

# Join Junia

as a visiting professor in



**HEALTH AND  
ENVIRONMENT**



**SMART SYSTEMS  
AND ENERGIES**



**BUSINESS AND  
MANAGEMENT**



**AGRICULTURE  
AND LANDSCAPE**



**ELECTRONICS,  
PHYSICS AND  
ACOUSTICS**



**BUILDING  
AND URBAN  
ENVIRONMENT**



**COMPUTER  
SCIENCE AND  
MATHEMATICS**



**FOOD  
SCIENCES**



**ENGINEERING**



Blended learning  
and online teaching  
encouraged



Language of Instruction:  
English or French



Mobility periods are eligible  
for ERASMUS+ funding



Meals and lodging  
provided



Interested people should get in contact  
with [international.cooperation@junia.com](mailto:international.cooperation@junia.com)

*If you have questions concerning a course, the international  
office can put you in contact with the relevant academic staff.*








[JUNIA.COM](https://www.junia.com)


# incoming opportunities

year 2024.2025


Detailed description of the courses (content, objectives...) available upon request

|  Number of teaching hours |  Ideal Period |  Level |  Language |  Blended/Virtual mobility |
|--|--|---|--|--|
|--|--|---|--|--|


## SMART SYSTEMS AND ENERGIES

|  |  |           |                     |        |         |                    |
|---|--|-----------|---------------------|--------|---------|--------------------|
|   | Power systems analysis using PowerFactory software | 12 to 16h | Between Oct - Nov   | Master | English | No                 |
|   | Energy Management System                           | 12 to 15h | Between Sept-Dece   | Master | English | Open to discussion |
|   | Electric Power Distribution                        | 12h       | Between April - May | Master | English | Open to discussion |
|   | Mechanical Design                                  | 12 to 15h | Between Feb - March | BSc    | English | Open to discussion |
|   | Design and Mechanic                                | 12 to 15h | Between Feb - March | BSc    | English | Open to discussion |

## HEALTH AND ENVIRONMENT

|  |  |           |                    |        |         |                    |
|---|--|-----------|--------------------|--------|---------|--------------------|
|   | Industrial water management, waste water treatment, water re-use...                                | 10 to 30h | Between Feb - May  | Master | English | Open to discussion |
|   | Alternative use of polluted sites / sustainable management of polluted areas / lanscape management | 20 to 30h | Between Sept-Dec   | Master | English | Open to discussion |
|   | Solid waste management and circular economy  | 20 to 30h | Between Feb - May  | Master | English | Open to discussion |
|   | The role of biomass in the bioeconomy: from bioenergy to green chemistry                           | 8 to 12h  | Januray            | Master | English | Open to discussion |
|   | Ecological restoration   | 20 to 30h | Between Sept - Dec | Master | English | Open to discussion |
|   | Applied techniques of pollution remediation  | 10 to 15h | Between Sept - Dec | Master | English | Open to discussion |
|   | Soil ecology   | 8 to 10h  | Between Feb - Apr  | Master | English | Open to discussion |
|   | Polluted sediment and Sludge Management, Treatment and valorization                                | 5 to 8h   | Between Mar - Apr  | Master | English | Open to discussion |
|   | Pollutants in the environment (soil/water/air) - sources, types, characteristics, fate...          | 6 to 8h   | Between Sept - Oct | Master | English | Open to discussion |
|   | Toxicology-Ecototoxicology   | 16 to 20h | Between Sept - Dec | Master | English | Open to discussion |






