Faculty of Medicine in Rijeka

Curriculum
2026/2027

For course

Nutrition - a Source of Health and Disease

Study program:	**Medical Studies in English (R)** (elective) University integrated undergraduate and graduate study
Department:	**Department of Medical Chemistry, Biochemistry and Clinical Chemistry**
Course coordinator:	**prof. dr. sc. Batičić Lara, dipl. sanit. ing.**
Year of study:	**1**
ECTS:	**1.5**
Incentive ECTS:	**0 (0.00%)**
Foreign language:	**Possibility of teaching in a foreign language**

Course information:

Course Description

Nutrition – A Source of Health and Disease is an elective course offered in the first year of the University Integrated Undergraduate and Graduate Study Programme of Medicine in English. The course comprises 25 seminar hours and carries 1.5 ECTS credits.

The course introduces medical students to the fundamental principles of human nutrition and the complex relationship between diet, metabolism, health, and disease. Nutrition plays a central role in growth, development, tissue maintenance, immune function, and the prevention and management of numerous diseases. Conversely, inadequate nutrient intake, nutritional imbalances, and unhealthy dietary patterns can contribute to metabolic dysfunction, chronic inflammation, and the development and progression of various pathological conditions.

Particular emphasis is placed on the medical importance of nutrition in the prevention and management of obesity, metabolic syndrome, diabetes mellitus, cardiovascular diseases, atherosclerosis, certain cancers, and eating disorders, including anorexia nervosa and bulimia nervosa. The course also addresses nutritional requirements throughout the life course, including childhood, pregnancy, and older age, as well as the role of nutrition in selected chronic diseases. Additional topics include healthy dietary patterns, the critical evaluation of nutritional recommendations, and genetically modified organisms in the context of food and health.

Through guided seminars, critical discussion, and student presentations, students explore the scientific evidence underlying dietary recommendations and develop the ability to distinguish evidence-based nutritional information from misconceptions and unsupported claims. The course provides a foundation for understanding nutrition as an integral component of preventive medicine, health promotion, and patient-centred clinical practice.

Course Aim

The aim of the course is to provide students with fundamental knowledge of human nutrition and its relationship with physiological processes, disease development, and health outcomes. Students will develop the ability to critically evaluate dietary patterns and nutritional recommendations, recognise nutritional risk factors for common diseases, and understand the role of appropriate nutrition in disease prevention and the supportive management of patients with chronic conditions.

Teaching and Learning Methods

The course combines introductory teaching, student-led seminars, guided discussions, and critical appraisal of scientific information. Following an introduction to the basic principles of nutrition, students select topics from a proposed list or suggest topics of their own interest, under the guidance of the course instructor. Topics are explored through independent preparation and oral presentations, followed by structured discussions addressing their physiological, pathophysiological, and clinical implications.

This approach encourages active learning, evidence-based reasoning, scientific communication, and the ability to critically assess nutritional claims and recognise inaccurate or misleading health information.

Learning Outcomes

Upon successful completion of the course, students will be able to:

Explain the basic principles of human nutrition and the physiological roles of major nutrients in energy metabolism, cellular function, growth, and tissue maintenance.

Describe the relationship between nutritional status, metabolic processes, and the development of pathological conditions.

Explain the principles of a balanced diet and identify nutritional requirements at different stages of life, including childhood, pregnancy, and older age.

Discuss the role of dietary factors in the development, prevention, and management of obesity, metabolic syndrome, diabetes mellitus, cardiovascular diseases, selected cancers, and eating disorders.

Recognise the importance of appropriate nutritional strategies in patients with selected chronic diseases.

Critically evaluate scientific evidence, dietary recommendations, and claims concerning nutrition and health.

Present and discuss nutrition-related topics using evidence-based information and appropriate scientific terminology.

List of assigned reading:

1. T.M. Devlin, Textbook of Biochemistry with clinical correlation, J. Wiley & sons, New York 2003.
2. Caroll A. Lutz: Nutrition and Diet Therapy, F. A. Davis Company; 3rd edition 2001
3. Varki, Ajit; Cummings, Richard; Esko, Jeffrey; Freeze, Hudson; Hart, Gerald; Marth, Jamey, editors. Essentials of Glycobiology. 1st ed. Plainview (NY): Cold Spring Harbor Laboratory Press; c1999.
4. Sue Rodwell, Phd Williams: Basic Nutrition and Diet Therapy, C. V. Mosby; 11th CD-Rom, 2000.
5. B. Vrhovac i sur., Interna medicina, 3. i dopunjeno izdanje, Medicinska naklada, Zagreb 2003.
6. S. Gamulin i sur., Patofiziologija, Medicinska naknada, Zagreb 2002.

