

General information	
Academic subject	<b>Unit operations of food technology</b>
Degree course	Bachelor programme: <i>Food Science and Technology (L26)</i>
Academic Year	<i>Second</i>
European Credit Transfer and Accumulation System (ECTS)	4 ECTS
Language	<i>Italian</i>
Academic calendar (starting and ending date)	<i>September 26<sup>th</sup>, 2022 – January 20<sup>th</sup>, 2023</i>
Attendance	<i>No Compulsory</i>

Professor/ Lecturer	
Name and Surname	Francesco Caponio
E-mail	<a href="mailto:francesco.caponio@uniba.it">francesco.caponio@uniba.it</a>
Telephone	080 5442235
Department and address	<i>DISSPA</i>
Virtual headquarters	<i>Microsoft Teams</i>
Tutoring (time and day)	From Monday to Friday 8.30 a.m. – 1.30 p.m. and 2.30 p.m. – 5.30 p.m. previous agreement

Syllabus	
<b>Learning Objectives</b>	The student will acquire knowledge on olive processing technology and will be able to critically discuss the complex technological and production issues of the oil sector, including the relation between olive oil quality and raw material.
<b>Course prerequisites</b>	Prerequisites: “Chemistry” and “Unit operations of food technology”.
<b>Contents</b>	Raw materials: fruits and oily seeds Lipids: synthesis, composition, oxidative and hydrolytic degradation Classification of virgin olive oils Ripening, harvest, milling, extraction of olive oil. Comparison of different processing technologies Virgin olive oil classification Chemical and sensory quality indices Refining of edible oils
<b>Books and bibliography</b>	<ul style="list-style-type: none"> <li>• Notes of the lectures distributed during the course.</li> <li>• Ricci A. <i>Oleum: Manuale dell’olio da olive</i>. Edagricole, Bologna.</li> <li>• Sciancalepore V. <i>Industrie agrarie: olearia, enologica, lattiero –casearia</i>. UTET, Torino.</li> <li>• Capella P., Fedeli E., Bonaga G., Lercker G. <i>Manuale degli oli e dei grassi</i>. Tecniche Nuove Ed., Milano.</li> <li>• Cappelli P., Vannucchi V. <i>Principi di chimica degli alimenti. Conservazione, Trasformazioni, Normativa</i>. Zanichelli, Bologna.</li> </ul> <p>Additional readings:</p> <ul style="list-style-type: none"> <li>• Preedy V.R. <i>Olives and olive oil in health and disease prevention</i>. Elsevier.</li> <li>• Aparicio R., Harwood J. <i>Handbook of olive oil: analysis and properties</i>. Springer.</li> </ul>
<b>Additional materials</b>	

Work schedule	

Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/Self-study hours
<b>Hours</b>			
100	24	14	62
<b>ECTS</b>			
4	3	1	
<b>Teaching strategy</b>	Lectures will be presented by means of Power Point presentations, videos with views of real industrial plants, didactic visit, case-studies and laboratory exercitations. Lecture notes and educational supplies will be provided by means of online platforms.		
<b>Expected learning outcomes</b>			
<b>Knowledge and understanding on:</b>	<ul style="list-style-type: none"> <li>○ Knowledge of processes and product quality.</li> </ul>		
<b>Applying knowledge and understanding on:</b>	<ul style="list-style-type: none"> <li>○ Ability to understand relations between processing technologies and vrigin olive oil quality.</li> <li>○ Ability to apply correct solutions in relation to raw material characteristics.</li> <li>○ Knowledge of processes and behaviors influencing hydrolytic and oxidative degradation of oils.</li> </ul>		
<b>Soft skills</b>	<ul style="list-style-type: none"> <li>● <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> <li>○ Ability to correctly address choices to ensure high standard quality for olive oils.</li> <li>○ Ability to evaluate the influence of processes on the chemical and sensory quality of the product.</li> </ul> </li> <li>● <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ Ability to describe processes and their effect on quality.</li> </ul> </li> <li>● <i>Capacities to continue learning</i> <ul style="list-style-type: none"> <li>○ Ability at deepen and update knowledge regarding the effect of processing on quality.</li> </ul> </li> </ul>		
The expected learning outcomes, in terms of both knowledge and skills, are provided in Annex A of the Academic Regulations of the Degree in Food Science and Technology (expressed through the European Descriptors of the qualification).			

<b>Assessment and feedback</b>	
Methods of assessment	<p>The exam consists of an oral dissertation on the topics developed during the theoretical and theoretical-practical lectures in the classroom and in the laboratory/production plants, as reported in the Academic Regulations for the Bachelor Degree in Food Science and Technology (article 9) and in the study plan (Annex A).</p> <p>Students attending at the lectures may have a middle-term preliminary exam, consisting of a written test, relative to the first part of the program, which will concur to the final evaluation and will be considered valid for a year.</p> <p>Non-Italian students may be examined in English language, according to the aforesaid procedures.</p>
Evaluation criteria	<ul style="list-style-type: none"> <li>● <i>Knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ Describing processes and their effects on product quality.</li> </ul> </li> <li>● <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ Describing chemical and sensory changes occurring during processing.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>● <i>Autonomy of judgment</i> <ul style="list-style-type: none"> <li>○ Expressing reasonable choices of processing technologies to ensure high quality standards.</li> </ul> </li> <li>● <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ Describe the relationships between the quality of olive oil and the factors that influence it.</li> </ul> </li> <li>● <i>Communication skills</i> <ul style="list-style-type: none"> <li>○ Describing processes and their effect on quality.</li> </ul> </li> <li>● <i>Capacities to continue learning</i> <ul style="list-style-type: none"> <li>○ Hypothesize solutions to increase product quality.</li> </ul> </li> </ul>
Criteria for assessment and attribution of the final mark	The evaluation of the preparation of the student occurs on the basis of established criteria, as detailed in Annex B of the Academic Regulations for the Bachelor Degree in Food Science and Technology.
<b>Additional information</b>	