Bioprocess

Crédits ECTS
3 crédits

En bref

Langue de cours: Anglais

Présentation

Prérequis

Wastewater treatment; Bioprocesses; Process Engineering; Modelling; Mass balance

Objectifs d'apprentissage

- Understanding of the main constraints and challenges when sizing a reactor for wastewater treatment
- Most commonly used biological reactions in the context of wastewater remediation
- Sizing of a biological reactor through mass balance for batch/continuous; steady-state or dynamic processes

Description du programme

This class introduces the students to the basics of wastewater treatment such as wastewater constituents and their measurement, and the impact of flowrate and constituents load variations. The students are then introduced to the principles of biological reactions kinetics and are taught the sizing of bioreactors through mass balance in the broader context of biological wastewater remediation.

A project must be carried out in which the students must size a bioreactor for the remediation of wastewater of given characteristics and for a given biological activity. The project confronts the students to steady-state or dynamic mass balance solving, and lead the students to deal with the impact of a perturbation of the wastewater treatment.

Bibliographie

Metcalf & Eddy, A. E. C. O. M. (2014). *Wastewater engineering treatment and resource recovery*. McGraw-Hill Education.

Equipe pédagogique

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Total des heures		**24h**
CM	Cours Magistral	16h
TD	Travaux Dirigés	8h

Infos pratiques

Nom responsable UE

Responsable pédagogique

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