## BUSINESS AND MANAGEMENT

|  |                                     |           |   |        |                |                    |
|---|-------------------------------------|-----------|---|--------|----------------|--------------------|
|   | Project Management                  | 32h       | Sept - Dec                                  | Master | French/English | Open to discussion |
|   | Communication and crisis management | 12 to 16h | Sept - Dec                                  | Master | French/English | Open to discussion |
|   | Digital communication               | 12 to 16h | Sept - Dec                                  | Master | French/English | Open to discussion |
|   | BtoB marketing                      | 4 to 12h  | sept - Dec or Feb - March                   | Master | French/English | Open to discussion |
|   | Consumer behaviour                  | 12 to 16h | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master | French/English | Open to discussion |
|   | Brand strategy                      | 8 to 16h  | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master | French/English | Open to discussion |
|   | Communication policy                | 8 to 16h  | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master | French/English | Open to discussion |
|   | Business intelligence               | 8 to 12h  | Sept - Dec                                  | Master | French/English | Open to discussion |
|   | Cross-cultural management           | 16 to 20h | Sept - Dec                                  | Master | French/English | Open to discussion |
|   | Market Research                     | 4 to 16h  | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master | French/English | Open to discussion |


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|---|---|--|---|---|

## BUSINESS AND MANAGEMENT

|   |  |   |   |         |                    |                    |
|---|--|---|---|---------|--------------------|--------------------|
|  | Marketing strategy -Strategic analysis   | 8 to 12h                                    | Oct - Dec                                   | Master  | French/English     | Open to discussion |
|   | Business model and value proposition canvas  | 8 to 12h                                    | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master  | French/English     | Open to discussion |
|   | Business development   | 8 to 12h                                    | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master  | French/English     | Open to discussion |
|   | Purchase   | 12 to 16h                                   | Jan - Feb                                   | Master  | English            | Open to discussion |
|   | Sales enablement   | 8 to 12h                                    | Sept - Dec                                  | Master  | French/English     | Open to discussion |
|   | Sales negotiation  | 12 to 24h                                   | Sept - Jan                                  | Master  | French/English     | Open to discussion |
|   | Digital business   | 8 to 16h                                    | Feb - March                                 | Master  | French/English     | Open to discussion |
|   | Supply chain management  | 20h   | Sept - Jan                                  | Master  | French/English     | Open to discussion |
|   | Cost accounting and management control   | 8 to 16h                                    | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master  | English/French     | Open to discussion |
|   | Corporate Governance and event studies   | 8 to 12h                                    | 2 <sup>nd</sup> semester                    | Master  | French/English     | Open to discussion |
|   | Business Plan  | 4 to 8h                                     | 2 <sup>nd</sup> semester                    | Master  | English            | Open to discussion |
|   | Idea generation (start-up)   | 4 to 8h                                     | 2 <sup>nd</sup> semester                    | Master  | English            | Open to discussion |
|   | Financial Analysis (analysis of consolidated financial statements and IFRS / Cost of capital and Governance) | 8 to 12h                                    | Feb - April                                 | Master  | French/English     | Possible 100%      |
|   | Human resources management   | 8 to 16h                                    | Sept - Jan                                  | Master  | English            | Open to discussion |
|   | New product development and innovation   | 8 to 16h                                    | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master  | English            | Open to discussion |
|   | Entrepreneurship / Social Entrepreneurship   | 8 to 16h                                    | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master  | English            | Open to discussion |
|   | Customer relationship management   | 8 to 16h                                    | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master  | English            | Open to discussion |
| Business analytics / Marketing analytics  | 8 to 16h   | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master                                      | English | Open to discussion |                    |
| Agricultural economics  | 8 to 16h   | 1 <sup>st</sup> or 2 <sup>nd</sup> semester | Master                                      | English | Open to discussion |                    |






## FOOD SCIENCES

|   |   |          |  |        |                |    |
|---|---|----------|--|--------|----------------|----|
|  | Nutrition (functional foods, impact of processes on the nutritional quality...)   | 4 to 8h  | Feb - March                                    | Master | English        | No |
|   | Nutrition (functional foods, impact of processes on the nutritional quality...)   | 4 to 8h  | January  | Master | French         | No |
|   | Six Sigma - Process Capability and Process Performance - Statistical Process Control  | 8h       | Between Nov - May<br><i>(to be discussed)</i>  | Master | French/English | No |
|   | Packaging (roles, types of packaging materials for food, considerations for use of different packaging materials, environmental issues)             | 8 to 12h | Between Nov - May<br><i>(to be discussed)</i>  | Master | French/English | No |
|   | Industry 4.0 (the digital transformation of the food industry, how are companies doing?, benefits of Industry 4.0, implementation and technologies) | 8h       | Between Jan - June<br><i>(to be discussed)</i> | Master | French/English | No |


