# LCHM2261A

*2015-2016*

# Polymer Chemistry and Physico-Chemistry

| 3.0 credits | 22.5 h + 7.5 h |
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| Teacher(s) : | |
| Language : | Français |
| Place of the course | Louvain-la-Neuve |
| Main themes : | The course first consists of a theoretical part in which are discussed concepts such as the size of macromolecules in solution, the thermodynamic properties of polymer solutions, and the different techniques of characterization of polymers in solution. This theoretical introduction is followed by a case study performed in small groups, aiming at placing the notions in a practical context; this part includes also notions from previous courses in polymer science. These two parts are of equivalent volume. |
| Aims : | This course aims at providing a deeper understanding of physico-chemical properties of polymers in solutions.<br>At the end of the course, the students will be able to analyze results from experimental methods of determination of the molecular characteristics of a polymer (molar mass, distribution of molar mass, radius of gyration), and to predict its behaviour in solution (solubility, swelling, second viral coefficient, interaction parameter, phase separation). They will also be capable to solve problems of practical relevance in the field of polymer engineering using these and complementary notions.<br>The contribution of Teaching Unit to the development<br>*The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".* |
| Content : | 1. Solutions of small molecules - reminders<br>2. Characteristics of macromolecular chains<br>3. Single chains in dilute solution<br>4. Viscometry and Size-Exclusion Chromatography<br>5. Phase diagrams of polymer solutions 6.Osmometry of macromolecular solutions<br>7. Static light scattering of macromolecular solutions<br>Flipped classrooms and case studie. |
| Other infos : | Documents: Written notes and reference books will be made available for the students. |
| Faculty or entity in charge: | CHIM |

| Programmes / formations proposant cette unité d'enseignement (UE) | | | | |
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| Intitulé du programme | Sigle | Credits | Prerequis | Acquis d'apprentissage |
| Master [120] in Chemistry | CHIM2M | 3 | - | |