutrient utilization, macronutrient interactions and metabolic regulation in humans.

**Course description:**

This course is the foundation of nutrition science and metabolism. Macronutrients, their function, metabolism and relation to health and disease are reviewed in detail. In addition, the digestion, absorption, transport, utilization and storage of macronutrients in humans are taught.

**Main topics: 34 hours**

Introduction to nutrition, literature

Basis of healthy diet

The processes of digestion, absorption, and transport

Energy metabolism

Energy balance and weight management

Nutrient and energy requirements

Dietary fiber

Fatty acids

Cholesterol metabolism

Protein, peptides, amino acids

Public health nutrition, prevention empowerment (Diet, health and disease)

**Principal reference(s):**

1. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

2. Modern Nutrition in Health and Disease (Modern Nutrition in Health & Disease (Shils)11e, December 18, 2012 by A. Catharine Ross, Robert J. Cousins, Katherine L. Tucker, Thomas R. Ziegler

3. Human Nutrition and Dietetics (Harcourt Medical) 10th Edition Paperback – 28 Oct 1999 by J. S. Garrow, FRCP FRCP(Edin), W. Philip T. James, A. Ralph

4. Introduction to Human Nutrition, 2nd Edition by Michael J. Gibney (Editor), Susan A. Lanham-New (Editor), Aedin Cassidy (Editor), Hester H. Vorster (Editor), March 2009

5. Human Nutrition and Health Education by R.Tait Mckenzie, R.B.Alfin-Slater, J.Mayer, T. Garnett. Second edition, 2010.

6. Present Knowledge in Nutrition, 10th Edition by John W. Erdman, Jr. (Editor), Ian A. MacDonald (Editor), Steven H. Zeisel (Editor) July 2012, ©2012, Wiley-Blackwell

7. William's Essential of Nutrition and Diet therapy. 10<sup>th</sup> edition by Eleanor D.Schlenker, Sara Long Roth, 2011

8. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

**Title of the Course: Principles of Nutrition II****Code of the course:** 02**Number of Credits:** 2**Type of the course:** Theory**Prerequisites:-****Principal objective(s) of the course:**

By the end of the course students should understand and apply the principles of nutritional sciences to integrate biochemical and physiological aspects of micronutrient utilization, micronutrient interactions and metabolic regulation in humans

**Course description:**

This course is the foundation of nutrition science and metabolism. Micronutrients, their function, metabolism and relation to health and disease are reviewed in detail. In addition, the digestion, absorption, transport, utilization and storage of micronutrients in humans are taught.

**Main topics: 34 hours**

Introduction, literature  
Fat soluble vitamins  
Water soluble vitamins  
Major Minerals/Water  
Trace Minerals  
Bioactive compounds of plant foods  
Functional Foods, food fortification, safety aspects  
Public health nutrition, prevention empowerment

**Principal reference(s):**

1. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.
2. Modern Nutrition in Health and Disease (Modern Nutrition in Health & Disease (Shils)11e, December 18, 2012 by A. Catharine Ross, Robert J. Cousins, Katherine L. Tucker, Thomas R. Ziegler
3. Human Nutrition and Dietetics (Harcourt Medical) 10th Edition Paperback – 28 Oct 1999 by J. S. Garrow, FRCP FRCP(Edin), W. Philip T. James, A. Ralph
4. Human Nutrition and Health Education by R.Tait Mckenzie, R.B.Alfin-Slater, J.Mayer, T. Garnett. Second edition, 2010.



5. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

**Title of the Course: Nutritional Epidemiology**

**Code of the course: 03**

**Number of Credits: 2**

**Type of the course: Theory**

**Prerequisites:-**

**Principal objective(s) of the course:**

By the end of the course students should understand and apply the principles of nutritional epidemiology to the design of specific food and nutrition studies including surveys and surveillance.

**Course description:**

Examination of issues and strategies in the application of epidemiological methods to nutrition questions at the population level.

**Main topics: 34 hours**

Principles of nutritional epidemiology

Defining research questions and developing relevant measures

Study designs their strengths and weaknesses in the context of food and nutrition science

Understanding the mechanisms of nutritional exposures on outcomes

Importance of sampling, study size, power, chance, bias and confounding within nutritional epidemiology

**Principal reference(s):**

1. Nutritional Epidemiology, by Walter Willett, Third Edition, 2012, Oxford University Press

2- Epidemiology and Public Health Medicine, by etter, N. Matthews. I. , Churchill Livingstone, the latest edition.

