MODULE LAYOUT

1. GENERAL

SCHOOL	FOOD AND NUTRITIONAL SCIENCES		
DEPARTMENT	FOOD SCIENCE AND HUMAN NUTRITION		
STUDY LEVEL	*Undergraduate*		
MODULE CODE	**3436**	**SEMESTER**	9th
MODULE TITLE	FOOD PHYSICAL CHEMISTRY		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures & laboratory	5	5

COURSE TYPE	Scientific area
PREREQUISITES	
LANGUAGE	Greek
IS THE COURSE OFFERED forERASMUS STUDENTS?	No
COURSE WEB PAGE	https://mediasrv.aua.gr/eclass/courses/ETDA192/

2. LEARNING OUTCOMES

Learning Outcomes

This course is a basic course in the field of Food Physical Chemistry.

Its contents aim to the introduction of students to the basic terms of liquid and solid state, colloids, biopolymers, gels, emulsions and foams.

The major goal is for students to get to know the applications that Physical Chemistry can have in the food Industry (e.g. gels, emulsions

When completing this course, students should be able to understand the basic properties of liquids, absorption, colloids, food hydrocolloids (biopolymers) and their applications/ properties, emulsions, emulsifiers, foams.

General Competenses

- Retrieve, analyze and synthesize data and information, with the use of necessary technologies
- Future research
- Make decisions
- Work autonomously
- Work in teams
- Be critical and self-critical

3. MODULE CONTENT

1. Liquids (properties, surface tension)
2. Liquids (viscosity, Newtonian and non Newtonian liquids, thermodynamic conditions for liquid-vapour equilibrium)
3. Solids
4. Mesomorphs

5. Adsorption
6. Ion-exchange resins
7. Colloids (definition, types, electrolytes)
8. Colloids (properties, ζ-potential, flocculation)
9. Biopolymers
10. Biopolymer solutions and gels
11. Emulsions (definition, o/w and w/o emulsions, properties, stability)
12. Emulsions (emulsion theories, emulsifiers)
13. Foams

4. TEACHING and LEARNING METHODS - Evaluation

TEACHING METHOD	Direct learning and lab experiments
USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES	Power point presentations Communication via the e-class platform
TEACHING ORGANISATION	

Activity	***Work load for the semester (h)***
Lectures	26
Laboratory work	39
Private studying	26
laboratory assays writing	34
Total contact hours and training	***125***

STUDENTS EVALUATION

FOR THE THEORETICAL PART

I. Written Examination that includes right or wrong questions, questions that require brief answers etc

FOR THE LABORATORY

I. Written examination (80%)

II. Written reports for laboratory exercises (20%)

5. BIBILIOGRAPHY

-Proposed Literature:

1. Lecture Notes for food physical chemistry, V. Evageliou (AUA)
2. Laboratory Notes for food physical chemistry, V. Evageliou (AUA)