

COURSE OF STUDY Bachelor degree: Food Science and Technology (L26)
ACADEMIC YEAR 2023-2024
ACADEMIC SUBJECT Packaging (3 ECTS) - I.C. Enology and Packaging (9 ECTS)

General information	
Year of the course	<i>First</i>
Academic calendar (starting and ending date)	<i>first semester (September 25th, 2023 – January 19th, 2024)</i>
Credits (CFU/ETCS):	3
SSD	<i>Food Science and Technology (AGR/15)</i>
Language	<i>Italian</i>
Mode of attendance	<i>No Compulsory</i>

Professor/ Lecturer	
Name and Surname	<i>Carmine Summo</i>
E-mail	<i>carmine.summo@uniba.it</i>
Telephone	<i>0805442272</i>
Department and address	<i>DIP. DISSPA – Università degli Studi di Bari</i>
Virtual room	<i>Microsoft Teams:</i>
Office Hours (and modalities: e.g., by appointment, on line, etc.)	<i>Monday to Friday by appointment only.</i>

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
75	16	14	45
CFU/ETCS			
3	2	1	

Learning Objectives	The student will acquire knowledge and skills on the physical and chemical properties of the packaging materials applied in food in order to select the correct materials function of the foods and the storage conditions applied.
Course prerequisites	Mandatory Prerequisites: Chemistry; Unit operations of food technology

Teaching strategie	Course topics are addressed with the aid of Power Point presentations, case study analysis and classroom exercise.
Expected learning outcomes in terms of	
Knowledge and understanding on:	<ul style="list-style-type: none"> • Knowledge about the Food Contact Materials (FCM), technological process for the production and the chemical and physical properties • Knowledge about the concept of biodegradability of the FCM, production and properties of the biopolymer applied as FCM.
Applying knowledge and understanding on:	<ul style="list-style-type: none"> • Applying knowledge about the properties of the FCM in order to select the correct materials function of the foods and the storage conditions applied.
Soft skills	<ul style="list-style-type: none"> • Making informed judgments and choices: <ul style="list-style-type: none"> ○ The students will acquire adequate skills and ability to correctly direct choices or packaging materials and technologies. • Communicating knowledge and understanding: <ul style="list-style-type: none"> ○ The students will acquire adequate skills and communication ability to

	<p>describe materials and packaging properties of FCM presented during the course</p> <ul style="list-style-type: none"> • Capacities to continue learning: <ul style="list-style-type: none"> ○ The students will acquire skills to deepen and update their knowledge related to the topics of the course also through efficient bibliographic research using the database scopus and google scholar.
Syllabus	
Content knowledge	<ul style="list-style-type: none"> ○ Definitions and function of the packaging. ○ Chemical, physical and thermal properties of the FCM. The gas permeability process. ○ The different materials for the FCM; Plastic polymers, metal, paper and glass. ○ Technological process for the production of plastic films and material for food application. ○ Biopolymers and sustainability of the FCM.
Texts and readings	<ul style="list-style-type: none"> ○ Gordon L. Robertson, Food Packaging: Principles and Practice, Third Edition. CRC Press, 2013. ○ Joongmin Shin and Susan E.M. Selke, Food Packaging. In: Food Processing: Principles and Applications, Second Edition. Ed: Stephanie Clark, Stephanie Jung, and Buddhi Lamsal. John Wiley and Sons, 2014.
Notes, additional materials	<ul style="list-style-type: none"> • Scientific papers
Repository	All teaching material will be available to students on web platforms

Assessment	
Assessment methods	<p>The exam consists of an oral dissertation on the topics developed during the theoretical and theoretical-practical lectures in the classroom and in practical activities (laboratory and educational visits).</p> <p>Students 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 one academic year (Art. 4 of the Didactic Regulations of the Bachelor Degree Course in Food Science and Technology). The result of the mid-term exam is communicated by publication in the student's electronic register and contributes to the assessment of the profit examination by means of calculation of the weighted average.</p> <p>The exam for foreign students may be conducted in English as described above.</p>
Assessment criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ The student will be able know and describe the properties of the FCM, to read and understand a technical sheet of the materials • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ Describe the possible applications of the materials of the food packaging. Able to understand the technical sheet of the materials • <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ The student will be able Express reasonable hypotheses about choice of materials for packaging of food products presented during lectures • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ The student will acquire communication skills and tools to analyse and discuss analytical data related to new process and products with interlocutors with similar and different backgrounds. • <i>Communication skills</i> <ul style="list-style-type: none"> ○ The student will be evaluated considering the use of appropriate technical language. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ The students will be also evaluated considering the capacity to deepen

	and update their knowledge within the topics of the course also through efficient bibliographic research using the database scopus and google scholar.
Final exam and grading criteria	The assessment of the student's preparation is based on predetermined criteria in accordance with the Didactic Regulations of the Bachelor Degree Course in Food Science and Technology (art. 4). The Examination Committee has a score ranging from a minimum of 18 to a maximum of 30 points for a positive assessment of the student's performance. By unanimous vote of its members, the Board may award honours in cases where the final mark is 30.
Further information	