



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



UNIVERSITÀ
DI PARMA



UNIMORE
UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA



UNIVERSITÀ
CATTOLICA
del Sacro Cuore



UNIVERSITÀ
DEGLI STUDI
DI FERRARA
- EX LABORE FRUCTUS -

International Interuniversity Master's Degree in Food Safety and Food Risk Management

Curriculum: Risk Management (Bologna-Ferrara)

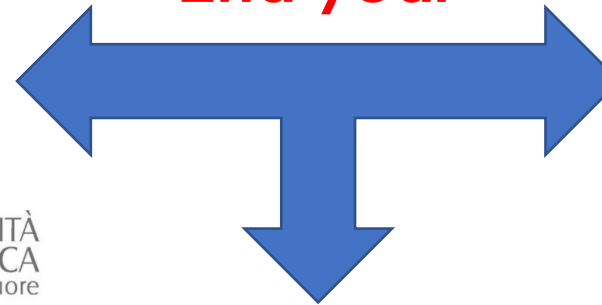
FOOD SAFETY AND FOOD RISK MANAGEMENT

1° YEAR (common in Parma)



UNIVERSITÀ
DI PARMA

2nd year



Risk Mitigation
(Piacenza-Parma)



UNIVERSITÀ
CATTOLICA
del Sacro Cuore

Agri-Food Safety
(Modena-Reggio)



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Risk Management
(Bologna-Ferrara)



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The University of Bologna



9 centuries of history from as far back as 1088

In the subject **Agriculture & Forestry**,
UNIBO is classified 1st in Italy and 40th in the world



The Department of Agricultural and Food Sciences



Easy to reach (20 min. by bus from the railway station and the city centre, 3 min. by car from tangenziale exit n. 9)

Free parking

Free wifi connection

Bar

B-free and relax area

The Curriculum

Mandatory courses (24 ECTS)

Advanced and predictive food microbiology

6 ECTS

Advanced food processing and packaging

6 ECTS

Farm biosecurity and foodborne risk (integrated course)

6 ECTS

Risk assessment of food products to human health
(integrated course)

6 ECTS

Students' free choices

6 ECTS

Practical training

17 ECTS

Final dissertation

4 ECTS

The Curriculum

Student' free choices (24 ECTS)

One Health in food safety (integrated course)

Risk analysis in the food chain and animal welfare (integrated course)

Food Economics and policy

Geochemical and isotopic fingerprint as tools for food traceability and food safety

<https://cdlm-fsafrm.unipr.it/studying/subjects>

<https://en.unipr.it/ugov/degree/5547>

The Curriculum

Laboratory activities

Laboratory activities in “real” laboratories where researchers are performing their activities every day and where you will be able to use expensive and high throughput instruments

Additional seminars

- New Food Safety Metrics (ALOP, FSO, PO, PC)
- Decision support tools to manage the food risk at the industry level
- Emerging non-thermal and packaging technologies applied in food industries

Additional technical visit

Visit at food industries and discussion on risk management

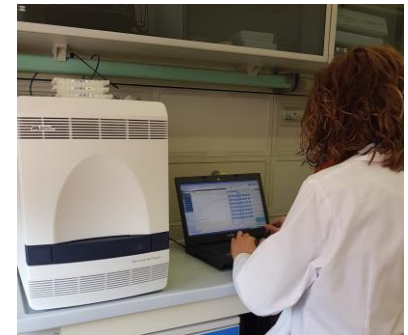
Exams

Oral and written examination

The Curriculum

Practical Training (17 ECTS)

- ✓ Amadori Group
 - ✓ Martini Group
 - ✓ Orogel, Macè
 - ✓ EmmeFood
 - ✓ Granarolo Group
 - ✓ Centrale del latte
 - ✓ University laboratories (food safety and food technology)
at UNIBO
 - ✓ Italian public veterinary institutes (IZSLER - Bologna)
 - ✓ Erasmus programme
- Meat of animal origin
- Food of plant origin
- Ready to eat food products
- Milk and dairy products



The Curriculum

Practical Training (17 ECTS) – Erasmus Programme

Active collaborations with European Research Institutions

| Institution | Topic |
|---|---|
| Danmarks Tekniske Universitet | Genomics and metagenomics applied to food and the environment |
| Universidad de Cordoba | Predictive Microbiology |
| National Veterinary Institute | Growth and survival of <i>Listeria monocytogenes</i> |
| Institut Pasteur | Genomics and bioinformatic pipelines |
| TEAGASC | Beef cattles and related food safety issues |
| Lund University | Emerging processing technologies for food treatments |
| Institute for Plasma Science and Technology | Study of plasma treatments on food products |
| Frie Universitet Berlin | Antimicrobial resistance |