3.Margetts B. and Nelson M., Design Concepts in Nutritional Epidemiology,the latest edition, Oxford University Press

4. Gibson, RS. Principles of Nutritional Assessment. the latest edition, Oxford University Press,

6. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written examination (25%)

Report 1: Critique of nutritional epidemiology paper – cohort study (25%)

Report 2: Critique of nutritional epidemiology paper – case-control study (25%)  
Report 3: Critique of nutritional epidemiology paper – surveillance report (25%)

**Title of the Course: Preventive Nutrition****Code of the course:** 04**Number of Credits:** 2**Type of the course:** Theory**Prerequisites:** Principles of Nutrition I, II (01, 02)**Principal objective(s) of the course:**

By the end of the course students should understand and apply the basics of normal nutrition for optimal health outcomes and a variety of diseases. The student will learn how specific nutritional approach can retard or reverse the major ailments of our time, including arthritis, atherosclerosis, cataracts, cancer, diabetes, high blood pressure, senility and ulcers. The student will also gain an understanding of the damage caused by free radicals and the benefits of antioxidants.

**Course description:**

The course is about the central role of nutrition in maintaining health and well being and focuses on the practical application of nutritional science in disease prevention specially diabetes, high blood pressure and degenerative diseases including arthritis, atherosclerosis, cataracts, cancer. In addition, it considers the damage caused by free radicals, food additives, contaminants and natural toxicants and the benefits of antioxidants. It also provides the fundamental concepts of nutritional genomics.

**Main topics: 34 hours**

Preventive Nutrition in the Life Cycle  
Nutrition and disease  
Genetics and Nutrition  
Nutrition and prevention of degenerative diseases  
Bioactive Food Compounds in functional foods  
Food additives and biological activity  
Dietary Supplement  
Complementary and Alternative Medicine  
Food and drug interactions

**Principal reference(s):**

1. Nutritional Health: Strategies for Disease Prevention (Nutrition and Health) by Ted Wilson, Norman J. Temple. 3rd ed. 2012
2. Nutrition in the Prevention and Treatment of Disease (Third Edition) by Ann M. Coulston, Carol J. Boushey and Mario Ferruzzi. 2012, ISBN: 978-0-12-391884-0
3. An Evidence-based Approach to Phytochemicals and Other Dietary Factors by Jane Higdon and Victoria Drake, 2012
4. Nutrition Now by Judith E. Brown, 2011

5. 'Switched On: Harnessing the Power of Nutrigenomics to Optimise Your Health' by Christine Houghton.2010

6. Epigenetics: How Environment Shapes Our Genes' by Richard C. Francis.2012

7. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

8. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

**Title of the Course: Clinical Nutrition and Nutritional Support**

**Code of the course:** 05

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should understand and evaluate nutrition assessment data and develop a nutritional support plan for patients dealing with a wide range of clinical conditions.

**Course description:**

This course is intended to introduce students to nutrition practice. Students develop knowledge and skill in clinical and dietary assessment methodologies and develop facility with medical terminology and practices. Beginning with current nutritional therapies, students construct nutritional recommendation protocols. Attention will be placed on development of nutritional practices to prevent and/or ameliorate disease.

**Main topics: 34 hours**

Introduction to nutrition care process and medical nutrition therapy  
Specialized Nutrition Assessment and Support  
Drug Therapy: Drugs and Nutritional Care  
Nutritional care record  
Charting and documentation  
Influences on nutritional care  
Nutritional Intervention  
Nutritional care for the hospitalized patient  
Nutritional care of the terminally ill or hospice patient  
Discharge planning and home care  
Enteral Nutrition, Parenteral nutrition, Transitional Feeding  
Cardiovascular diseases  
Pulmonary diseases  
Gastrointestinal diseases  
Hepatic and pancreatic diseases  
Renal diseases  
Hyper catabolic states, cancer and AIDS

**Principal reference(s):**

- 1.Clinical Nutrition, 2nd Edition. Marinos Elia (Editor), Olle Ljungqvist, Rebecca Stratton, Susan A. Lanham-New .December 2012, ©2013, Wiley-Blackwell
- 2.Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

3. Modern Nutrition in Health and Disease (Modern Nutrition in Health & Disease (Shils)11e, December 18, 2012 by A. Catharine Ross, Robert J. Cousins, Katherine L. Tucker, Thomas R. Ziegler

4. William's Essential of Nutrition and Diet therapy. 10<sup>th</sup> edition, by Eleanor D.Schlenker, Sara Long Roth,2011

5. Nutrition Counseling Skills for the Nutrition Care Process, Fourth edition, by Linda G. Snetselaar, 2008

6. Nutritional Assessment by Robert D.Lee, David C.Nieman. Fifth edition, 2009

7. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

Special projects

**Title of the Course: Nutrition and Weight Management**

**Code of the course:** 06

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should understand and apply the latest methods and techniques in weight management and what are considered the most effective steps for achieving successful weight management.

