



3.00 credits

30.0 h

Q1

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| Teacher(s) | Collin Sonia ; |
| Language : | French |
| Place of the course | Louvain-la-Neuve |
| Prerequisites | Analysis of organic compounds - I : separation techniques |
| Main themes | <p>A- Major food constituents: physico-chemical properties, reactivity, functional properties, modifications during processing. Mainly 4 families of constituents are investigated : carbohydrates and Maillard reactions, lipids and chemical/enzymatic oxidation pathways (antioxidants, especially polyphenols), proteins, and water. The experimental courses associated to this part are organized around the production of a wine and the analyses of its raw materials.</p> <p>B- Minor food constituents: chemical structures, reactivity and functional properties of the aromas, sweeteners, imitators of fats, colouring agents, and contaminants (dioxins, PCB, mycotoxins, nitrosamines, acrylamide..).</p> |
| Learning outcomes | |
| Evaluation methods | Written examination for the theoretical aspects. The experimental know-how and the attitude are assessed throughout practical classes, as well as by a relatively concise report. |
| Teaching methods | Magistral lectures for the theoretical part of the course. The chocolate is used as the typical example in all chapters. The student is also brought to produce a wine, and to implement a series of protocols aiming at the analysis of grapes and wine. According to the number of students, certain aspects can be approached through the analysis of published papers. |
| Content | <ul style="list-style-type: none"> - Chemistry of sugars and Maillard reactions - Compounds issued from lipid oxidation - Chemistry of polyphenols and actions against lipid oxidation - Other major constituents: proteins and water - Chemical structures and synthesis pathways of the main aromas - Other minor constituents: colorants, sweeteners, contaminants .. |
| Inline resources | Moodle |
| Bibliography | Polyphénols et procédés. Collin et Crouzet. 2011. Ed Tec et Doc. Lavoisier. ISBN : 978-2-7430-1338-7 |
| Other infos | This course can be given in English. |
| Faculty or entity in charge | AGRO |

| Programmes containing this learning unit (UE) | | | | |
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| Program title | Acronym | Credits | Prerequisite | Learning outcomes |
| Master [120] in Agricultural Bioengineering | BIRA2M | 3 | |  |
| Advanced Master in Brewing Engineering | BRAS2MC | 3 | |  |