UNIVERSITÀ DI PARMA

INTERNATIONAL INTERUNIVERSITY MASTER’S DEGREE

FOOD SAFETY AND FOOD RISK MANAGEMENT

Parma, April 16th, 2024

Prof. Maria Paciulli
Advisor for Incoming Students
International Interuniversity
Master’s Degree in
Food Safety and Food Risk Management

Master’s Degree Course in English, with the
collaboration of the agro-food system of Emilia
Romagna Region and with the international network
of Emilia Romagna Universities
Why Food Safety in the Emilia-Romagna Region?

Emilia-Romagna Region

- EFSA
- Cultural Heritage
- Food Valley
- Universities and Research Centres
- PDO Products
- Food Industries

European Food Safety Authority

Università di Parma

Master’s Degree in Food Safety and Food Risk Management
The context

Do we still need to speak about Food Safety in 2024?

«SAFER FOOD SAVES LIVES»

✓ Increasing attention by consumers, retailers, producers and control bodies

✓ Increasing food diseases in all countries. > 600 million people fall ill and 420,000 die every year (food contaminated with bacteria, viruses, parasites, toxins and chemicals), especially fragile people.

✓ Costs for national health systems (6.9 billion$/y from foodborne diseases, USDA's Economic Research Service, 2004)

✓ Loss of consumer’s trust, trade and slices of market
Food Scares

- Mad cow disease (BSE, 2001)
- Dioxin in chicken (1999)
- Gutter oil (2010)
- Melamine in milk (2008)
- Contaminated bean sprouts (2011)
- Mozzarella and land of fires (2013)
Issues

- By 2050, two out of three people will live in megacities: challenges with food distribution, sanitation and hygiene, food waste and water scarcity.

- Climate change is associated with altered geographic occurrence and prevalence of food safety hazards (i.e., pathogens, mycotoxins, marine biotoxins and heavy metals).

- Improving hygiene practices to reduce the emergence and spread of antimicrobial resistance

- Food Fraud: Increasing phenomenon which cause the presence on the market of food adulterated with dangerous substances.
The Master’s Degree in Food Safety and Food Risk Management

✓ Highly integrated approach to the field of food safety.
✓ Focus on the technical aspects, as well as on the legal aspects of food safety and integration in Food Safety Management.
✓ Deeper understanding of microbiology, toxicology, risk analysis and food safety management
✓ Focus also on food legislation, supply chain protection and economic impact of food safety.
Contents: 1 study course with 3 curricula

Food Safety and Food Risk Management

1st year (common, Parma)

2nd year

Risk Mitigation (Piacenza-Parma)

Risk Management (Bologna-Ferrara)

Agri-Food Safety (Modena-Reggio)
Food Safety and Food Risk Management: 1st year common (UNIPR)

Risk characterization and exposure assessment in food
Food toxicology (Mod. I)
Exposure assessment and risk/benefit evaluation (Mod. II)

Food Technology and Microbiology
Food Technology (Mod. I)
Food Microbiology (Mod. II)

Hazard Identification in Primary Production
Plant Health (Mod. I)
Animal Welfare (Mod. II)

Biological Hazards in Food
Xenobiotics in Food

Biostatistics
Food Law and International Policies

Ethics and anthropology of food
Curriculum Risk mitigation (2nd year, UNIPC and UNIPR)

Mitigation of risk in food production

Mitigation of process-related toxicants

Emerging risk

Food allergens

Students’ free choices  Practical training  Final dissertation

MASTER’S DEGREE IN FOOD SAFETY AND FOOD RISK MANAGEMENT
Curriculum Agri-Food Safety (2nd year, UNIMORE)

- Post-harvest diseases and their management
- Animal pests in stored agri-food products and their management
- Micotoxigenic fungi in agri-food and pesticide contamination: analysis and risk management
- Biotechnology and agronomy for safety and identity preservation of agrifood products
  - Biotechnology and safety aspects of vegetable-based foods (Mod. I)
  - Good agricultural practices and identity preservation (Mod. II)

Students’ free choices  Practical training  Final dissertation

MASTER’S DEGREE IN FOOD SAFETY AND FOOD RISK MANAGEMENT
Curriculum Risk Management (2nd year, UNIBO and UNIFE)

Advanced food processing and packaging

Advanced and predictive food microbiology

Farm biosecurity and foodborne risk
Foodborne risk traceability (Mod. I)
Farm biosecurity and zoonotic risk prevention (Mod. II)