**Course description:**

This course is a nutrition and weight management program emphasizing the basics of proper nutrition while covering determinants and consequences of obesity, prevention of obesity and medical and nutritional interventions. Emphasis is placed on lifestyle changes from a nutritional overview and their relationship to appropriate weight management.

**Main topics: 34 hours**

Body weight components  
Regulation of body weight  
Activity, exercise and weight management  
Weight management throughout life cycle  
Weight imbalance; overweight and obesity: Definition, etiology, pathophysiology, consequences, adipose tissues and endocrine function, medical therapy, surgical treatment and nutritional support  
Nutrition epidemic and etiology of obesity  
Management of obesity in adults  
Common problems encountered in obesity management  
Weight management in children  
Weight imbalance: excessive leanness  
Diet prescription  
Pharmacotherapy  
Bariatric surgery  
Eating disorders and behavior modification  
Nutrition label reading

**Principal reference(s):**

1. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

2. Integrative Weight Management by Gerard E. Mullin, Lawrence J. Cheskin, and Laura E. Matarese, 2014
3. Adipose Tissue and Adipokines in Health and Disease, by Fantuzzi, Giamila, Braunschweig, Carol (Eds.), 2nd ed. 2014
4. Multidisciplinary Approach to Obesity, by Lenzi, Andrea, Migliaccio, Silvia, Donini, Lorenzo Maria (Eds.), 2015
5. Human Nutrition by Catherine Geissler; Hilary J Powers 2011 12th ed. / edited by Catherine A. Geissler, Hilary J. Powers.
6. Human Nutrition and Dietetics by Geissler C and Powers H (2005); 11th Edition.
7. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011
8. Nutrition Now by Judith E. Brown, 2011
9. Adipose Tissue in Health and Disease. Edited by Todd Leff and James G. Granneman - 2010.
10. Adipose Tissue and inflammation. Edited by ATIF B, Awad Peter G. Brad Ford. 2010
11. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments  
 Examinations  
 Group presentations  
 Special projects



**Title of the Course: Nutrition and Inherited Metabolic Disorders**

**Code of the course:** 07

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should be able to describe the underlying principles of inherited metabolic disorders (IMD), give examples of the role of metabolic lesions on the pathogenesis of common human diseases and integrate metabolic knowledge from earlier biochemistry subjects to describe the metabolic adaptations (and their underlying regulation) to a range of physiological states;

**Course description:**

This course Describes genetics of each IMD, methods of diagnosis, outcomes if untreated, reasons for and recommended amounts of each nutrient, how to plan and effectively manage nutrition of the patients, how to monitor nutrition status, problems occurring in managing nutrition, resources for management and outcomes of nutrition management.

**Main topics: 34 hours**

1. Introduction to genetics and genetics of inherited metabolic disorders.
2. Newborn screening by mass spectrometry.
3. Evaluation of nutrition status.
4. Rationales for and practical aspects of nutrition management.
5. Nutrition management of patients with inherited disorders of aromatic amino acid metabolism.
6. Nutrition management of patients with inherited disorders of branched chain amino acids metabolism.
7. Nutrition management of patients with inherited disorders of sulfur amino acid metabolism.
8. Nutrition management of patients with inherited disorders of organic acid metabolism.
9. Nutrition management of patients with inherited disorders of galactose metabolism
10. Nutrition management of disorders of patients with disorders of mitochondrial fatty acid oxidation.
11. Nutrition management of disorders of patients with inherited disorders of urea cycle enzymes.

**Principal reference(s):**

1. Nutrition and metabolism by S Lanham-New (Susan); Ian Macdonald 1921-; Helen M Roche; Nutrition Society (Great Britain) 2011 2nd ed., edited on behalf of the Nutrition Society by Susan A. Lanham-New, Ian A. Macdonald, Helen M. Roche.
2. Nutrition Management of Patients with Inherited Metabolic Disorders by Phyllis B. Acosta, 2009

3. Neonatal Nutrition and Metabolism, By Patti J. Thureen, Edited by William W. Hay, 2009

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4. Manual of Pediatric Nutrition, by Kendrin Sonneville, Christopher Duggan,  
Fifth edition (2013)

5. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

Group presentations

Special projects

**Title of the Course:** doohdlihC dna ycnafnI ,yncangerP fo stcepsA lanoitirtuN

**Code of the course:** 08

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students will learn how to assess and identify risk factors that may complicate pregnancy and lactation and to plan and participate in collaborative health care interventions. In addition, students will learn to apply their understanding of nutrition counseling, education and support of new mothers and their families. Moreover, students will learn about the nutritional needs of groups such as overweight children and will examine and evaluate intervention strategies.

