SYLLABUS

1. Course description

Degree:	**Biotechnology**
Course:	**Plant Metabolites of Interest in Biotechnology**
Module:	**Optional Training**
Department:	**Physiology, Anatomy and Cell Biology**
Academic Year:	**2017-18**
Term:	**First**
ECTS credits:	**6**
Year:	**2nd year**
Type:	**Optional**
Language:	**Spanish**

Course Model:	**B1**	
a. Basic learning (EB):		**60 %**
b. Practical learning (EPD):		**40 %**

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2. Lecturers

Coordinator	
Name:	**Mª Begoña Herrera Rodríguez**
School:	**School of Experimental Sciences**
Department:	**Physiology, Anatomy and Cell Biology**
Area:	**Plant Physiology**
Office Hours:	**Mondays: 11.00-13.00 h; Tuesdays and Thursdays: 11.00-12.30 h; Wednesdays: 17.30-18.30 h**
Office:	**22-1-11**
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3. Topics

BASIC LEARNING

Unit 1.- Introduction.
Concepts of primary metabolism and secondary metabolism. Main biosynthetic routes: relationship between the primary metabolism and the secondary metabolism. Main primary and secondary metabolites of plant origin.

Unit 2.- Polysaccharides of industrial and food application.
Starch. Cellulose. Fibers dietetics and textiles. Gums Applications.

Unit 3.- Proteins of nutritional, pharmacological or industrial application in plants.
Reserve proteins. Protease inhibitors. Lectins Tioninas. Taumatinas

Unit 4.- Amino acids and other nitrogen compounds.

Topic 5.- Alkaloids of pharmacological, industrial or nutritional application.

Topic 6.- Lipids I.
Introduction. Specific fatty acids of plants and their derivatives. Reserve triglycerides in seeds. Vegetable oils of food and industrial interest.

Topic 7.- Lipids II.
Terpenes: classification and biosynthesis routes. Functions of the Terpenes. Applications.

Topic 8.- Phenolic compounds.
Types of phenolic compounds. Flavonoids: metabolism, functions and applications. Tannins: metabolism, functions and applications.

PRACTICAL LEARNING

Practice 1. Determination of starch in potato tubers. 1st part.

Practice 2. Determination of starch in potato tubers. 2nd part.
Practice 3. Determination of polyamines in tobacco leaves by liquid chromatography (HPLC).
Practice 4. Determination of total anthocyanins in red wine.
Practice 5. Development of the spectrum of absorption of carotenoids in carrots and tomatos.
Practice 6. Determination of total phenols in fruits.