

SYLLABUS

REGARDING THE QUALIFICATION CYCLE FROM FEBRUARY 2021 TO SEPTEMBER 2022

1. Basic Course/Module Information

Course/Module title	Food chemistry
Course/Module code *	
Faculty (name of the unit offering the field of study)	College of Medical Sciences, University of Rzeszow, Rzeszów, Poland
Name of the unit running the course	Department of Dietetics, Institute of Health Sciences
Field of study	Dietetic
Qualification level	1st degree
Profile	Practical
Study mode	Stationary
Year and semester of studies	I year, I semester
Course type	Dietetics course in English language
Language of instruction	English
Coordinator	PhD Eng. Agnieszka Ewa Stępień
Course instructor	PhD Eng. Agnieszka Ewa Stępień – Lectures, Lab classes

* - as agreed at the faculty

1.1. Learning format – number of hours and ECTS credits

Semester (no.)	Lectures	Classes	Colloquia	Lab classes	Seminars	Practical classes	Internships	others	ECTS credits
1	4			6					3

1.2. Course delivery methods

- conducted in a traditional way
- involving distance education methods and techniques

1.3. Course/Module assessment (exam, pass with a grade, pass without a grade)

pass with a grade - lectures

pass without a grade - lab classes

2. PREREQUISITES

Knowledge of chemistry and biology at the extended high school level.

3. OBJECTIVES, LEARNING OUTCOMES, COURSE CONTENT, AND INSTRUCTIONAL METHODS

3.1. Course/Module objectives

O ₁	To acquaint students with chemical substances present in food and the functions they perform, the impact on the human body.
O ₂	To familiarize the student with the impact of food storage and processing conditions on its health quality.
O ₃	Shaping the student's attitude to actively deepen knowledge in the field of food chemistry and beliefs about the importance of knowledge in the practice of nutritionist.
O ₄	Familiarizing the student with chemical analyzes of food chemical composition assessment using selected laboratory techniques.

3.2. COURSE/MODULE LEARNING OUTCOMES (TO BE COMPLETED BY THE COORDINATOR)

EK_05 ADHERES TO THE ESTABLISHED RULES OF LABORATORY WORK AND IS RESPONSIBLE FOR THE SAFETY OF OWN AND OTHER WORK. K_Ko4

Learning Outcome	The description of the learning outcome defined for the course/module	Relation to the degree programme outcomes
LO_01	KNOWS THE PROPERTIES OF THE MOST IMPORTANT FOOD INGREDIENTS AND THEIR IMPORTANCE FOR PROPER NUTRITION	K_Wo4
LO_02	EXPLAINS SOME CHANGES IN FOOD INGREDIENTS OCCURRING DURING STORAGE AND PROCESSING OF RAW MATERIALS AND FOOD PRODUCTS.	K_Wo4
LO_03	DESCRIBES THE PHYSICAL, CHEMICAL AND BIOLOGICAL PROPERTIES OF FOOD INGREDIENTS, FOOD ADDITIVES AND FOOD CONTAMINANTS AS WELL AS THE IMPACT OF STORAGE CONDITIONS ON THE PROPER SELECTION OF RAW MATERIALS.	K_Uo4
LO_04	DESCRIBES THE PHYSICAL, CHEMICAL AND BIOLOGICAL PROPERTIES OF FOOD INGREDIENTS, FOOD ADDITIVES AND FOOD CONTAMINANTS AS WELL AS THE IMPACT OF STORAGE CONDITIONS ON THE PROPER SELECTION OF RAW MATERIALS.	K_Ko1
LO_05	ADHERES TO THE ESTABLISHED RULES OF LABORATORY WORK AND IS RESPONSIBLE FOR THE SAFETY OF OWN AND OTHER WORK.	K_Ko4

3.3. Course content (to be completed by the coordinator)

A. Lectures

Content outline
Water, minerals, proteins, carbohydrates, lipids, vitamins as food ingredients.
Food additives: preservatives, dyes, flavorings.
Chemical and biochemical changes occurring in food during its storage.
Mutagenic and carcinogenic food ingredients.
Food analysis methods.

B. Classes, tutorials/seminars, colloquia, laboratories, practical classes

Content outline
Assessment of physicochemical properties of water.
Determination of the presence of proteins in food.
Determination of vitamin C, A, E content in food products.

3.4. Methods of Instruction

Lecture: a lecture supported by a multimedia presentation

Laboratory classes: designing and conducting experiments

4. Assessment techniques and criteria

4.1 Methods of evaluating learning outcomes

Learning outcome	Methods of assessment of learning outcomes (e.g. test, oral exam, written exam, project, report, observation during classes)	Learning format (lectures, classes,...)
LO-01-02	Test	lectures, classes
LO-01-05	Project, report, observation during classes	classes

4.2 Course assessment criteria

LECTURE, LABORATORY EXERCISES:

KNOWLEDGE ASSESSMENT (EK_01-EK_09):

WRITTEN TEST WITH CLOSED AND OPEN QUESTIONS.