**Course description: 34 hours**

This course provides students with an understanding of the anatomical, physiological, and biochemical changes that occur during pregnancy, lactation and growth and development of the infant. In this course, nutrition programs and intervention strategies for several groups and conditions such as women with normal and high-risk pregnancies will be discussed. Also, Nutritional needs and assessment of both mother and infant under normal and special circumstances will be discussed.

**Main topics:**

A: Pregnancy:

- Effect of nutritional status on pregnancy outcome
- Nutritional supplementation during pregnancy
- Nutritional Requirements
- Guide for eating during pregnancy
- Complication of pregnancy and their dietary implications

B: Lactation:

- Nutritional requirements
- Breast- feeding and infant

C: Nutrition, Fertility and Conception

D: Nutrition during infancy:

- Nutrient requirements during infancy
- Milk
- Food
- Feeding

E: Nutrition for low- birth- weight infants

- Nutrient requirements: Parenteral feeding
- Transition from parenteral to enteral feeding
- Nutrient requirements: Enteral feeding
- Feeding methods
- Selection of enteral feeding

- Growth and nutritional assessments
- Discharge care
- Neurodevelopmental outcome
- F: Nutrition in childhood:
  - Nutrient requirements
  - Providing an adequate diet
  - Nutritional concerns: obesity, underweight and failure to thrive, iron deficiency, dental caries, allergies, ADHD, autism spectrum disorder
  - Preventing chronic disorders

**Principal reference(s):**

1. Nutrition through the Life Cycle, by Brown, Judith E., 4th Edition (2011)
2. Pediatric Nutrition Handbook by AAP Committee on Nutrition , Ronald E. Kleinman MD FAAP (2008)
3. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.
3. Latest related published articles in accordance with the lecturer's opinion.

**Student assessment practices:**

- Written assignments
- Examinations
- Group presentations
- Special projects

**Title of the Course:** gnigA dna noitirtuN

**Code of the course:** 09

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should understand the issues related to aging and the health care of older adults provides the foundation for quality geriatric care. In addition, they will learn how to apply effective nutrition assessments, counseling, as well as monitoring approaches.

**Course description: 34 hours**

This course represents an advanced study of nutrition in the aging individual during health and disease. The course focuses on the interrelationships of the physiological, psychosocial, functional, economic, environmental, and pharmacological factors affecting the nutritional status of older adults. Effects of aging, malnutrition and illness (acute, chronic, and terminal disease) on nutritional status and nutrient needs are stressed.

**Main topics:**

The older population

Theories of aging

Physiologic changes: body composition changes, sensory losses, oral health status, gastrointestinal function, cardiovascular function, renal function, neurologic function, immunocompetence medications

Nutrition screening

Nutrition needs: Energy, protein, carbohydrates, lipids, minerals, vitamins, water

Nutrition issues: Dysphagia, pressure ulcers, alzheimer's and parkinson's diseases, failure to thrive

Supportive services: Community nutrition programs, assisted living and skilled care facilities

**Principal reference(s):**

1. Brown, Judith E. Nutrition through the Life Cycle, 4th Edition (2011)
2. Handbook of Clinical Nutrition and Aging by Bales, Connie W., Locher, Julie L., Saltzman, Edward , 3rd ed. 2015
3. Nutrition Now by Judith E. Brown, 2011
4. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

5. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

Group presentations

Special projects

**Title of the Course: Nutrition and Bone and Dental Health**

**Code of the course:** 10

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should be able to identify the role of nutrition and lifestyle in bone health and the prevention of osteoporosis, rickets and dental cavity within the wider context of nutrition policy for calcium and vitamin D.

**Course Description:** This course represents the critical role of the nutrition in bone and dental health. A healthy diet can be effective for prevention and management of bone and dental disorders such as osteoporosis and dental cavity. This course is intended to promote public health by investigating the role of nutrition and other factors in the optimization of bone health and the prevention of fragility fractures, and dental cavity.

**Main topics: 34 hours**

Introduction to the bone and tooth structure and physiology

Bone mass and bone density

Nutrition and bone: Calcium, phosphate, vitamin D, Magnesium, vitamin K, vitamin A, trace minerals, other nutrients

Osteopenia and osteoporosis: Etiology, risk factors, secondary prevention and treatment, dietary treatment

Nutritional Factor in Tooth Development

Dietary implications in dental caries

The lifecycle: dietary considerations for the dental patients including pregnancy, infants and toddlers, teenagers, adults and elderly

Nutritional Counseling in the Dental Practice

Prevention Care in Dental Cavity

**Principal reference(s):**

1. Nutritional Influences on Bone Health, Burckhardt, Peter, Dawson-Hughes, Bess, Weaver, Connie M. (Eds.), 2010

2. Nutrition and Bone Health by Michael F. Holick, Jeri W. Nieves, Springer, 2015

3. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011

4. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

5. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments  
Examinations



**Title of the Course: Nutrition and Exercise for Health and Sports Performance**

**Code of the course:** 11

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students will be fully prepared to provide individual counseling and group education in nutrition and exercise and to design and implement exercise and nutrition programs in weight control centers, work sites, fitness centers, health centers, schools, university athletic departments, professional and amateur sports teams, and hospitals.