Seminars and PPT presentations in PDF format will be available for students to download from the Merlin platform.

List of optional reading:

1. C. Smith, A. D. Marks: Mark’s basic Medical Biochemistry, A Clinical Approach. Lippincot & Williams & Wilkins, Philadelphia 2005.
2. L. Rapport, B. Lockwood: Nutraceuticals, Pharmaceutical Press, 2004.
3. K. Saltsman, J. Berg, G. Tomaselli: A Clinical Companion to Accompany Biochemistry, Freeman, New York 2002.
4. R.E.C. Wildman: Handbook of Nutraceuticals and Functional Foods, Lewis Publishers, Inc.; 1st edition, 2000.
5. I. Goldberg: Functional Foods: Designer Foods, Pharmfoods, Nutraceuticals, Plenum US; 1st edition 1994.

Curriculum:

Seminars list (with titles and explanation):

S1:Introduction to Nutrition. Basic facts and principles.

Specify, describe and recognize basic facts and principles of nutrition. Describe and define macro- and micronutrients.

S2: Introduction to Nutrition. Basic facts and principles.

Specify, describe and recognize basic facts and principles of nutrition. Describe and define macro- and micronutrients.

S3. Mediterranean diet

Specify and describe properties of a Mediterranean diet. Understand the impact of Mediterranean diet on health.

S4. Mediterranean diet

Specify and describe properties of a Mediterranean diet. Understand the impact of Mediterranean diet on health.

S5 Vegetarian and vegan diet

Specify and describe properties of a vegetarian and vegan diet. Understand the effect of vegetarian and vegan diet on health. Advantages and disadvantages of vegetarian and vegan diets.

S6 Vegetarian and vegan diet

Specify and describe properties of a vegetarian and vegan diet. Understand the effect of vegetarian and vegan diet on health. Advantages and disadvantages of vegetarian and vegan diets.

S7 Nutrition in pregnancy

Describe specific nutritional needs of a pregnant women. Specify dietary requirements in pregnancy.

S8. Nutrition in pregnancy

Describe specific nutritional needs of a pregnant women. Specify dietary requirements in pregnancy.

S9 „Superfoods“

Describe, recognize and differentiate various „superfoods“. Explain the impact of „superfoods“ on health.

S10. „Superfoods“

Describe, recognize and differentiate various „superfoods“. Explain the impact of „superfoods“ on health.

S11 Vitamins and Minerals

Specify the importance of vitamins and minerals in biochemical processes. Recognize and differentiate symptoms of hyper and hypovitaminosis. Describe roles of each vitamin and mineral in the human body. Describe pathologies related to vitamin and mineral deficiency.

S12 Vitamins and Minerals

Specify the importance of vitamins and minerals in biochemical processes. Recognize and differentiate symptoms of hyper and hypovitaminosis. Describe roles of each vitamin and mineral in the human body. Describe pathologies related to vitamin and mineral deficiency.

S13Vitamins and Minerals

Specify the importance of vitamins and minerals in biochemical processes. Recognize and differentiate symptoms of hyper and hypovitaminosis. Describe roles of each vitamin and mineral in the human body. Describe pathologies related to vitamin and mineral deficiency.

S14 Vitamins and Minerals

Specify the importance of vitamins and minerals in biochemical processes. Recognize and differentiate symptoms of hyper and hypovitaminosis. Describe roles of each vitamin and mineral in the human body. Describe pathologies related to vitamin and mineral deficiency.

S15 Nutrition and chronic diseases

Specify, recognize and describe nutritional specificities in different chronic diseases. Describe the impact of nutrition on chronic disease developme

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Specify, recognize and describe nutritional specificities in different chronic diseases. Describe the impact of nutrition on chronic disease developme

S19 Restrictive diets

Specify, recognize and differentiate different causes of weight loss. Describe properties of various restrictive diets.

