

General Information	
Academic subject	Pest damages (I.C. Pests and diseases of foods)
Degree course	Bachelor programme: Food Science and Technology
ECTS credits	3 ECTS
Compulsory attendance	No
Teaching language	Italian

Subject teacher	Name Surname	Mail address	SSD
	<b>Francesco Porcelli</b>	<a href="mailto:francesco.porcelli@uniba.it">francesco.porcelli@uniba.it</a>	AGR/11

ECTS credits details	
Basic teaching activities	2 ECTS Lectures   1 ECTS Laboratory or field classes

Class schedule	
Period	II semester
Course year	Second
Type of class	Lecture- workshops

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

Academic calendar	
Class begins	March 5 <sup>th</sup> , 2018
Class ends	June 22 <sup>th</sup> , 2018

Syllabus	
Prerequisites/requirements	
Expected learning outcomes	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Discriminate and describe the biological and physical interactions between pest and food</li> </ul> <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Evaluate and estimate the value and consequence of pest damage off food quality and safety</li> <li>○ <i>Ex post</i> infestation events, pest waves reconstruction and good damage estimation</li> <li>○ Pest guild description and bionomics.</li> </ul> <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> <li>○ Skill in infestation event management, damage prevention and reduction.</li> <li>○ Food pest-control key point and critical path recognition.</li> </ul> <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Ability to disseminate the control theory and the requested actions, focusing the food quality and security.</li> </ul> <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> <li>○ Self- and continuous learning to update and upgrade professional ability in food and good pest control.</li> </ul> <p>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)</p>
Contents	The course is tailored and focused on produce and goods pest management and control, damages assessment and prevention. The course approaches the pest assessment and control to qualify the student as a competent technical consultant and expert witness.

	<p>Produce and goods insect applied ecology and ethology, pest of stored foodstuffs: plant &amp; animal matters, building &amp; packaging matters. Useful general Entomology topics in produce and goods pest control and damage assessment will be focused while discussing single pests. Ecological successions of pest and their antagonist, ecological waves, urban/artificial environment, the concept of damage. Control of pests of stored foodstuffs, background and HACCP, loss assessment and pest sampling methods, integrated pest management (IPM), legislative control, store hygiene (sanitization), physical methods of control, biological control, pesticides (chemical control), use of indigenous plant material (natural pest control). Pest species, their biology, damage and control strategies for selected species of Acarina (Eriophyidae, Tarsonemidae, Pyemotidae, Acaridae), Insecta (Thysanura, Collembola, Dermaptera, Dictyoptera, Isoptera, Psocoptera, Hemiptera, Thysanoptera, Coleoptera, Diptera, Lepidoptera, Hymenoptera) and for lesser pest species.</p>
<b>Course program</b>	
Reference books	<ul style="list-style-type: none"> <li>• Course handouts in English, as .pdf file given at class kick-off.</li> <li>• Hill D.S. 2003 - Pests of Stored Foodstuffs and Their Control. Kluwer Academic Publishers, E-ISBN: 0-306-48131-6, ISBN: 1-4020-0735-3, 493 pp.</li> <li>• Gorham, J.R. 1991 - Ecology and Management of Food- Industry Pests. FDA Technical Bulletin, 4: 595 pp.</li> <li>• Gorham J.R. (Ed.) 1987. - Insect and Mite Pests in Food; An Illustrated Key. U.S.D.A., Agriculture Handbook Number 655, 767 pp.</li> <li>• Hagstrum D.W., Phillips T.W., Cuperus G. 2012 - Stored Product Protection. Kansas State University Agricultural Experiment Station and Cooperative Extension Service, 358 pp. Kansas State University ISBN 978-0-9855003-0-6.</li> </ul>
Notes	
Teaching methods	<p>Keynote presentations, movies and videos will support lessons and practicals.</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 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>The evaluation of the preparation of the student occurs on the basis of established criteria, as detailed in Annex A of the Academic Regulations for the Bachelor Degree in Food Science and Technology.</p> <p>Non-Italian students may be examined in English language, according to the aforesaid procedures.</p>
Evaluation criteria	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Recognize damage and the corresponding pest Taxon,</li> </ul> <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Prepare a report describing the damage, the pest, and an damage estimation in term of food quality and safety also</li> </ul>

	<ul style="list-style-type: none"> <li>○ Rebuild the timing of infestation waves, estimate the time from the infestation start.</li> <li>○ Identify the species component the pest guild.</li> </ul> <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> <li>○ Manage the pest by preventing infestations.</li> <li>○ Check pest key point and critical path.</li> </ul> <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Use of smart devices and IT media to share information on pest control.</li> </ul> <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> <li>○ Choose the actual control tools and formulates.</li> </ul>
Receiving times	Monday-Friday by previous agreement by e-mail