**Course description:**

This course provides a thorough grounding in both nutrition science and exercise science as well as training in use of appropriate educational and behavioral theories and strategies for promoting healthy lifestyles, preventing and managing disease, and enhancing athletic performance. The newest theories in nutrition education and motivational interviewing will be applied as students learn how to successfully effect lifestyle changes in individuals and groups.

**Main topics: 34 hours**

Energy production: Adenosine triphosphate, aerobic pathway, energy continuum

Fuels for contracting muscles: Sources of fuel, substrate choice

Nutritional requirements of exercise: Fluid, glucose and sodium, osmolality, fluid requirements, endurance events

Weight management

Ergogenic aids:  $\beta$ - Hydroxy- $\beta$ - methylbutyrate creatine, DHEA, androstenedione

Intro to course and sports nutrition

Hydration

Energy balance and weight control

Body Composition

Eating disorders in Athletes

Nutrition assessment

Fuels and metabolic pathways

Endurance nutrition

Power sports nutrition

Supplements

**Principal reference(s):**

1. Clinical Sports Nutrition, by Burke and Deakin, 4rd edition, 2010

2. Fundamental of Sport and exercise Nutrition by Marie Dunford, 2010.

3. Practical Application in Sports Nutrition, 3rd edition. By Fink, Burgoon, and Mikesky (publisher: Jones and Bartlett), 2011

4. Sport and Exercise Nutrition by Susan A. Lanham-New (Editor), Samantha Stear (Editor), Susan Shirreffs (Editor), Adam Collins (Editor), October 2011
5. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.
6. NSCA'S Guide to sport and Exercise Nutrition by Bill I.Campbell, Marie A.Spano.2011
7. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments  
Examinations  
Group presentations  
Special projects

**Title of the Course: Nutrition and the Brain and Nervous system**

**Code of the course:** 12

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should understand the major principles and nutritional recommendation protocols of neurological diseases and the role of nutrients in cellular function and communication between various cell types. Also it is expected that they can provide an appropriate nutritional support for these patients.

**Course description: 34 hours**

This course presents the basic principles and concepts of the function of nervous systems. The effects of nutrients on the structure and function of the nervous system and medical nutrition therapy for several neurological diseases will be discussed.

**Main topics:**

- The introduction to the brain
- The blood brain barrier (BBB)
- Malnutrition and the brain
- The nutrition-brain-behaviour connection
- Neurologic disease classification
- Nervous system wiring and lesions: Localizing signs of mass lesions
- Medical nutrition therapy
- Problem with procurement of food
- Neurologic disease arising from nutritional deficiencies or excesses
- Neurologic disease with nonnutrition etiologies

**Principal reference(s):**

1. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011
2. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.
3. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

- Written assignments
- Examinations
- Group presentations
- Special project

**Title of the Course: Nutrition and Diabetes Mellitus**

**Code of the course:** 13

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should understand how they can have a major impact on medical and clinical outcomes and help patients with diabetes achieve dramatic improvements in the quality of life such as applying strategies for attaining and maintaining blood glucose control in diabetic patients.

**Course description:**

This course examines fundamental aspects of diabetes critical to understanding the biochemical and cellular mechanisms relevant to the correct maintenance of carbohydrates metabolism and the role of inflammation in the progression of this disease.

**Main topics: 34 hours**

Classification, screening and pathophysiology of pre-diabetes and diabetes

Prevention of diabetes

Management of diabetes

Nutrition therapy and the acute complications of diabetes

Nutrition therapy and the long-term complications of diabetes

Nutrition therapy for diabetes and pregnancy

Implementing the nutrition care process

**Principal reference(s):**

1. Nutritional and Therapeutic Interventions for Diabetes and Metabolic Syndrome by Debasis Bagchi (Editor), Sreejayan Nair (Editor), 2012
2. Nutritional Management of Diabetes Mellitus (Practical Diabetes), by Gary Frost and Anne Dornhorst, 2007
3. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011
4. Nutrition Now by Judith E. Brown, 2011
5. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.
6. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

Group presentations

Special projects

**Title of the Course: Nutrition and Gastrointestinal**

**Code of the course:** 14

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should be able to discuss the differences between Medical Nutrition Therapy (MNT) for IBS, ulcers and IBD, better assess GI patient's needs and eating habits and better determine MNT for clients with Crohn's, ulcerative colitis and short bowel syndrome.