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|--|--|---|--|--|

## FOOD SCIENCES

|  | CSR concepts  | 14 to 18h | Sept - Dec  | Master | English        | No |
|---|---|-----------|-------------|--------|----------------|----|
|   | FSMS focus on IFS, BRC and/or FSSC22000                                       | 6 to 12h  | Sept - Dec  | Master | English        | No |
|   | (New) Analytical techniques in food sciences (or food industry)               | 4 to 8h   | March - May | Master | English        | No |
|   | Nouvelles techniques d'analyses en science des aliments/industrie alimentaire | 4 to 8h   | Oct - Nov   | Master | Français       |    |
|   | Business Intelligence : Introduction and practical cases with Power BI        | 8 to 12h  | Oct - Nov   | Master | French/English | No |
|   | Business Intelligence : Data Visualization                                    | 4 to 8h   | Oct - Nov   | Master | French/English | No |
|   | Supply Chain : Introduction of supply chain in food industry                  | 4 to 8h   | January     | Master | French/English | No |
|   | Supply Chain and Innovation   | 4 to 8h   | January     | Master | French/English | No |
|   | Lean Management and tools : introduction and practical cases                  | 4 to 12h  | January     | Master | French/English | No |
|   | Cleaning and disinfection: applications in food processing                    | 8 to 12h  | Oct - Nov   | Master | French/English | No |

## AGRICULTURE AND LANDSCAPE

|  | Agriculture and Climate Change : adaptation and/or mitigation strategies   | 4 to 8h   | Jan - Feb   | Master | English        | Open to discussion      |
|---|--|-----------|-------------|--------|----------------|-------------------------|
|   | Biocontrol for Sustainable Crop Protection (Beneficial microorganisms used in plant protection ; Plant protection using resistance inducers activating plant immunity against pathogens) | 8h        | January     | Master | English        | Open to discussion      |
|   | Animal production systems: ovine (sheep) and goat production systems   | 8h        | March - May | Master | English        | Open to discussion      |
|   | Animal production systems: bovine (meat) production systems  | 8h        | March - May | Master | English        | Open to discussion      |
|   | Feed evaluation systems, roughage production (systems)   | 8h        | March - May | Master | English        | Open to discussion      |
|   | Quality Labels and agricultural production   | 8h        | Oct - Nov   | Master | English        | Open to discussion      |
|   | Robotics and artificial intelligence in agriculture (crops and livestock): introduction, roles, pros and cons, concrete examples   | 8 to 12h  | Oct - Nov   | Master | English        | Ideally in face-to-face |
|   | Livestock systems in your country  | 4 to 8h   | March - May | master | english        | Open to discussion      |
|   | Urban farming  | 8h        | Oct - Nov   | Master | French/English | Open to discussion      |
|   | Animal health (infectious diseases, locomotor disorders, parasitism, mastitis management)  | 4 to 12h  | Oct - Nov   | Master | French/English | Open to discussion      |
|   | Agroecology (history, fundamentals, scientific approach and practices)   | 8 or more | September   | Master | English        | Ideally in face-to-face |
|   | Water and irrigation management for agricultural purposes in the context of climate change, conflicts of use   | 8 or more | Oct - Nov   | Master | English        | Ideally in face-to-face |
|   | Farm sustainability assessment (methodology/tool and case studies)   | 8 or more | Dec - Jan   | Master | English        | Ideally in face-to-face |
|   | Marketing in agriculture   | 8h        | Sept - Oct  | Master | French/English | Open to discussion      |
|   | Introduction for urban agriculture and its application in the North of France  | 6h        | Sept - Dec  | Master | English        | Open to discussion      |

