

General information	
Academic subject	Food bioprocesses from wastes and novel sources
Degree course	INNOVATION DEVELOPMENT IN AGRIFOOD SYSTEMS (IDEAS)
ECTS credits	3
Compulsory attendance	No
Teaching language	English

Subject teacher	Name Surname	Mail address
	ERICA PONTONIO	erica.pontonio@uniba.it

ECTS credits details	
	2.5 ECTS Lectures 0.5 ECTS Laboratory classes

Class schedule	
Period	I SEMESTER
Course year	I YEAR
Type of class	Lectures, laboratory classes and working groups

Time management	
Hours	75
In-class study hours	30
Out-of-class study hours	45

Academic calendar	
Class begins	October 5 th , 2020
Class ends	January 22 nd , 2021

Syllabus	
Prerequisites/requirements	Biology, microbiology, Food technologies, chemistry, biochemistry and enzymology
Expected learning outcomes	<p>Knowledge and understanding Knowledge of the actual issues related to the food wastes and economic and sustainability needs and latest bioprocesses to enhancing wastes and innovative sources to produces novel foods.</p> <p>Applying knowledge and understanding Ability to autonomously identify and carry out the most suitable technologies aimed at the valorisation of food wastes and novel sources</p> <p>Making informed judgements and choices Ability to interpret the results of analytical controls and to adjust the parameters of bioprocesses to the achievement of defined quality standards.</p> <p>Communicating knowledge and understanding Ability to communicate the importance and role of bioprocresse and the purpose of biotechnological processes for the enhancing the food wastes and novel food ingredients in order to obtain specific quality standards.</p> <p>Capacities to continue learning Ability to update and deepen self-knowledge of food biotechnological processes through the study of scientific publications in the food wastes re-utilisation and novel</p>

	sources use for novel food production.
Contents	<ul style="list-style-type: none"> • Food industry wastes: problems and opportunity; • Development of green production strategies; • Sources, characterization and composition of food wastes and food industry wastes; • Treatment of solid food wastes: milling by-products, wasted- bread and brewers' spent grains to produce fermented foods; • Functional foods and nutraceuticals derived from industry food wastes; • Production of organic acids, biopolymers and feed proteins from food wastes; • Enhancement and pre-treatment of innovative raw materials to produce novel foods; • Environmental impacts and sustainability assessment of food loss and waste valorization.

Course program	
Reference books	<p>BOOKS:</p> <ul style="list-style-type: none"> • <i>Food Waste to Valuable Resources: Applications and Management.</i> Rajesh Banu, Gopalakrishnan Kumar, Gunasekaran M., Kavitha S. 2020 • <i>Food Industry Wastes: Assessment and Recuperation of Commodities.</i> Maria R. Kosseva, Colin Webb. 2013 1st edition <p>Scientific papers suggested during the course Student notes</p>
Notes	
Teaching methods	Lectures
Evaluation methods	Oral exam. The exam must be held in English.
Evaluation criteria	<p>Knowledge and understanding Understand the novel scientific approaches aimed at enhancing food waste and new raw materials to be used in the production of novel foods.</p> <p>Applying knowledge and understanding Students must know and know how to apply the current methodologies aimed at the enhancement and re-use of food waste and novel raw materials.</p> <p>Making informed judgements and choices Acquisition of considerable autonomy of judgment in the context of the specific themes of current biotechnological approaches aimed at enhancing food wastes and new raw</p>



	<p>materials.</p> <p>Communicating knowledge and understanding Ability to spread the knowledge acquired on the current requirements and pre-treatment methodologies of food waste and new raw materials for food production.</p> <p>Capacities to continue learning Gaining knowledge of this module is verified during lectures, practical lessons and guided tours. It is also verified through the case studies proposed during learning activities.</p>
Receiving times	Monday-Friday 08:30 – 17:30 by appointment (the timetable also includes lessons when held).