**Course description: 34 hours**

This is a specialized course discussing nutrition support in GI disease and disorders. This course intended to introduce practical nutrition guidelines for GI problems (GERD, hiatal hernia, IBS, gastritis, Crohn's, etc.); and for common GI surgeries (ostomies and short bowel).

**Main topics:**

Physiology and Function of the gastrointestinal tract

Medical nutrition therapy for upper gastrointestinal tract disorders:

Disorders of the esophagus

Disorders of the stomach

Medical nutrition therapy for lower gastrointestinal tract disorders:

Common intestinal problems

Diseases of the small intestine

Intestinal brush-border enzyme deficiencies

Inflammatory bowel disease

Disorders of the large intestine

Intestinal surgery

Medical Nutrition Therapy for Liver, Biliary System And Exocrine Pancreas Disorders

Medical nutrition therapy for:

- Inflammatory bowel disease
- Irritable bowel syndrome
- Colon cancer
- Pancreatitis
- Hepatic failure
- Celiac sprue

**Principal reference(s):**

1. Nutrition and Gastrointestinal Disease, by DeLegge, Mark (Ed.), 2008

2. Advanced Nutrition and Dietetics in Gastroenterology, Miranda Lomer (Editor), 2014
3. Gastroenterology and Nutrition I and II by Rima A. Mohammad, ACCP, 194 pages, 2012
4. Nutritional Management of Digestive Disorders Edited by Bhaskar Banerjee, 2010 by CRC Press
5. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011
6. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.
7. Modern Nutrition in Health and Disease (Modern Nutrition in Health & Disease (Shils)11e, December 18, 2012 by A. Catharine Ross, Robert J. Cousins, Katherine L. Tucker, Thomas R. Ziegler
8. Nutrition, Diet Therapy and the Liver. Edited by Victor R Preedy, Raj Laicshman, Rajaventhana srirajaskanthan, Ronald Ross Watson, 2010.
9. Nutritional Management of Digestive Disorders. Edited by Bhaskar Banerjee, 2011
10. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments  
Examinations

**Title of the Course: Nutrition and Cardiovascular Diseases**

**Code of the course:** 15

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the study students will be able to understand and apply preventative and medical nutrition therapy for cardiovascular diseases using evidence-based guidelines, and to understand the emerging issues that patient may be asking about prevention and treatment of CVD.

**Course description:**

This course is about integrating medical nutrition guidelines to develop and evaluate meal plans for patients with cardiovascular disease and apply knowledge of the pathophysiology of cardiovascular diseases to explain prevention and treatment strategies.

**Main topics: 34 hours**

Basic heart structure and function

Cardiovascular diseases: description and pathophysiology

Lipid transport

Epidemiological studies, risk factors and assessments

Prevention recommendations

Medical nutrition assessment and diagnosis

Interventions, monitoring and evaluation

Medications including coronary Artery Disease, Myocardial Infarction, Hypertension, Stroke, Congestive Heart Failure, Peripheral Vascular Disease, Clinical Implications

Emerging Issues including glycemic load, fish oil, folate, vitamin B12 and homocysteine, soy, bioactive compounds and phenolics, flavonoids, tea and garlic

**Principal reference(s):**

1. Cardiovascular Diseases: Nutritional and Therapeutic Interventions by Nilanjana Maulik, 2013 by CRC Press Ph.D.

2. Nutritional and Metabolic Bases of Cardiovascular Disease Editor(s): Mario Mancini, José M. Ordovas, Gabriele Riccardi, Paolo Rubba, Pasquale Strazzullo, 2011

3. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011

4. Nutrition Now by Judith E. Brown, 2011

5. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

6. Latest related published articles in accordance with the lecturer's opin

**Student assessment practices:**

Written assignments

Examinations

Group presentations

Special projects



**Title of the Course: Nutritional Support of Critically Ill Patients**

**Code of the course:** 16

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should be able to identify the phases of the metabolic response, prediction of energy and protein requirements of critically ill patients and potential complications of nutritional support and reorganization of different feeding strategies for various metabolic profiles.

**Course description:**

This course represents necessary information and tools to assist health care professionals in providing appropriate nutritional support for critically ill patients. In general, Nutrition support refers to enteral or parenteral provision of calories, protein, electrolytes, vitamins, minerals, trace elements, and fluids.

**Main topics: 34 hours**

Metabolic alteration in the critically ill patients

Nutrients for the critically ill patients

Delivery nutrition support in the critically ill patients

Nutrition throughout the lifecycle in the critically ill patients

Physiology stress

Specific organ system failure

General systematic failure

Metabolic response to starvation, stress and injury

Nutritional assessment of the critically ill patients

Specialized nutritional treatment including immune-enhancing nutrients, anabolic agents

Common complications and management of feeding including Enteral and parenteral nutrition and medical interactions

**Principal reference(s):**

1. Nutritional Support in the Care of the Critically Ill Adults, 2nd Edition by Iain B. Trujillo, & Malcolm K. Robinson. © 2013 Wolf Rinke Associates, Inc.

