UCLouvain

lgbio2110

2020

Introduction to Clinical Engineering

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

3 credits	30.0 h	Q2

Teacher(s)	Delhaye Benoit ;Lefèvre Philippe ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	LGBIO2110 presents the different aspects of engineering duties inside a hospital. This course focuses both on medical devices but also on the processes inside a hospital (patient admission, pre-operative screening '). This course covers a broad range of topics in order to represent the diversity of tasks performed by engineers inside a hospital.
Aims	Regarding the learning outcomes of the programme of "Master in Biomedical Engineering", this course contributes to the development and the acquisition of the following skills : • AA1.1, AA1.2, AA1.3 • AA3.1, AA3.2 • AA4.1 • AA5.2, AA5.3, AA5.6 • AA6.1, AA6.3 a. Domain-related learning outcomes At the end of this course, students will be able to: 1 • Understand the importance of risk analysis in the clinical settings and for medical devices • Explain the different techniques to identify the risk and their respective strengths/weaknesses • Assess the reliability of the clinical literature in the context of a health technology assessment, especially those linked to medical devices. • Understand the factors governing health economics and simulating a model of health economics that takes into account the uncertainties of the parameters (e.g. MonteCarlo simulation) • Compare the different techniques of quality management used in clinical settings • Master the statistical tools linked to the Six Sigma technique (Control chart, statistical testing, confidence interval) • Explain the importance of inventory and maintenance of medical devices in a clinical setting and how they influence risk and quality management b. Transversal learning outcomes At the end of this course, students will be able to: • Read a health technology assessment and present it to a clinical audience • Perform Monte-Carlo simulations • Apply risk analysis tools • Apply quality management methods • Perform a literature search to find scientific articles linked to a specific article - - - - *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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** The final mark is obtained as following : • 30% is awarded based on the presentation of a scientific article linked to the course. • 70% is awarded based on an oral exam with preparation
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** The course consists of different modules (risk analysis, health technology assessment, quality management and medical device management).
Inline resources	Moodle https://moodleucl.uclouvain.be/course/search.php?search=LGBIO2110

Bibliography	Plusieurs livres servent de base pour les différents modules. Une copie de ses livres est disponible sur demande auprès de l'enseignant.
Faculty or entity in charge	GBIO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Biomedical Engineering	GBIO2M	3		