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Number of  
teaching hours



Ideal  
Period



Level



Language



Blended/Virtual  
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## BUILDING AND URBAN ENVIRONMENT

|  |  |          |             |        |                |                    |
|--|--|----------|-------------|--------|----------------|--------------------|
|  | Intelligent Transportation System and Traffic Management | 20h      | Jan - April | Master | English        | Open to discussion |
|  | Road Safety  | 8 to 15h | Jan - April | Master | English        | Open to discussion |
|  | Smart Water  | 8 to 15h | Jan - April | Master | English        | Open to discussion |
|  | Planning and Design of Urban Space                       | 3 to 4h  | Sept - Nov  | Master | English        | No                 |
|  | GIS and Urban Planning                                   | 6h       | Sept - Oct  | Master | English        | No                 |
|  | Sustainable architecture / construction                  | 8h       | Jan - April | Master | French/English | Open to discussion |
|  | Architecture History Culture                             | 4 to 8h  | Sept - Nov  | Master | French/English | Open to discussion |
|  | Functional textiles                                      | 8h       | Sept - Nov  | Master | French/English | Open to discussion |
|  | Surface treatments (textile finishing) and coating       | 8h       | Jan - April | Master | French/English | Open to discussion |
|  | Technical textiles & Nonwovens                           | 8h       | Sept - Jan  | Master | French/English | Open to discussion |






## COMPUTER SCIENCE AND MATHEMATICS

|   |  |               |             |         |         |    |
|---|--|---------------|-------------|---------|---------|----|
|   | Functions of Several Variables (Introduction, graphical representation, limits and continuity) | 8h            | September   | BSc2    | English | No |
|   | Partial Derivatives  | 8h            | October     | BSc2    | English | No |
|   | Directional Derivatives, Gradient Vectors, Differential Operators                              | 8h            | November    | BSc2    | English | No |
|   | Multiple Integrals   | 10h           | December    | BSc2    | English | No |
|   | Univariate and Bivariate Descriptive Statistics  | 8h            | Sept - Dec  | BSc2    | English | No |
|   | Foundation of Probability & Discrete Probability   | 10h           | Sept - Oct  | BSc2    | English | No |
|   | Continuous Probability Distributions   | 8h            | Nov - Dec   | BSc2    | English | No |
|   | Modelling with PDEs  | 8h            | Jan - April | BSc2    | English | No |
|   | Laplace Transforms and Transfer Functions  | 8h            | Jan - April | BSc2    | English | No |
|   | Markov Chains and Modelling  | 8h            | Jan - April | BSc2    | English | No |
|   | Optimization for Engineering (Linear Programming and Lagrange Multipliers)                     | 8h            | Jan - April | BSc2    | English | No |
|   | Least Squares Methods (calculus point of view)   | 8h            | Jan - April | BSc2    | English | No |
|   | Discrete Optimization for Engineering  | 8h            | Jan - April | BSc2    | English | No |
|   | Fourier Series   | 8h            | Jan - April | BSc2    | English | No |
|   | Parametric Estimation  | 9h            | Jan - Feb   | BSc2    | English | No |
| Statistical Hypotheses Test                             | 9h   | March - April | BSc2        | English | No      |    |
| Linear Regression (simple, multiple and its diagnostic) | 9h   | Feb - April   | BSc2        | English | No      |    |


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|---|---|--|---|---|


## COMPUTER SCIENCE AND MATHEMATICS

|   |  |    |              |        |         |                    |
|---|--|----|--------------|--------|---------|--------------------|
|  | Principal Components Analysis                                | 9h | Feb - April  | BSc2   | English | No                 |
|   | Introduction to machine learning                             | 9h | March- April | BSc2   | English | No                 |
|   | Advanced Programming (C language)                            | 8h | Spring       | BSc2   | English | Open to discussion |
|   | Information Systems  | 8h | Spring       | BSc2   | English | Open to discussion |
|   | Databases (SQL)  | 8h | Spring       | BSc1   | English | Open to discussion |
|   | Artificial intelligence : Machine Learning and Deep Learning | 8h | Jan - Feb    | Master | English | No                 |
|   | Splines: Interpolation, Bézier Curves, B-Curves              | 8h | Fall         | BSc3   | English | No                 |

