

New course for Master and PhD students (IQ 474A, 2014)

Multicomponent Mass Transfer

This Advanced Course is about the diffusion and mass transfer processes that are really important in practise, but which are neglected in most textbooks:

- those with three or more species, the ‘multicomponent’ mixtures,
- those with more than one driving force, including electrical or pressure gradients, and
- those with a solid matrix such as a polymer or a porous medium.

This course is for students with an interest in processes or products, in different settings such as chemicals, water treatment, food, biotechnology, pharmaceuticals etc. Students should have a basic working knowledge of thermodynamics, phase equilibrium, transport phenomena and fluid flow.

This Advanced Course is based on the textbook by Hans Wesselingh and Rajamani Krishna, which is an excellent and well written introduction into the material. It focuses on understanding of application in practical situations and not on mathematical complexity of purely theoretical problems. The course is a balanced mix between short lectures and (computer) assignments during one week. Grading is done by developing (as a duo) an assignment that is directly applicable to your own research project, industry job or other situation of real interest. There will be time during the one week course to make a start and completing will take approximately an additional 20 hours.

Materials: Book “Mass Transfer in Multicomponent Mixtures” by J.A. Wesselingh and R. Krishna, published by Delft University Press / VSSD, 2006.

Schedule: March 10 – 14, 2014; each day from 09:00 until 18:00hr, plus one evening program.

Location: School of Chemical Engineering (FEQ) at Unicamp, Campinas.

Examination: Assignment elaborated by 2 students, using Mathcad software.

Credits: 4 credits (60 hours), course is open to Master and PhD students from all faculties.

Language: This course will be given in English.

Enrolment: Code IQ 474 A – first semester of 2014, no fee is charged for this course.

Information: Prof. Guilherme Jose De Castilho (FEQ|UNICAMP) or brazil@be-basic.org.

Professors: This course is offered by FEQ|UNICAMP in close collaboration with Delft University of Technology and BE-Basic. Lectures will be given by prof Guilherme Jose De Castilho (FEQ|UNICAMP), prof. Luuk van der Wielen (TU Delft and BE-Basic) and prof. Hans Wesselingh (RU Groningen).