Universitat de Lleida

DEGREE CURRICULUM

FOOD ADDITIVES AND FUNCTIONAL FOODS

Coordination: BALCELLS FLUVIA, MERCE

Academic year 2021-22

Subject's general information

Subject name	FOOD ADDITIVES AND FUNCTIONAL FOODS
Code	102250
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION
Typology	

Degree	Course	Character	Modality
Bachelor's Degree in Food Science and Technology	3	OPTIONAL	Attendance-based

Course number of credits (ECTS)	6
Type of activity, credits, and groups	

Activity type	PRALAB	PRAULA	TEORIA
Number of credits	1.5	1.8	2.7
Number of groups	3	1	1

Coordination	BALCELLS FLUVIA, MERCE
Department	CHEMISTRY
Important information on data processing	Consult this link for more information.

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BALCELLS FLUVIA, MERCE	merce.balcells@udl.cat	4,5	
SANS BADIA, ALBERTO	albert.sans@udl.cat	2,5	
TORREGROSA GARCIA, RUBEN	ruben.torregrosa@udl.cat	2	

Learning objectives

The student must be able to: (exemple)

Know the main groups of additives used in food: its characteristics, behavior, applications, issues related to the safe use of them, ...

Know how the properties of food additives relate to their food application.

Know what are functional foods, what functional foods are in the market, how they are obtained, what special considerations must taken for each of them,

Know how to use the theoretical information to understand the function of the different functional ingredients in foods

Subject contents

1.- Introduction.
2.- Risk evaluation in the use of food additives. Legal aspects of the use of food additives.
3.- Preservatives
4.- Antioxidants
5.- Water activity depressing additives
6.- Colorants.
7.- Sweeteners.
8.- Flavorings and flavor enhancers.
9.- Thickeners and gelling additives.
10.- Emulsifiers.
11.- Anti-caking agents.
12.- Functional foods. Definition, legal aspects.
13.- Security and effectiveness guarantee of functional foods.
14.- Supplements for nutritional purposes in foods.
15.- Prebiotics, probiotics and symbiotics.
16.- Dietary fiber.
17.- Antioxidants and phytochemicals.
18.- Functional lipids.
19.- Amino acid-based compounds.
20.- Sugar substitutes.
21.- Fat substitutes and replacers.

Practical activities
1.- Vegetable pigments. Stability of natural dyes.
2.- Food hydrocolloids: alginates, carrageenans, galactomannans, pectins.
3.- Emulsifiers. Evaluation of emulsifying capacity.
4.- Food supplements. Evaluation of the stability of ascorbic acid.

Methodology

Activity	Description	On class dedication (hours)	Student dedication (hours)	Evaluation (hours)	Total Hours	ECTS
Class lessons	Class	27	27	2	56	2,2
Problems solving	Class	18	24	2	38	1,5
Laboratory	Lab practice	15	24		39	1,6
Other	Individual report		9	2	17	0,7
Total		**60**	**84**	**6**	**150**	**6**

Evaluation

Activity	Evaluation activity	Number	Marks (%)
Class lessons	Written exam	1	**20**
Problem-solving	Short reports		**20**
Laboratori	Lab report	1	**25**
Activitats dirigides	Report	1	**35**
Total			**100**

Bibliography

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Counsell J.N. ed. (1981).

Food emulsions. Principles, Practice and Techniques. D.J.McClements CRC Press (1999)

Hydrocolloid applications. A. Nussinovitch. Blackie Academic and Professional (1997)

Essentials of functional foods M.K.Schmidl, T.P.Labuza Aspen Publ. (2000)

Guide to functional food ingredients J.Young ed.. Leatherhead Publ. (2001)