

COURSE: EVALUATION AND MANAGEMENT OF FOOD QUALITY: MODULE OF CHEMICAL PHYSICAL AND SENSORY ANALYSIS OF FOOD			
ACADEMIC YEAR: 2016/2017			
TYPE OF EDUCATIONAL ACTIVITY: Characteristic			
TEACHER: Amalia Simonetti			
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phone:		mobile (optional): +39-339-7544642	
Language: Italian			
ECTS: 6 (5 Lectures + 1 practicals)	n. of hours: 56 (40h lesson and 16h tutorials/practice)	Campus: Potenza Dept./School: Scuola di Scienze Agrarie, Forestali, Alimentari ed Ambientali (SAFE) Program: Food Technology	Semester: I
<p>EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES</p> <p>The course will provide basic, theoretical and practical elements for a good knowledge of the physico-chemical and sensory analysis necessary for the qualitative characterization of food products, even in relation to possible modifications that could occur during the productive process.</p> <p>The main provided knowledges are :</p> <p>Purposes and chemical analysis phases of food. Experimental error, sampling and statistical treatment of experimental data. Laboratory safety and knowledge of laboratory glassware and equipment. Micro- and macro-molecules and structural characteristics of the food matrices. Implementation of an analysis process and preparation of the laboratory notebook. Influence of technological treatments on food composition. Preprocessing methods. Main physico-chemical analysis for the qualitative characterization of food products. Introduction to the sensory analysis of food.</p> <p>At the end of the course students will be able to:</p> <ul style="list-style-type: none"> • understand the role of the molecules present in different foods (compositional, nutritional and technological importance); • know the analysis methods to qualitative evaluation of food and interpret the results; • know the factors contributing to sensory perception of food 			
<p>PRE-REQUIREMENTS</p> <p>To understand the material presented in this course the following knowledges and skills are needed: general and inorganic chemistry, organic chemistry.</p>			
<p>SYLLABUS</p> <p>The group is divided in 6 teaching blocks.</p> <p>Block 1. (8h, lectures) Introduction to the course. Laboratory safety and knowledge of laboratory glassware and equipment. Techniques for separating mixtures. Experimental error, sampling and statistical treatment of experimental data. Preparation of the laboratory notebook.</p> <p>Block 2. (8h, lectures)</p>			

Purposes and chemical analysis phases of food. Implementation of an analysis process. Micro- and macro-molecules and structural characteristics of the food matrices. Water, physico-chemical analysis, water in food. Influence of technological treatments on food composition. Preprocessing methods.

Block 3. (8h, lectures)

Main physico-chemical analysis for the qualitative characterization of food products. Determination of water content and of dry matter of food. Determination of acids content of different food matrices. Determination of fat content of different food matrices and evaluation of their oxidation state. Antioxidant component in fat matrices.

Block 4. (8h, lectures)

Determination of proteins content of different food matrices. Determination of sugar content of different food matrices. Alcohol degree in alcoholic beverages. Qualitative and quantitative characterization on nutritional compounds of food by Chromatographic (GC, HPLC) and electrophoretic (SDS-PAGE, IEF) techniques.

Block 5. (8h, lectures)

Nutraceutical properties of food and their determination in vitro by spectrophotometric techniques. Determination of rheological characteristics of food and colorimetric analysis. Introduction to the sensory analysis of food, panel, basic tastes, classification of analysis methods.

Block 6. (16h, Practical activity)

Determination of acids content of different food matrices. Determination of sugar content of different food matrices. Determination of fat content of different food matrices. Spectrophotometric analysis of different food matrices. Alcohol degree. Evaluation of oxidation state of fat matrices.

TEACHING METHODS

The course is based on 6 teaching blocks and it includes 40 h lectures and 16 h practical tutorials, concerning the main physical-chemical analysis for the qualitative characterization of food products.

EVALUATION METHODS

The aim of examination is to verify the student achieved skills as previously listed.

The examination consists in an oral presentation and regards the various topics discussed and dealt with during the course and the presentation of laboratory notebook, prepared during laboratory exercitation, that has to be delivered before the oral presentation.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

The course material is constituted of selected material from reference textbooks and handouts in electronic format stored on a document cloud which will be made accessible to the students.

The recommended textbooks, to further deepen the topics covered in the course, are the following:

1. Cappelli P. & Vannucchi V. (2005). *Chimica degli alimenti*. Zanichelli editore S.p.A., Bologna, Italia.
2. Harris D.C. (2005) *Chimica analitica quantitativa* Zanichelli editore, Bologna..
3. Skoog, D.A. Leary J.J. (1995). *Chimica analitica strumentale*, EdiSES, Napoli.
4. Porretta S. (1992). *“L'analisi sensoriale”*. ED. Tecniche Nuove, Milano.

INTERACTION WITH STUDENTS

At beginning of the course the lecturer will explain to students the pre-requirements needed, the educational goals, the expected learning outcomes, the course syllabus (structure/organization), the evaluation methods and the reference textbooks. Subsequently the students who will attend assiduously the course are asked for their surname, name, telephone number, registration number and E-mail. After

each lecture, related documents in electronic format will be available on a document cloud accessible to the students.

The lecturer will be available to receive students on Monday (16.30-18.30), Wednesday (10.30 -12.30) and Tuesday (10.30-12.30) in Multimedia Lab. On the 4th floor of School.

EXAMINATION SESSIONS (FORECAST)¹

15/02/2017, 15/03/2017, 12/04/2017, 17/05/2017, 14/06/2017, 19/07/2017, 13/09/2017, 18/10/2017, 15/11/2017, 13/12/2017, 17/01/2018, 15/02/2018

EVALUATION COMMITTEE

Dott.ssa Amalia Simonetti (President), Prof.ssa Fernanda Galgano (member), Dott.ssa Marisa C. Caruso (replacement member)

SEMINARS BY EXTERNAL EXPERTS SI NO

FURTHER INFORMATION

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.