Risk assessment of food products to human health
Evaluation of adverse health effects from human exposure to foodborne hazards (Mod. I)
Innovative approach for risk assessment in microbiome food value chain (Mod. II)

Students’ free choices  Practical training  Final dissertation
Training and final dissertation on food safety topics

Within and in collaboration with:

✓ University
✓ Industry
✓ Governmental Institutions
✓ EFSA
Career opportunities

✓ Food Industry (60 – 70%)
  Food safety manager
  Quality and safety manager
  Regulatory affairs
  R&D

✓ Research

✓ Wholesale and retails
  Regulatory affairs

✓ Government
  Regulatory, legal
  Food inspection services
  EU

✓ Other
  Consultancy
  Communication
Some data...

Number of students

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<th>Academic Year</th>
<th>Total</th>
<th>International</th>
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<td>3</td>
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<tr>
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<tr>
<td>A.Y. 2023/2024</td>
<td>102</td>
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</tbody>
</table>
Some data...

Employability year 2022: 73.3%

Graduates employed within one year: 76.9%
The Master’s Degree in Food Safety and Food Risk Management

✓ Designed for science graduates in the area of: Food and Agricultural Sciences, Food Technology as well as Veterinary Science and early stage professionals.

- FREE ACCESS COURSE

- COURSE IN ENGLISH

- ADMISSION REQUIREMENTS:
  - ENGLISH LANGUAGE B2
  - CURRICULAR REQUISITES
The Master’s Degree in Food Safety and Food Risk Management

- CURRICULAR REQUISITES: adequate basic knowledge in food technology, food microbiology, food chemistry, primary production, human nutrition

- Automatically satisfied by the possession of a three-year Italian university Bachelor Degree classes DM 270/04: L-25; L-26; L-38 or DM 509/99: 20, 40.

- Perspective students in possession of a different Bachelor Degree can be enrolled, if they have acquired at least 60 ECTS relevant for the MSc course.

- Final Bachelor Degree mark of not less than 88/110 or equivalent

- Admission Committee verification / Personal Interviews
The Master’s Degree in Food Safety and Food Risk Management

ADMISSION PROCEDURES - EU NATIONALS

Two main steps:

- **Pre-evaluation.** Submit documentation related to your previous education and any language certifications

  Deadline: **October 1st, 2024.**

- **Enrolment.** Once pre-enrolment on Universitaly is successfully confirmed, you must register on the University of Parma Student Registry and formalize online enrolment.
The Master’s Degree in Food Safety and Food Risk Management

ADMISSION PROCEDURES – NON-EU NATIONALS

Three main steps:

- **Pre-evaluation.** Submit documentation related to your previous education and language certification using the on-line form.

Deadlines:

- From **February 27th** to **April 30th, 2024** (first call)
- From **May 16th** to **June 30th, 2024** (second call)

- **Pre-enrolment** on the Universitaly portal. Apply for an entry visa for Italy and receive final validation of your qualifications.

- **Enrolment.** Once pre-enrolment on Universitaly is successfully confirmed, register on the University of Parma Student Registry. Remember that **having a valid VISA is mandatory** to proceed with enrolment.
The Master’s Degree in Food Safety and Food Risk Management

Students who have successfully completed the pre-evalutation, but will not graduate and/or will not have the B2 level English certificate by **October 18th 2024**, can make the online enrolment application from **July 16th 2024** to **October 18th 2024**.

Bachelor Degree Graduation and B2 English level certification must be acquired **by March 31st, 2025**.
If you are looking for a Second Cycle Degree Course at the forefront of the modern food sciences, and you want to acquire the ability to face the challenges posed by the modern food systems and learn deep skills in managing the safety of what we eat, we propose to you to become a Food Safety expert. It's possible through a regional course, fully taught in English, offered by a network formed by Universities of Parma, Bologna, Cattolica of Piacenza, Modena and Reggio Emilia, Ferrara. Emilia-Romagna region and, in particular, the Parma District represent an integrated ecosystem of food industries,
Contacts