## ENGINEERING

|   |                    |         |             |          |                |                    |
|---|--------------------|---------|-------------|----------|----------------|--------------------|
|  | Automation         | 8 à 10h | Feb - March | Master 1 | French/English | Open to discussion |
|   | Project management | 2*8h    | October     | Master 1 | English        | Open to discussion |

## ELECTRONICS, PHYSICS AND ACOUSTICS

|   |  |            |  |            |                                     |                    |
|---|--|------------|--|------------|-------------------------------------|--------------------|
|  | Hardware for Artificial Intelligence   | 8h         | Sept - March   | Master     | English                             | Open to discussion |
|   | Workshop on Auditory display of Natural Data : data conditioning, state-of-the-art methods, development of new methods | 10 to 20h  | Sept - March   | BSc3/MSc 1 | English<br><i>(French possible)</i> | Partly possible    |
|   | Workshop on Bio-inspired materials in connection to the module M2 "Bio-Nano-Tech"                                      | 10 to 20 h | May - Dec <i>(other dates are also possible depending on the Junia didactic needs)</i> | BSc3/MSc 1 | English<br><i>(French possible)</i> | Open to discussion |
|   | Microcontrolers architecture (internal structure, ALU, addressing modes, peripherals): class + practical labs          | 10 to 30 h | Jan and May  | Bsc 2      | English                             | No                 |
|   | Microelectronics : Analog, mixed-signal or digital Integrated Circuit Design   | 4 to 8h    | Sept - Oct<br>or Jan - March   | Master     | French/English                      | Open to discussion |



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## SMART SYSTEMS AND ENERGIES

|  |   |           |                 |              |                |                    |
|--|---|-----------|-----------------|--------------|----------------|--------------------|
|  | Photovoltaic system sizing, implementation, control and production forecast | 8 to 12h  | To be discussed | BSc3, Master | French/English | Open to discussion |
|  | Advanced Fluid Dynamics   | 15 to 20h | To be discussed | Master       | English        | Open to discussion |
|  | Advanced Heat Transfer  | 15 to 20h | To be discussed | Master       | English        | Open to discussion |
|  | Renewable Energy Systems  | 8 to 12h  | To be discussed | Master       | French/English | Open to discussion |
|  | Smart grids, Energy management , P2P energy exchange                        | 8 to 12h  | To be discussed | Bsc3, Master | French/English | Open to discussion |
|  | Thermodynamic 1   | 8 to 12h  | To be discussed | BSc3         | English        | Open to discussion |
|  | Thermodynamic 2   | 8 to 12h  | To be discussed | BSc3         | English        | Open to discussion |
|  | Structural mechanics (Strength of Material)                                 | 8 to 12h  | To be discussed | BSc3         | English        | Open to discussion |
|  | Dynamics  | 8 to 12h  | To be discussed | BSc3         | English        | Open to discussion |
|  | Internal combustion Engine (ICEs)   | 8 to 12h  | To be discussed | BSc3, MSc    | English        | Open to discussion |
|  | Mechanical Design   | 8 to 12h  | To be discussed | BSc3         | English        | Open to discussion |
|  | Blockchain and energy   | 8 to 12h  | To be discussed | Master       | French/English | Open to discussion |

