| General Information | Studies in<br>**NUTRITION SCIENCE FOR HUMAN HEALTH** |
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| Title of the subject | **Contaminants of agro-alimentary systems** |
| Degree Course (class) | **Nutrition Science for Human Health** |
| ECTS credits | 3 |
| Compulsory attendance | No |
| Language | Italian |

| Subject Teacher | |
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| Name and Surname | **Valeria D'Orazio** |
| email address | valeria.dorazio@uniba.it |
| Place and time of reception | Campus in Via E. Orabona, 4 – DiSSPA Agricultural Plexus; Chemistry and Biochemistry Section, floor 1; room 6<br>From Monday to Friday by appointment |

| ECTS credits details | Discipline sector (SSD) | Area |
|---|---|---|
| | Agricultural chemistry (AGR/13) | Affine |

| Study plan schedule | Year of study plan | Semester |
|---|---|---|
| | first | second |

| Time management | Lessons | Laboratory | Exercises | Total |
|---|---|---|---|---|
| CFU | 2 | | 1 | 3 |
| Total hours | 16 | | 12 | 28 |
| In-class study hours | | | | |
| Out-of-class study hours | 34 | | 13 | 47 |

| Syllabus | |
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| Prerequisites / Requirements | Basic knowledge of general and organic Chemistry, Biochemistry, Human Anatomy and Physiology. |

| **Expected learning outcomes (according to Dublin descriptors)** | |
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| *Knowledge and understanding* | - Knowledge of the chemical and ecological aspects of the soil-water-plant-atmosphere system, with particular attention to the interactions that develop there, to the processes of accumulation, mobilization and absorption of contaminating chemical species, of natural and anthropic derivation, useful or harmful, in optimal and / or stressful condition. |
| *Applying knowledge* | - The acquired knowledge will allow the student to evaluate the chemistry of contaminants in the agro-food chain, in all stages of production, "from field to table". |
| *Making informed judgments and choices* | - Ability to process the information acquired in order to evaluate how, to date, the concept of food quality is identified with safety for human health, through an increasingly correct and accurate study of the agro-food chain. |
| *Communicating knowledge* | - Ability to describe the general characteristics, the contamination paths of food and the methods of control of the main contaminants carried by food. |

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| *Capacities to continue learning* | - The activities described make it possible to acquire the knowledge and methodological tools necessary to be able to independently provide an adequate update in the future. |
| **Study Program** | |
| Content | - Food safety and human health<br>- Heavy metals<br>- Nitrates and Nitrites<br>- Phytosanitary Products (PF)<br>- Endocrine disruptors<br>- Persistent organic pollutants (POPs)<br>- Polycyclic aromatic hydrocarbons (PAHs) and Polychlorinated biphenyls (PCBs)<br>- Dioxins (PCDD) and dibenzofurans (PCDF)<br>- Food of animal origin (AOA)<br>- Mycotoxins<br>- Acrylamide and Furano. |
| Bibliography and textbooks | - Notes from lectures<br>- Additional readings for further information: https://www.efsa.europa.eu/en/topics/topic/chemical-contaminants |
| Notes to textbooks | https://www.efsa.europa.eu/en/topics/topic/chemical-contaminants |
| Teaching methods | - Lectures + practices |
| Assessment methods | Written exam |
| Evaluation criteria | - Knowledge and understanding<br>Ability to present in a clear way and with adequate language the knowledge regarding the prevention and monitoring of those contaminants, both of environmental and anthropogenic origin, which are increasingly found in raw materials and finished food products used by the consumer.<br>- Applying knowledge and understanding<br>Ability to apply the knowledge acquired to assess the influence of food on well-being and disease prevention, as well as safety levels, acceptable daily doses and the assessable risk in the intake of substances contained or conveyed by the diet.<br>- Autonomy of judgment<br>Ability to apply the acquired knowledge to independently evaluate the safety levels, the acceptable daily doses and the risk in the intake of substances contained or conveyed by the diet.<br>- Communicating knowledge and understanding<br>Ability to identify the key elements of the topics covered and to use the information learned by making appropriate correlations for understanding the questions posed and for managing the answers<br>- Communication skills<br>Ability to compare their knowledge with colleagues in the field of food contamination.<br>- Capacities to continue learning<br>Ability to update and finalize their knowledge to solve the risks of contamination in food. |
| Further information | |