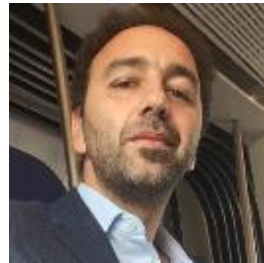
The People



Prof. Gerardo Manfreda



Prof. Giulia Tabanelli



Prof. Pietro Rocculi



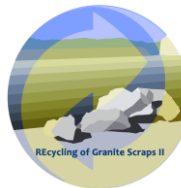
Prof. Caterina Lupini



Prof. Marco Candela



Prof. Elena Marrocchino



Prof. Meri Raggi



The People



Prof. Andrea Barbarossa



Prof. Mario Mazzocchi



Prof. Monica Caffara



Prof. Fabio Vivarelli



Prof. Barbara Padalino



Prof. Frédérique Pasquali



Learning outcomes

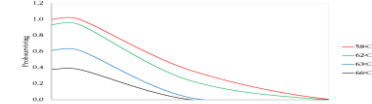
The program will enable students to manage food risks through different approaches:

✓ Predict the risk

CASE STUDIES

Practical applications of predictive microbiology for early warning to apply by regulatory agency and food industry

Growth of *L. monocytogenes* in smoked salmon

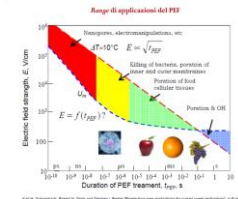


Probability of surviving of *S. enteritidis* vs treatment time (min)

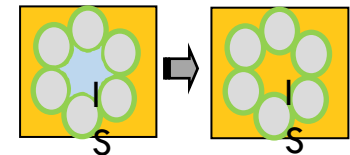
✓ Manage the growth and survival of biological hazards applying innovative technologies in food industry

Theoretical and practical knowledge

Emerging food processing and packaging technologies able to positively impact on food risk management



Pulsed Electric Fields (PEF)



Vacuum Impregnation with Competitor bacteria

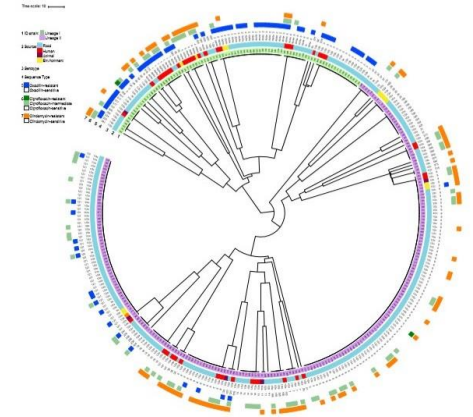
Learning outcomes

The program will enable students to manage food risks through different approaches:

- ✓ **Trace the hazard** (both at farm and food processing plant)

Case studies and visit on farm

Manage the microbial food risk by tracing the hazard from farm to fork
Manage the risk factors by biosecurity measures applied in farms

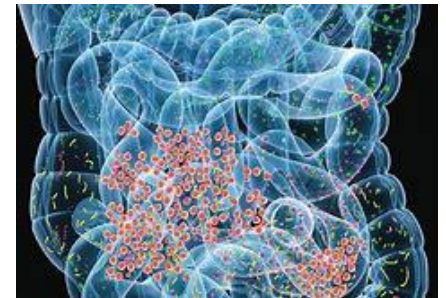


Genomic tracing of Listeria monocytogenes

- ✓ **Manage the risk by selection of healthy microbiomes**

Case studies

Risk management of food by selection of healthy microbiomes using metagenomic analysis
Risk management and safety standards for food ingredients and contaminants: case studies of xenobiotics in food



5 REASONS TO ENROLL

- 1) Acquire **skills in risk assessment** and **risk reduction strategies**
- 2) Acquire knowledges strongly wanted by **EFSA** and **food companies**
- 3) **Interact with passionate teachers** willing to share with you their recent discoveries in past and on-going European research projects
- 4) **Exploit existing research networks** of people to perform your **practical training abroad**
- 5) **Access to high throughput and new generation instruments** in laboratories in which researchers perform experiments every day



Curriculum Risk Management



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