S20 Restrictive diets

Specify, recognize and differentiate different causes of weight loss. Describe properties of various restrictive diets.

S21 Nutrition disorders. Anorexia. Bulimia

Specify, recognize and differentiate different causes and properties of nutrition disorders. Describe and recognize properties of anorexia and bulimi

S22 Nutrition disorders. Anorexia. Bulimia

Specify, recognize and differentiate different causes and properties of nutrition disorders. Describe and recognize properties of anorexia and bulimi

S23 Genetically modified food

Define genetically modified organisms Describe properties of genetically modified food. Explain potential benefits and disatvantages of genetically modified organisms.

S24 Genetically modified food

Define genetically modified organisms Describe properties of genetically modified food. Explain potential benefits and disatvantages of genetically modified organisms.

S25 Genetically modified food

Define genetically modified organisms Describe properties of genetically modified food. Explain potential benefits and disatvantages of genetically modified organisms.

Student obligations:

Attendance of seminars is mandatory. Students can be absent from up to 30% of seminars for a justified reason. For a detailed description of obligations during classes, see the Assessment section.

Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

Student assessment is carried out in accordance with the current University of Rijeka Study Regulations and the Ordinance on Student Assessment and Evaluation at the Faculty of Medicine Rijeka (adopted by the Faculty Council of the Faculty of Medicine in Rijeka).
Student work will be evaluated during classes. Out of a total of 100 grade points, the student can obtain 40 grade points (60%) for the written seminar, 40 grade points (40%) for the presentation and discussion of the topic, 10 grade points (10%) for class attendance and activity/participation in discussions and 10 grade points (10%) for students' evaluation.
Student assessment is performed using the ECTS (A–F) and numerical grading system (1–5). Student assessment according to the ECTS system is carried out based on the absolute distribution and graduate-level assessment criteria.
Grades in the ECTS grading system are converted into the numerical system as follows:
A (5, excellent) 90 – 100 % credits
B (4, very good) 75 – 89.99 % credits
C (3, good) 60 – 74.99 % credits
D (2, sufficient) 50 – 59.99 % credits
F (1, insufficient, fail) less than 50 % credits

Other notes (related to the course) important for students:

Course content and all information related to the course and exam dates can be found on the Faculty's website. All student inquiries, possible problems and remarks regarding the course are communicated using the official e-mail address (@uniri.hr). It is possible to arrange consultations with the professors.
Retaking the course:
Students who do not give a presentation during classes and/or are absent from more than 30 % of seminars are graded as insufficient (F)

COURSE HOURS 2026/2027

Nutrition - a Source of Health and Disease

Seminars (Place and time or group)
23.10.2026

S1:Introduction to Nutrition. Basic facts and principles.:
• P01 (15:00 - 16:30) [348]
  ○ Nasohad
 	
S2: Introduction to Nutrition. Basic facts and principles.:
• P01 (15:00 - 16:30) [348]
  ○ Nasohad

prof. dr. sc. Batičić Lara, dipl. sanit. ing. [348]

List of lectures, seminars and practicals:

SEMINARS (TOPIC)	Number of hours	Location
S1:Introduction to Nutrition. Basic facts and principles.	1	P01
S2: Introduction to Nutrition. Basic facts and principles.	1	P01
S3. Mediterranean diet	1	
S4. Mediterranean diet	1	
S5 Vegetarian and vegan diet	1	
S6 Vegetarian and vegan diet	1	
S7 Nutrition in pregnancy	1	
S8. Nutrition in pregnancy	1	

S9 „Superfoods“	1	
S10. „Superfoods“	1	
S11 Vitamins and Minerals	1	
S12 Vitamins and Minerals	1	
S13Vitamins and Minerals	1	
S14 Vitamins and Minerals	1	
S15 Nutrition and chronic diseases	1	
S16 Nutrition and chronic diseases	1	
S17 Nutrition and chronic diseases	1	
S18 Nutrition and chronic diseases	1	
S19 Restrictive diets	1	
S20 Restrictive diets	1	
S21 Nutrition disorders. Anorexia. Bulimia	1	
S22 Nutrition disorders. Anorexia. Bulimia	1	
S23 Genetically modified food	1	
S24 Genetically modified food	1	
S25 Genetically modified food	1	

EXAM DATES (final exam):