5.0 - SHOWS KNOWLEDGE OF EDUCATION CONTENT AT THE LEVEL OF 93% -100%

4.5 - SHOWS KNOWLEDGE OF EDUCATION CONTENT AT THE LEVEL OF 85% -92%

4.0 - SHOWS KNOWLEDGE OF EDUCATION CONTENT AT THE LEVEL OF 77% -84%

3.5 - SHOWS KNOWLEDGE OF EDUCATION CONTENT AT THE LEVEL OF 69% -76%

3.0 - SHOWS KNOWLEDGE OF EDUCATION CONTENT AT 61% -68%

2.0 - SHOWS KNOWLEDGE OF EDUCATION CONTENT BELOW 60%

ATTENDANCE AT LECTURE, OBLIGATORY LABORATORY EXERCISES. USING UNAUTHORIZED TEACHING AIDS OR DEVICES DURING THE COLLOQUIUM RESULTS IN UNSATISFACTORY EVALUATION OF THE COLLOQUIUM.

POSITIVE ASSESSMENT OF LABORATORY EXERCISES INCLUDES OBTAINING: A MINIMUM OF SUFFICIENT GRADE FROM THE FINAL TEST COVERING THE CONTENT OF THE LECTURE AND LABORATORY EXERCISES, SUBMITTING CHECKS ON FOOD ANALYSIS, IMPLEMENTATION OF THE TOPIC OF PRESENTATION.

METHODS FOR VERIFYING LEARNING OUTCOMES IN TERMS OF SKILLS:

PRACTICAL EXAM.

THE CREDIT IS ORGANIZED IN THE FORM OF A SPECIFIC TASK TO PERFORM, PRESENT OR EXECUTE A PROJECT, CARRY OUT A SPECIFIC TASK.

SKILL ASSESSMENT

5.0 - THE STUDENT ACTIVELY PARTICIPATES IN CLASSES, IS WELL PREPARED, VERY WELL ABLE TO CHOOSE THE RIGHT LABORATORY EQUIPMENT AND APPARATUS TO CARRY OUT UNCOMPLICATED CHEMICAL EXPERIMENTS USED TO ASSESS FOOD QUALITY.

4.5 - THE STUDENT ACTIVELY PARTICIPATES IN CLASSES, IS ABLE TO CHOOSE APPROPRIATE LABORATORY EQUIPMENT AND APPARATUS TO CARRY OUT UNCOMPLICATED CHEMICAL EXPERIMENTS USED TO ASSESS FOOD QUALITY.

4.0 - THE STUDENT ACTIVELY PARTICIPATES IN CLASSES, IS CORRECTED, IS ABLE TO CHOOSE APPROPRIATE EQUIPMENT AND LABORATORY EQUIPMENT FOR CONDUCTING UNCOMPLICATED CHEMICAL EXPERIMENTS USED TO ASSESS FOOD QUALITY.

3.5 - THE STUDENT PARTICIPATES IN CLASSES, HIS SCOPE OF PREPARATION DOES NOT ALLOW A HOLISTIC PRESENTATION OF THE DISCUSSED PROBLEM, HE IS ABLE TO SUFFICIENTLY CHOOSE THE RIGHT LABORATORY EQUIPMENT AND APPARATUS TO CARRY OUT UNCOMPLICATED CHEMICAL EXPERIMENTS USED TO ASSESS FOOD QUALITY, SOMETIMES MAKES MISTAKES.

3.0 - THE STUDENT PARTICIPATES IN CLASSES, IS ABLE TO SUFFICIENTLY SELECT THE APPROPRIATE LABORATORY EQUIPMENT AND APPARATUS TO CARRY OUT UNCOMPLICATED CHEMICAL EXPERIMENTS USED TO ASSESS FOOD QUALITY, OFTEN MAKES MISTAKES.

2.0 - STUDENT PASSIVELY PARTICIPATES IN CLASS, STATEMENTS ARE FACTUALLY INCORRECT, THEY CANNOT CHOOSE APPROPRIATE EQUIPMENT AND LABORATORY EQUIPMENT TO CARRY OUT UNCOMPLICATED CHEMICAL EXPERIMENTS USED TO ASSESS FOOD QUALITY.

METHODS FOR VERIFYING LEARNING OUTCOMES IN TERMS OF SOCIAL COMPETENCE:

OBSERVATION OF THE LECTURER, GROUP ASSESSMENT, SELF-ASSESSMENT

SOCIAL COMPETENCE ASSESSMENT:

ASSESSMENT OF THE INITIATIVE TO DEEPEN KNOWLEDGE IN THE FIELD OF FOOD QUALITY ANALYSIS AND ASSESSMENT, ADHERES TO THE PRINCIPLES OF HEALTH AND SAFETY AT WORK WHEN PERFORMING EXPERIMENTS.

5. Total student workload needed to achieve the intended learning outcomes – number of hours and ECTS credits

Activity	Number of hours
Scheduled course contact hours	10
Other contact hours involving the teacher (consultation hours, examinations)	5
Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.)	65
Total number of hours	75
Total number of ECTS credits	3

* One ECTS point corresponds to 25-30 hours of total student workload

6. Internships related to the course/module

Number of hours	
Internship regulations and procedures	

7. Instructional materials

Compulsory literature: Peter Chi Keung Cheung, Bhavbhuti M. Mehta Editors, Handbook of Food Chemistry, Springer 2015
Complementary literature: Fotis Spyropoulos, Aris Lazidis, Ian Norton Editors, Handbook of Food Structure Development, RSC PUBLISHING 2019

Approved by the Head of the Department or an authorised person