

General Information	
Academic subject	Instrumental and Sensory Analyses of Food (I.C. Food Technologies II)
Degree course	Food Science and Technology
ECTS credits	5 CFU (3 ECTS of Lectures + 2 ECTS of laboratory or field classes)
Compulsory attendance	No
Teaching language	Italian

Subject teacher	Name Surname	Mail address	SSD
	Giuseppe Gambacorta	giuseppe.gambacorta@uniba.it	AGR/15

ECTS credits details	
Basic teaching activities	3 ECTS Lectures 2 ECTS Laboratory or field classes

Class schedule	
Period	II Semester
Course year	First
Type of class	Lectures, workshops

Time management	
Hours	125
In-class study hours	52
Out-of-class study hours	73

Academic calendar	
Class begins	March 4 th , 2019
Class ends	June 14 th , 2019

Syllabus	
Prerequisites/requirements	Knowledge of analytical chemistry
Expected learning outcomes	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Knowledge and understanding of the sensory physiology and sensory analysis methods ○ Knowledge and understanding of the instrumental analytical techniques used in chemical-physical laboratory of foods <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Ability to identify and apply with autonomy the sensory analysis methods in function of the set goals ○ Ability to identify and apply appropriate instrumental techniques for analysing the quality and genuineness of foods <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> ○ Ability to interpret the results of sensory and instrumental analysis aimed to assessment the quality and genuineness of foods <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Ability to communicate the importance of food quality from a sensory point of view ○ Ability to communicate the quality and genuineness of foods through instrumental laboratory analyses <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> ○ Ability to update and deepen the knowledge of sensory and instrumental analysis methods through the study of scientific publications in the field of food science and technology
Contents	<ul style="list-style-type: none"> • Aims and applications of sensory analysis. • Factors affecting the sensory evaluation of food. • Recruitment, selection and training of judges. • Tests discriminating quality: test of difference, pair wise

	<p>comparison, triangular, duo-trio and two out of five tests.</p> <ul style="list-style-type: none"> • Test order. The scales of measurement. • Descriptive tests: flavour profile method (FPM), descriptive analysis (QDA). • Applications of descriptive analysis: study cases. • Sensory analysis of the main food of the territory. Statistical analysis of data and graphical representations. • Instrumental techniques of sensory analysis: liquid/liquid extraction, solid phase extraction, solid phase micro extraction, static head space, dynamic head space, purge & trap (LLE, SPE, SPME, SHS, DHS, P&T). • Spectrophotometry, high performance liquid chromatography (HPLC) and high resolution gas chromatography (HRGC) used for food analysis. • Innovative instrumental analysis for sensory analysis: olfactometric techniques, electronic nose and electronic tongue. • The instrumental analysis applied to the food products for assessing the quality and genuineness. • The instrumental analysis applied to food products for the assessment of quality and genuineness. Statistical results processing and graphic representation.
Course program	
Reference books	<ul style="list-style-type: none"> • Note of the lecture distributed during the course. • Teaching material available and downloaded from social e-learning platform Edmodo during the course. • Pagliarini E. – Valutazione sensoriale: aspetti teorici, pratici e metodologici. Hoepli editore, Milano, 2002. • Cabras P., Tuberoso C.I.G. “Analisi dei prodotti alimentari” Piccin Nuova Libreria S.p.A. editore, Padova, 2014. • Stone H., Sidel J.L. Sensory Evaluation Practices, 2nd ed. Academic Press, S. Diego, CA, 1993. <p><i>Additional readings</i></p> <ul style="list-style-type: none"> • S.Porretta – Analisi sensoriale & consumer science. Chiriotti editori, Pinerolo, 2000. • Ramon Viader Guixa – Vino Corpo e Cervello: riflessione critica sull’utilizzo dei nostrisensi nella conoscenza del vino. AEB group, 2005. • M. Marconi, D. Fajner, G. Benevelli, G. Vicoli – Dentro al gusto: arte, scienza e piacere nella degustazione. Edagricole, Bologna, 2007.
Notes	
Teaching methods	<p>The course topics will be treated with the help of Power Point presentations, case studies discussion, exercises in the classroom and laboratory, educational visits to sensory and instrumental analysis laboratories.</p> <p>Lecture notes and educational supplies will be provided by means of a mailing list or online platforms (i.e.: Edmodo, Google Drive...)</p>
Evaluation 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 the laboratory/production plants, as reported in the Academic Regulations for the Master 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>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 Master Degree in Food Science and Technology.</p> <p>Non-Italian students may be examined in English language, according to the aforesaid procedures.</p>
<p>Evaluation criteria</p>	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Describe the physiology of the senses, the procedure for the creation of a sensory panel and the discriminating and descriptive sensory analysis methods ○ Describe the methods of instrumental analysis for the assessment of the quality and genuineness of foods <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Describe the most appropriate sensory analysis tests to apply to foods in accordance with the predetermined goals. ○ Describe the instrumental analytical techniques to be used for the analysis of quality, genuineness and compliance of specific food products <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> ○ Interpret the results of sensory and instrumental analysis to establish the quality, genuineness and compliance requirements of foods <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Illustrate the qualitative characteristics of foods through their sensory descriptors ○ Illustrate compliance with the requirement for quality, genuineness and the respect to normative, based to analytical parameter results <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> ○ Study and propose new chemical, physical and sensory methods for the assessment of quality, genuineness and compliance with the specific food norms
<p>Receiving times</p>	<p>Tuesday-Friday by appointment only</p>