2. American Society for Parenteral and Enteral Nutrition. The A.S.P.E.N. Nutrition Support Core Curriculum: A Case-Based Approach – The Adult Patient, 2nd edition ASPEN, 2012

3. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011

4. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments  
Examinations  
Group presentations  
Special projects

**Title of the Course: Nutrition and Immune Diseases**

**Code of the course: 17**

**Number of Credits: 2**

**Type of the course: Theory**

**Prerequisites: Principles of Nutrition I, II (01, 02)**

**Principal objective(s) of the course:**

By the end of the course students should understand the mechanism of nutrients' effect on the immune system at biochemical, molecular and cellular levels. Also they will be able to identify the nutrient status in maintaining "optimal" immune function and "disease prevention" and its implications for determining the recommended dietary allowance.

**Course description:**

This course will review the impact of various nutrients (in both deficient and supplemental states) on maintaining the homeostasis of the immune system during physiological and pathological states as well as during different developmental stages of life. The implications for disease development and/or prevention will be discussed.

**Main topics: 34 hours**

Introduction

Defence mechanisms of the body

Pathophysiology and Etiology of Immune Disease

Role of nutrients in infection and immune functions

Nutrition and diarrhoeal disease

Food Allergies and Food Intolerances

Food Allergy in Infancy

Relationships between infections and non-communicable diseases

Nutritional Recommendation and Treatment in Autoimmune Diseases

**Principal reference(s):**

1. Nutrition, Immunity and Infection by Prakash S. Shetty, 2010
2. Dietary Components and Immune Function by Watson, Ronald Ross, Zibadi, Sherma, Preedy, Victor R. (Eds.), 2010
3. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011
4. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

**Title of the Course: Nutrition and Cancer**

**Code of the course: 18**

**Number of Credits: 2**

**Type of the course: Theory**

**Prerequisites: Principles of Nutrition I, II (01, 02)**

**Principal objective(s) of the course:**

By the end of the course students will have fundamental understanding of how particular nutrients impact tumor promotion or prevention. Also identify the role of nutrition in integrative care of the oncology patients and evaluating the risks of nutritional recommendations for cancer prevention, treatment will be expected.

**Course description:**

This course covers the fundamentals of nutrition in cancer treatment and prevention. It provides clinicians with a review of the current literature and a scientific basis for the integration of nutrition in the prevention and supportive treatment of cancer.

**Main topics: 34 hours**

Overview of course  
Diagnosis and medical treatment  
Nutrition in the etiology of cancer  
Obesity and risk of cancer  
Bio-active food compounds  
Tumor promoting agents-basic science  
Tumor suppressing agents-basic science  
Nutritional implications of cancer  
Nutritional implication of cancer therapy  
Nutritional care of adults diagnosed with cancer  
Nutritional care of children diagnosed with cancer  
Malnutrition following cancer therapy  
Overview of prevention and chemoprevention  
Complementary and alternative therapies  
Dietary recommendations for cancer survivors

**Principal reference(s):**

1. Advances in Nutrition and Cancer, Zappia, V., Panico, S., Russo, G.L., Budillon, A., Della Ragione, F. (Eds.), 2014
2. Willett W. Nutrition and cancer: the search continues. Nutr Cancer. 2008
3. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011
4. Nutrition Now by Judith E. Brown, 2011

5. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

6. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

Group presentations

Special projects

**Title of the Course: Nutrition and Renal Diseases**

**Code of the course: 19**

**Number of Credits: 2**

**Type of the course: Theory**

**Prerequisites: Principles of Nutrition I, II (01, 02)**

**Principal objective(s) of the course:**

By the end of the course students should understand and apply the principles of medical nutrition therapy (MNT) for a variety of kidney diseases consistent with current clinical practice recommendations.

**Course description:**

This course provides nutritional guidelines that may be recommended in the prevention and management of renal diseases including maintenance of a good nutritional status, slowing progression of disease and treatment of complications.

**Main topics: 34 hours**

Physiology and function of the kidney

Etiology and pathophysiology of renal diseases

Glomerular diseases

Disease of the tubules and interstitium

Progressive Nature of Renal Diseases

End -stage of renal diseases

Nephrolithiasis (kidney stones)

Nutrition support in acute kidney injury

Nutrition support in Chronic Kidney Disease (CKD)

Nutrition support in Maintenance Haemodialysis (MHD) Patients

Nutrition support in peritoneal dialysis patients

**Principal reference(s):**

1. Medical Nutrition Therapy of Kidney Disease by N. L. Kondracki. Copyright 2011 by Wolf Rinke Associates, Inc.

2. Nutritional Management of Renal Disease, Third Edition Hardcover –by Joel D. Kopple (Editor), Shaul G Massry (Editor), 2012

3. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011

4. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.

