Technology for Food Safety

Prof. Pier Sandro Cocconcelli; Prof. Tito Caffi

Principles of Food Protection

Prof. Tito Caffi

Course aims and intended learning outcomes

The protection of the “green resources” is considered one of the pillars of food safety from the EU. Thus, the primary goal of the course is to provide the students with a general understanding of the implications of certain plant-protection issues on the management of crops and agri-food products at the farm and supply-chain level, within the national and international regulatory context.

At the end of the course students are supposed to know the main classification of diseases and disorders and to be able to communicate with a proper technical language and terminology. They are supposed to use knowledge and understandings acquired during the course through problem solving abilities applied in new or unfamiliar environments within broader or multidisciplinary contexts, making proper connections between food protection practices and their reflections on food safety. A specific goal requested to the students is to improve their communication skills, in order to be able to transfer their conclusions and underpinning knowledge both to specialist and non-specialist audiences.

Course content

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<th>Topic</th>
<th>ECTS</th>
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<tr>
<td>Definition of disease, classification of diseases, damage caused by diseases, primary (direct and indirect) and secondary damage. Crop protection. Plant protection products and problems related to their use.</td>
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<td>Harmful organisms of relevance from a plant protection perspective. The international regulatory framework under the IPPC (International Plant Protection Convention). Analysis of risks arising from the introduction of harmful organisms (Pest Risk Analysis) and the attendant plant protection regulations. Role of national plant protection organisations, of the EPPO (European Plant Protection Organisation) and of the EFSA (European Food Safety Agency). Illustration of some case studies.</td>
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<td>PRACTICAL CLASSES/TUTORIALS. Food protection and food safety: working groups and role playing on IPM concepts, approaches and communication will be settled up.</td>
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Reading list

There is no course textbook; a reading list will be supplied during the course.
Teaching method
Lectures will be provided by the Instructor. Case studies will be proposed during classes as well as interactive exercises in order to check the students learning process. Working groups and role playing will be organized by the Teaching Assistant.

Assessment method and criteria
A written exam will be proposed at the end of the course and on official exam dates. The students will have 45 minutes to answer 30 questions (different types of questions: multiple choice, put in the right order, link concepts, etc.) plus one open question (minimum and maximum number of lines). After the exam the student will have the chance to go through their tests with the Instructor in order to motivate, deeply explain his/her choices in order to increase (or decrease) their final mark. Marks will be provided on a scale of 30/30 ("cum laude" for really praiseworthy students).

Notes and prerequisites
Lesson frequency is not mandatory, but strongly encouraged. Students must register via Blackboard to the course and check it regularly for further information or updates. The teaching material will be provided only via Blackboard (just before classes).

The Instructor will meet students after classes at the Department of Sustainable Crop Production in Piacenza (3rd floor, room 275), upon arrangement by email.

Principles of Food Hygiene
PROF. PIER SANDRO COCCONCELLI

Course aims and intended learning outcomes
The objectives of the course are: (i) to illustrated the European approach to food risk analysis, (ii) to provide to provide the basic and technical knowledge on food hygiene and (iii) to address safety and quality management and their impact on agro-food enterprises.

The students are expected, at the end of the course, to have acquired basic knowledge on the impact of food safety management on the enterprises of the agro-food sector, at national and global level. Moreover, and students are supposed to possess the relevant information on how to interact with major food safety and hygiene stakeholders and with technical personnel responsible for food safety and hygiene.

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<tr>
<td>The Food Safety concept. The European risk analysis approach: risk assessment and risk management. The steps of risk assessment. The risk management in the food chains: the concept of ALARA, and ALOP. The RASFF (Rapid Alert System for Food and Feed) system in</td>
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EU. The Food Safety Modernisation Act in the USA.

Biological and chemical hazards. Food born infections and intoxication. The EFSA Report on zoonoses and outbreaks. The burden of foodborne diseases in developed and developing countries.

Basic of food processing hygiene criteria: the Good Manufacturing and Hygiene Practices (GMP-GHP). The HACCP: concept and application. The international standards and the Codex Alimentarius. Examples of HACCP plans. The HARPC approach in USA.

Information to consumers, the food labelling. Health and nutritional claims made on food. GMO foods: the safety assessment and the impact on labelling.

Certification in food processing: the most important certification schemes for food safety, traceability and organic products.

PRACTICAL CLASSES/TUTORIALS. The Rapid Alert System for Food and Feed. Case studies on the topics addressed during the lectures will be addressed.

Reading list
The bibliographic material, web sites, E-books and pdf documents on food hygiene will be provided during the course and uploaded on Blackboard.

Teaching method
The course consists of five credits of lectures and one credit of tutorial computer sessions. Lectures are given using computer presentations that are made available to students. During lectures, several practical examples of model estimations are provided. Computer sessions imply the use of a specific econometric software.

Assessment method and criteria
The assessment is based on cases study discussion and on an oral examination. The active participation at the case studies and the quality of the final report is assessed. Oral examination evaluates the knowledge of food microbiology and critical reasoning. The final result also takes into account the report of the practical activities, documenting the work done.

Notes and prerequisites
Professor Pier Sandro Cocconcelli is available to meet with students after class at C.R.B or mail by at pier.coconcelli@unicatt.it