## HEALTH AND ENVIRONMENT

|  |   |          |                 |        |                            |                    |
|--|---|----------|-----------------|--------|----------------------------|--------------------|
|  | Monitoring of environmental pollutants / soil & GW quality investigation      | 8 to 12h | To be discussed | Master | French/English             | Open to discussion |
|  | Contaminated land issues / polluted sites management / remediation techniques | 8 to 12h | To be discussed | Master | French/English             | Open to discussion |
|  | Soil ecology and ecosystem services   | 8 to 12h | To be discussed | Master | French/English/<br>Spanish | Open to discussion |
|  | Phytoremediation/ Phytomanagement   | 8 to 12h | To be discussed | Master | French/English/<br>Spanish | Open to discussion |
|  | Pollutants: origins, behaviour, pollutants chemistry                          | 8 to 12h | To be discussed | Master | French/English/<br>Spanish | Open to discussion |
|  | Integrated Water Resource Management  | 8 to 12h | To be discussed | Master | French/English             | Open to discussion |
|  | Drinking and Wastewater treatment techniques                                  | 8 to 12h | To be discussed | Master | French/English             | Open to discussion |
|  | Water quality and Chemistry   | 8 to 12h | To be discussed | Master | French/English             | Open to discussion |
|  | CSR - EMAS  | 4 to 8h  | Second semester | Master | French/English             | Open to discussion |



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Language



Blended/Virtual mobility

## BUSINESS AND MANAGEMENT

|  |  |                 |                     |                |                        |                    |
|--|--|-----------------|---------------------|----------------|------------------------|--------------------|
|  | BtoB marketing   | 8 to 20h        | To be discussed     | BSc3, Master   | French/English/Spanish | Open to discussion |
|  | Supply Chain Management  | 10 to 12h       | From March to April | Master         | French/English/Spanish | Open to discussion |
|  | Enterprise systems (introduction to ERP, criteria for ERP selection) - blended learning (with hands-on learning) | 8 to 16h        | To be discussed     | BSc3, Msc      | French/English         | No                 |
|  | Marketing applied to food product development : a French case study  | 8 to 20h        | To be discussed     | BSc3, Master   | French/English         | Open to discussion |
|  | Market data analysis through consumer panel and retail scanner panel : a French case study                       | 4 to 8h         | To be discussed     | Master         | French/English         | Open to discussion |
|  | Market research : surveys  | 4 to 8h         | To be discussed     | BSc 3, Master  | French/English         | Open to discussion |
|  | Introduction to marketing (extracts)   | 4 to 12h        | To be discussed     | BSc 3, Master  | French/English         | Open to discussion |
|  | Event studies / études d'événements ( finance) French or US case study   | 4 to 8h         | To be discussed     | BSc 3, Master  | French/English         | Open to discussion |
|  | Business start-ups and financing /La création d'entreprise et le financement des start-up                        | 4 to 8h         | To be discussed     | BSc 3, Master  | French/English         | Open to discussion |
|  | Budget Management / La gestion budgétaire  | 4 to 8h         | To be discussed     | BSc 3, Master  | French/English         | Open to discussion |
|  | Investment choice / Le choix d'investissement  | 4 to 8h         | To be discussed     | BSc 3, Master  | French/English         | Open to discussion |
|  | Full cost method / La méthode des coûts complets   | 4 to 8h         | To be discussed     | BSc 3, Master  | French/English         | Open to discussion |
|  | Corporate Governance / La gouvernance d'entreprise   | 4 to 8h         | To be discussed     | BSc 3, Master  | French/English         | Open to discussion |
|  | Idea generation (new enterprises)  | 4 to 8h         | To be discussed     | BSc 3, Master  | English                | Open to discussion |
|  | Fintech (financial technology) introduction  | 4 to 8h         | To be discussed     | BSc 3, Master  | English                | Open to discussion |
|  | Financial management (entreprises and start-ups)   | 4 to 8h         | To be discussed     | BSc 3, Master  | English                | Open to discussion |
|  | Foreign Direct Investment  | 4 to 8h         | To be discussed     | BSc 3, Master  | English                | Open to discussion |
|  | The foreign exchange market  | 4 to 8h         | To be discussed     | BSc 3, Master  | English                | Open to discussion |
|  | The international monetary system  | 4 to 8h         | To be discussed     | BSc 3, Master  | English                | Open to discussion |
|  | The global capital market  | 4 to 8h         | To be discussed     | BSc 3, Master  | English                | Open to discussion |
| Introduction to Enterprise Risk Management     | 4 to 8h  | To be discussed | BSc 3, Master       | English        | Open to discussion     |                    |
| Introduction to the agri-food sector in Europe | 4 to 8h  | To be discussed | BSc3, MSc           | French/English | No                     |                    |

