Food Chemistry (Ist Year of study, IInd Semester)

Credit value (ECTS) 4

Course category
Formative (Imposed)

Course holder:
Assoc. Prof. dr. Lucia Carmen Trincă

Discipline objectives (course and practical works)
- to make students acquire the basic knowledge of food chemistry by focusing composition and properties of the main types of food substrates of plant and animal origin ;
- knowledge of the main chemical components transformations of food substrates during processing technology transport and storage;
- practical skills training for chemical analysis laboratory of food substrates .

Contents (syllabus)

Course (chapters/subchapters)
The object of study and the importance of food chemistry.Water from the food substrates.
Carbohydrates properties of interest to the food industry.
Organoleptic and physico-chemical properties of fruit, vegetables (and derived products) of interest to the food industry: - composition, physico-chemical and biochemical properties of interest to the food industry; - main chemical changes during processing, transport and storage.
Organoleptic and physico-chemical properties of sugar, honey (and its derivatives) of interest to the food industry: - composition, physico-chemical and biochemical properties of interest to the food industry; - main chemical changes during processing, transport and storage.
Organoleptic and physico-chemical properties of grain-derived products of interest to the food industry: - composition, physico-chemical and biochemical properties of interest to the food industry; - main chemical changes during processing, transport and storage.
Lipid properties of interest to the food industry.
Organoleptic and physico-chemical properties of lipid-derived products of interest to the food industry - composition, physico-chemical and biochemical properties of interest to the food industry; - main chemical changes during processing, transport and storage.
Protein properties of interest to the food industry.
Organoleptic and physico-chemical properties of fish, meat and derived products of interest to the food industry - composition, physico-chemical and biochemical properties of interest to the food industry; - main chemical changes during processing, transport and storage.
Organoleptic and physico-chemical properties of eggs, milk and derivative products of interest to the food industry - composition, physico-chemical and biochemical properties of interest to the food industry; - main chemical changes during processing, transport and storage.

Practical works
The presentation of the food chemistry laboratory; work safety rules; Laboratory equipment and utensils; good practice working infood chemistry. Determination of moisture in food substrates of plant and animal origin.
Highlighting the functional properties of carbohydrates of interest to the food industry.
Main parameters determining the organoleptic and physico-chemical characteristics of fruits and vegetables according to standard methods.
Main parameters determining the organoleptic and physico-chemical characteristics of sugar, honey and sweets according to standard methods.
Main parameters determining the organoleptic and physico-chemical characteristics of grain and derived products according to standard methods.
Highlighting TAG and determining the lipid functional properties of interest for the food industry.
Main parameters determining the organoleptic and physico-chemical characteristics of vegetable and animal lipids and their derivatives according to standard methods.
Highlighting and determining the functional properties of proteins of interest to the food industry.
Main parameters determining the organoleptic and physico-chemical characteristics of fish, meat and derivatives according to standard methods.
Main parameters determining the organoleptic and physico-chemical characteristics eggs, milk and their derivatives according to standard methods.

Bibliography

- C. Banu – Tratat de Chimia Alimentelor,Editura AGIR, 1992, 408 pag.
- C. Banu – Biochimia Produselor Alimentare,Editura Tehnică,Bucureşti,1987, 571pag
- H.Cheftel– Introduction a la biochimie et a la technologie des aliments, Ed. Tecnique et Documentation, Lavoisier, Paris,789 pag.
- L.C. Trincă, A. M. Căpraru, Chimia Alimentelor.Analiza Substraturilor Alimentare, Editura Pim, 2013, 265 pagini (ISBN 978-606-13-1260-3).
- L.C. Trincă, A.M. Ariton, Metode analitice in biochimia alimentelor, Editura Pim, 2014, 255 pagini (ISBN 978-606-13-1743-1)

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Written examination	60%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	40%

Contact

Assoc. Prof. dr. Lucia Carmen Trincă
Departament Ştiinţe Exacte- USAMV Iaşi
Aleea Mihail Sadoveanu nr. 3, Iaşi, 700490, România
telefon: 0040 232 407547,
E-mail: lctrinca@uaiasi.ro