**President of the course:** Prof. Tullia Tedeschi
@ tullia.tedeschi@unipr.it

**Advisor for incoming students:** Prof. Maria Paciulli
@ maria.paciulli@unipr.it

**Advisor for Erasmus and international programs:** Dr. Francesco Martelli
@ francesco.martelli@unipr.it

**Quality Assurance delegate:** Prof. Chiara Dall’Asta
@ chiara.dallasta@unipr.it

**Student’s tutor:** Maria Giulia Bonomini
@ mariagiulia.bonomini@unipr.it
Testimonials from former students

- Valeria Santivetti
- Maria Giulia Bonomini
Testimonials from former students

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ABOUT ME:

FROM ROME

BACHELOR DEGREE IN FOOD SCIENCE

THESIS: "FOOD FRAUDS AND AGRO-PIRACY: LEGAL FRAMEWORK, STATE OF THE ART, AND REFORM PROSPECTS"
MASTER DEGREE:

FOOD SAFETY AND
FOOD RISK MANAGEMENT

CURRICULUM
RISK MITIGATION:

Mitigation of risk in food production
Emerging risks
Mitigation of process-related toxicants
Food Allergens
Agri-food Authenticity and Fraud
Geochemical and Isotopic Fingerprint as Tools for Food Traceability and Food Safety
INTERNSHIP

THESIS:
SPECTROSCOPIC TECHNIQUES FOR THE DETECTION OF FOOD FRAUDS:
USE OF NEAR INFRARED SPECTROSCOPY AND CHEMOMETRICS IN RICE AND OREGANO CASE STUDY
WHAT NOW?

RESEARCH INTERN - ANALYTICAL
ADVANCED LAB
Research on rapid methods for mycotoxin detection and endocrine disruptors

FOOD SAFETY SPECIALIST - GLOBAL
Q&FS GOVERNANCE
(Food Safety Risk Assessment, Food Fraud Risk Assessment, Food Defence, HACCP)
The most important lesson I took home is to say yes to opportunities. Because in the end, we will only regret the choice we did not make.

Thank you for your attention
Testimonials from former students

- Valeria Santivetti

- Maria Giulia Bonomini
Maria Giulia Bonomini, PhD candidate

Bachelor
Agricultural and forestry sciences
2016 - 2019
Final dissertation in Food Technology
“Evaluation of the oxidative stability of a cold-pressed hemp seed oil”

Master
Food safety and food risk management
2019 - 2021
Final dissertation in Food Allergens
“Characterization and allergenicity assessment of protein hydrolysates obtained from legume by-products”

Research fellowship
University of Parma
Friesland Campina
2021 - 2022
Nutritional and safety assessment of protein formulations for infancy

PhD
Food science – Chemistry division
2022 - present
Insects as a sustainable alternative to traditional high-protein feeds
Maria Giulia Bonomini, PhD candidate

Why this course?

Food safety and food risk management
2019 - 2021

International dimension

“Different” is a quality
Maria Giulia Bonomini, PhD candidate

Why this course?

Food safety and food risk management
2019 - 2021

Risk mitigation

International dimension

“Different” is a quality

UNIVERSITÀ DI PARMA
Maria Giulia Bonomini, PhD candidate

PhD Food Science

Insects as sustainable protein source in animal feed

Risk mitigation

Master

Food safety and food risk management
2019 - 2021

Antibacterial and prebiotic activity
Determination of the antibacterial and prebiotic activity of insects and of fractions derived therefrom

In vitro protein digestibility
Characterization and protein digestibility of insects and their fractions: shotgun proteomics (HR-MS), analysis of peptides (UHPLC/IM-QTOF-MS)

Method development
Development of a method for the simultaneous determination of protein digestibility and antibacterial activity in vitro

Protein quality of final products
Characterization of eggs derived from chicken fed with insects: focus on protein quality and amino acid pattern (UPLC-ESI/MS, SDS-PAGE)
Maria Giulia Bonomini, PhD candidate

Some suggestions from a former student...

1. **Don’t be scared of English**
   Studying in another language might seem intimidating for non-native speakers: don’t worry, you will get used to it in a heartbeat!

2. **Professors are there to help**
   All professors want the best for you. Need to find an internship that suits you? Would love to spend time abroad but don’t know how? Professors will provide guidance and insights.

3. **Stay curious!**
   If you want to take a students’ choice course from another curriculum, participate in seminars, summer schools... There will always be room for learning more.

mariagiulia.bonomini@unipr.it
Questions?
SAFE FOOD NOW FOR A HEALTHY TOMORROW

Food safety is everyone’s business

THANK YOU!

www.unipr.it