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Level



Language



Blended/Virtual mobility

## FOOD SCIENCES

|  |  |                 |                 |                |                |    |
|--|--|-----------------|-----------------|----------------|----------------|----|
|  | Food Safety Management Systems                         | 8 to 16h        | To be discussed | MSc            | French/English | No |
|  | HACCP and Prerequisite programs                        | 8 to 16h        | To be discussed | BSc3 or MSc    | French/English | No |
|  | Sensory Evaluation                                     | 8 to 24h        | To be discussed | MSc            | French/English | No |
|  | Nutrition applied to food companies, French gastronomy | 8 to 16h        | To be discussed | MSc            | French/English | No |
|  | Sensory Evaluation                                     | 8 to 24h        | To be discussed | MSc            | French/English | No |
|  | Design of experiments                                  | 12 to 24h       | To be discussed | MSc            | French/English | No |
|  | Dairy processings                                      | 4 to 8h         | To be discussed | BSc3, Msc      | French/English | No |
|  | Food and industrial fermentation                       | 4 to 12h        | To be discussed | MSc            | French/English | No |
|  | Unit Operations  | 8 to 16h        | To be discussed | BSc3 or MSc    | French/English | No |
|  | Introduction to ERP (using a SAP simulation game)      | 8 to 16h        | To be discussed | BSc3 or MSc    | French/English | No |
| Introduction to the agri-food sector in Europe | 4 to 8h  | To be discussed | BSc3 or MSc     | French/English | No             |    |

## AGRICULTURE AND LANDSCAPE






|  |  |          |                 |               |                |                    |
|--|--|----------|-----------------|---------------|----------------|--------------------|
|  | Plant Breeding and Genetics (Breeding methods and Biotechnologies used in Plant Beeding)   | 8h       | To be discussed | Master        | French/English | Open to discussion |
|  | Biocontrol for Sustainable Crop Protection (Biocontrol of plant pathogens using microorganims and natural substances; Plant immunity and induced resistance in plants against plant pathogens) | 8h       | To be discussed | Master        | French/English | Open to discussion |
|  | French livestock systems   | 2 to 8h  | To be discussed | Master        | French/English | Open to discussion |
|  | Milk production and dairy chain  | 4 to 12h | To be discussed | Master        | French/English | Open to discussion |
|  | Quality signs in agricultural products in France   | 4 to 8h  | To be discussed | Master        | French/English | Open to discussion |
|  | Agriculture and climate change (climate collage serious game 4h + impacts of CC on agriculture in France 4h)   | 8h       | To be discussed | BSc 3, Master | French/English | Open to discussion |
|  | veal calves production systems and welfare   | 3 to 4h  | To be discussed | BSc 3, Master | French/English | Open to discussion |
|  | Animal welfare   | 4 to 12h | To be discussed | BSc 3, Master | French/English | Open to discussion |
|  | Climate fresk  | 3h       | To be discussed | BSc, Master   | French/English | No                 |

## BUILDING AND URBAN ENVIRONMENT


|  |   |         |                                       |              |                |                    |
|--|---|---------|---------------------------------------|--------------|----------------|--------------------|
|  | Sustainable architecture / construction | 4 to 8h | To be discussed                       | BSC3, Master | French/English | Open to discussion |
|  | Architecture History Culture            | 4 to 8h | To be discussed                       | BSC3, Master | French/English | Open to discussion |
|  | Functional textiles                     | 8h      | To be discussed                       | Master       | French/English | Open to discussion |
|  | Technical textiles                      | 8h      | 2 <sup>nd</sup> semester (jan - june) | BSC3, Master | French/English | Open to discussion |

