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 2nd, 2020
Class ends	June 12th, 2020

Syllabus	
Prerequisites/requirements	Knowledge of analytical chemistry
Expected learning outcomes	*Knowledge and understanding* ○ 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 *Applying knowledge and understanding* ○ 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 *Making informed judgements and choices* ○ Ability to interpret the results of sensory and instrumental analysis aimed to assessment the quality and genuineness of foods *Communicating knowledge and understanding* ○ 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 *Capacities to continue learning* ○ 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	• 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

	comparison, triangular, duo-trio and two out of five tests. • 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, dinamic 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	• 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. *Additional readings* • 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	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. Lecture notes and educational supplies will be provided by means of a mailing list or online platforms (i.e.: Edmodo, Google Drive…)
Evaluation methods	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). 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.

	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. Non-Italian students may be examined in English language, according to the aforesaid procedures.
Evaluation criteria	*Knowledge and understanding* ○ 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 *Applying knowledge and understanding* ○ 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 *Making informed judgements and choices* ○ Interpret the results of sensory and instrumental analysis to establish the quality, genuineness and compliance requirements of foods *Communicating knowledge and understanding* ○ 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 *Capacities to continue learning* ○ Study and propose new chemical, physical and sensory methods for the assessment of quality, genuineness and compliance with the specific food norms
Receiving times	Tuesday-Friday by appointment only