5. Latest related published articles in accordance with the lecturer's opinion.

**Student assessment practices:**

Written assignments  
Examinations

**Title of the Course: Nutrition and Hematologic Diseases**

**Code of the course:** 20

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** Principles of Nutrition I, II (01, 02)

**Principal objective(s) of the course:**

By the end of the course students should demonstrate a comprehensive working knowledge and practical competency of the diagnostic criteria for nutritional deficiency anemias based on clinical presentations and laboratory analysis of the deficient. Moreover, they should understand a comprehensive working knowledge of the physiology of iron, vitamin B12 and folate utilization, storage and transport.

**Course description:**

This course demonstrates the practical competency for the role of nutrition in the care of patients with hematologic disorders. Moreover, this course describes the physical and psychological significance, and limitations, of nutrition in hematologic disease.

**Main topics: 34 hours**

Basic principles of hematology

Normal Hematopoiesis

Red Blood Cell Disorders including Anemias

Nutritional Deficiencies in anemias

Anemia of Chronic Disease

RBC Destruction Disorders including Hemoglobinopathies and Hemolytic Anemias

Nutrition therapy for Hemoglobinopathies and Hemolytic Anemias

Normal Mechanisms of Hemostasis

Nutrition therapy for Bleeding Disorders

Nutrition therapy for Thrombotic Disorders

Hematologic Neoplastic Disorders

Nutrition therapy for Neoplastic Disorders

Pregnancy, anemia and nutrition therapy

Supplement therapy for hematological disorders

**Principal reference(s):**

1. Hematology: Basic Principles and Practice By Ronald Hoffman, MD, Bruce Furie, MD, Edward J. Benz, Jr., MD, Philip McGlave, MD, Leslie E. Silberstein, MD and Sanford J. Shattil, MD. Copyright © 2009 by Churchill Livingstone, an imprint of Elsevier Inc.

2. Nutrition Therapy and Pathophysiology by Maria Nelms, Kathryn P. Sucher, Karen Lacey, Sara Long Roth. Second edition. 2011

3. Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy (Krause's)– September 7, 2011 by L. Kathleen Mahan, Janice L Raymond, Sylvia Escott-Stump.



4. Modern Nutrition in Health and Disease (Modern Nutrition in Health & Disease (Shils)11e, December 18, 2012 by A. Catharine Ross, Robert J. Cousins, Katherine L. Tucker, Thomas R. Ziegler

5. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

Group presentations

Special projects

**Title of the Course: Medical Ethics and Legal Issues**

**Code of the course:** 21

**Number of Credits:** 2

**Type of the course:** Theory

**Prerequisites:** -

**Principal objective(s) of the course:**

By the end of the course students should understand the main medico-legal concepts and issues in the practice of modern healthcare. It addresses the fundamental questions affecting health care and allied professionals today.

**Course description:**

This course will explore the major ethical issues confronting the practices of medicine and biomedical science. The students will become familiar with legal and institutional positions, consider and debate opposing arguments on the various topics, and examine relevant case studies.

**Main topics: 34 hours**

Introduction to Law and Medical Ethics

Consent to medical treatment

Refusal of medical treatment

Withholding and Withdrawing Care

Medical Negligence

Patient Confidentiality

Human Rights and Medical Practice

Research and Ethical Approval

Ethical dealing with lab animals

Fairness among patients

Conflict of interest (accepting gifts from patients or industry)

**Principal reference(s):**

1. The Law and Ethics of Medical Research: by Aurora Plomer, Cavendish Publishing, the latest
2. Law and Medical Ethics by J.K.Mason, G.T.Laurie, the latest edition, Oxford
3. Medical Ethics Today, by Veronica English, Gillian Romano-Critchley, Julian Sheather, Ann Sommerville, the latest edition,
4. Clinical Ethics, by Albert R. Jonsen, Mark Siegler, William J. Winslade, the latest edition
5. Latest related published articles in accordance with the lecturer's opinion

**Student assessment practices:**

Written assignments

Examinations

**Jamshid Hajati PhD**  
**Secretariat of the Council for**  
**Education of Health and Basic**  
**Medical Sciences (Undergraduate**  
**and Postgraduate)**



**Seyed Mansour Razavi MD**  
**Secretary of the Supreme**  
**Council for Medical**  
**Sciences Planning**



**Bagher Larijani MD**  
**Deputy for Education**  
**Ministry of Health and Medical Education**