# outgoing teaching offer


year 2024.2025

|   |   |   |   |   |
|---|---|---|---|---|
|  |  |  |  |  |
| Number of teaching hours  | Ideal Period  | Level   | Language  | Blended/Virtual mobility  |


## BUILDING AND URBAN ENVIRONMENT

|   |  |           |                 |              |                |                    |
|---|--|-----------|-----------------|--------------|----------------|--------------------|
|  | Smart cities and smart building                  | 10h       | To be discussed | Master       | French/English | Open to discussion |
|   | Building Information Modeling (BIM) fundamentals | 8 to 15h  | To be discussed | BSC3, Master | French/English | Open to discussion |
|   | Smart Management System                          | 8 to 15h  | To be discussed | BSC3, Master | French/English | Open to discussion |
|   | Revit Software                                   | 20 to 25h | To be discussed | BSC3, Master | French/English | Open to discussion |
|   | Digital Twins (DT)                               | 4 to 8h   | To be discussed | BSC3, Master | French/English | Open to discussion |

## COMPUTER SCIENCE AND MATHEMATICS

|   |  |                   |                   |                    |                |                    |
|---|--|-------------------|-------------------|--------------------|----------------|--------------------|
|  | Applications of Markov Chains and Random Processes           | 8 to 12h          | To be discussed   | BSc2, BSc3, Master | French/English | Open to discussion |
|   | Modern Cryptography (elliptic curves, post-quantum, ...)     | 8 to 12h          | To be discussed   | Master             | French/English | Open to discussion |
|   | Pentesting   | 8 to 20h          | To be discussed   | Master             | French/English | Open to discussion |
|   | Modeling Techniques in Mixed-Integer Linear Programming      | 8 to 12h          | To be discussed   | BSC3, Master       | French/English | No                 |
|   | Artificial intelligence : Machine Learning and Deep Learning | 8h                | Nov/Dec/April/May | Master             | English        | No                 |
|   | Artificial intelligence : Reinforcement Learning             | 8h                | Nov/Dec/April/May | Master             | English        | No                 |
|   | Computer Vision  | 8h                | Nov/Dec/April/May | Master             | English        | No                 |
|   | Hardware Artificial intelligence : Cuda programming          | 8h                | Nov/Dec/April/May | Master             | English        | No                 |
| Natural Language Processing, Generative AI and LLM                                | 8h   | Nov/Dec/April/May | Master            | English            | No             |                    |

## ENGINEERING

|   |                         |           |               |        |                |                    |
|---|-------------------------|-----------|---------------|--------|----------------|--------------------|
|  | Supply Chain Management | 10 to 12h | March - April | Master | French/English | Open to discussion |
|---|-------------------------|-----------|---------------|--------|----------------|--------------------|

## ELECTRONICS, PHYSICS AND ACOUSTICS

|   |   |                 |                     |                |                |                    |
|---|---|-----------------|---------------------|----------------|----------------|--------------------|
|  | Geometric optics, mechanics, thermodynamics, electromagnetism, wave physics, quantum mechanics      | 8 to 30h        | April/May/June 2023 | BSc1,2,3       | French/English | No                 |
|   | Special relativity, general relativity, astronomy, cosmology  | 8 to 30h        | April/May/June 2023 | Master         | French/English | No                 |
|   | Integrated Circuit Design using Cadence (labs)  | 8 to 30h        | To be discussed     | Master         | French/English | No                 |
|   | Mixed-signal circuits for audio applications (delta-sigma ADC, class-D amplifiers): hands-on course | 8 to 30h        | To be discussed     | Master         | French/English | No                 |
|   | Hardware for Artificial Intelligence  | 8h              | Sept - March        | Master         | French/English | Open to discussion |
| Introduction to PIC Microcontrollers Assembly Language                              | 8 to 12 h   | To be discussed | BSc 2, BSc 3        | French/English | No             |                    |

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