SCUOLA DI SCIENZE AGRARIE, FORESTALI, ALIMENTARI ED AMBIENTALI

COURSE: FOOD PROCESSING TECHNOLOGIES			
ACADEMIC YEAR: 2018-2019			
TYPE OF EDUCATIONAL ACTIVITY: Characteristic			
TEACHER: Fernanda Galgano			
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phone: +39-0971-20-5570		mobile (optional): +39-320-4371255	
Language: Italian			
ECTS: 9 (8 Lectures + 1 practicals)	n. of hours: 80 (64h lesson and 16h tutorials/practice)	Campus: Potenza Dept./School: Scuola di Scienze Agrarie, Forestali, Alimentari ed Ambientali (SAFE) Program: Food Technology	Semester: I

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course is focusing on the main preservation, processing and packaging techniques of the food industry, as well as providing the basic knowledge to explain the relationship between manufacturing processes and foodstuff composition. At the end, the materials and the principal food packaging techniques will be discussed.

Knowledge and understanding Knowledge and understanding of the quality characteristics of processed food products, with references to the main operations of food processing and preservation. Knowledge of the production technology of olive oils and seeds. Knowledge of the cereals and derivatives technology: production of bread, pasta and bakery products. Knowledge of the milk production for fresh consumption and processing for the production of different types of cheese, yogurt and butter. Knowledge of the technologies of production of white wines, red and sparkling wines. Knowledge of the chocolate and honey production technologies: composition, quality indices, production and preservation. Knowledge of the chemical and physical properties, useful for the characterization of the materials used for food packaging. Knowledge of the packaging and food legislation and of the main food packaging techniques.

Applying knowledge and understanding Ability to understand the issues of the leading food industry transformation processes, considering how teaching unit the process-product combination. Ability to identify existing technological conditions to be applied at every stage of a production process in order to optimize the quality of finished products. Ability to interpret the relationship between the composition and processing of the product. Ability to know the relationship between the properties and characteristics of the materials used for packaging of food products, as well as the main food packaging techniques.

Making judgements Capacity to identify problems of optimization and standardization of processing and food packaging, depending on the characteristics and variability of the raw material used.

Communication skills Ability to communicate the main food process operations used and the effects of process and raw material parameters on the quality of the finished product. Ability to communicate the characteristics and properties of packaging materials for foodstuffs and to identify the most appropriate packaging systems in relation to the type of food.

Learning skill Ability to access, document and interpret data on the qualitative assessment of food, in relation to the production process, storage and packaging, and in relation to the raw materials used. Ability to access documentation and information sources on Ability on food processing and food packaging by using technical and scientific literature.

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PRE-REQUIREMENTS

To understand the material presented in this course the following knowledges and skills are needed: general and inorganic chemistry, organic chemistry, physics and mathematics and unit operations.

SYLLABUS

The group is divided in 9 teaching blocks.

Block 1. (8h, lectures)
Introduction to the course. Main operations of food processing preservation.

Block 2. (8h, lectures)
Production technology of olive oils and seeds.
Block 3. (8h, lectures)
Cereals and derivatives technology: production of bread, pasta and bakery products.
Block 4. (8h, lectures)
Milk production for fresh consumption and processing for the production of different types of cheese, yogurt and butter**.**
Block 5. (8h, lectures)
Technologies of production of white wines, red and sparkling wines
Block 6. (8h, lectures)
Chocolate technology. Honey: composition, quality indices, production and preservation**.** Food labeling.
Block 7. (8h, lectures)
Chemical and physical properties, useful for the characterization of the materials used for food packaging.
Block 8. (8h, lectures)
Packaging legislation. Main food packaging techniques.
Block 9. (16h, Practical activity)
exercises in the classroom regarding numerical and technical visits to food industries and food packaging. There will be some in-depth seminars on specific topics taught by experts in the food field.

TEACHING METHODS

The course is based on 9 teaching blocks and it includes 64 h lectures and 16 h practical tutorials, concerning exercises in the classroom regarding numerical and technical visits to food industries and food packaging. There will be some in-depth seminars on specific topics taught by experts in the food field.

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. The exam provides for the preparation of an elaborate in-depth written about a topic previously agreed with the teacher, treated during the course and in its oral Power Point presentaion in classroom.

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 made accessible to the students.
The recommended textbooks, to further deepen the topics covered in the course, are the following:

1. Lee D.S., Yam K.L., Piergiovanni, L. (2008). Food Packaging science and Technology Ed. CRC Press.
2. Del Nobile M.A., Conte A. (2013). *Packaging for food preservation.* Ed. Springer, Londra.
3. Di Giovacchino L. (2010). Tecnologie di lavorazione delle olive in frantoio. Rese di estrazione e qualità dell'olio. Ed. Tecniche nuove, Bologna.
4. Carrai B. (2001). *Arte bianca*. Ed. Edagricole, Bologna.
5. Mondelli G. (2009). *L'essiccazione statica della pasta* Ed. Avenue media, Milano-Bologna.

6. Gobbetti M., Corsetti A. (2010). Biotecnologia dei prodotti lievitati da forno. Casa ed. Ambrosiana, Milano.
7. Gigliotti C., Verga R. (2007). *Biotecnologie alimentari*. Ed Piccin, Padova.
8. Corradini C. (1995). Chimica e Tecnologia del latte. Tecniche Nuove, Bologna.
9. Salvadori Del Prato, O. (1998). *Trattato di tecnologia casearia*. Ed Edagricole, Bologna.
10. Barone, C., Bolzoni, L., Caruso, G., Montanari, A., Parisi, S., Steinka (2015). *Food Packaging Hygiene*. Ed. Springer, Berlino.

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 (16.20-18.30), Wednesday (11.30 13.30) and Tuesday (16.30-18.30) in her study and/or even in other days, preferably after an E-mail contact.

EXAMINATION SESSIONS (FORECAST)[1]

14/02/2019, 14/03/2019, 11/04/2019, 16/05/2019, 13/06/2019, 18/07/2019, 19/09/2019, 17/10/2019, 14/11/2019, 12/12/2019, 16/01/2020

EVALUATION COMMITTEE

Prof.ssa Fernanda Galgano (President), Dott.ssa Marisa C. Caruso (member), Prof.ssa Annamaria Ricciardi (replacement member)

SEMINARS BY EXTERNAL EXPERTS SI X NO □

FURTHER INFORMATION

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