

## Faculty of Medicine



### FARM2230 Complement of instrumental analysis

[30h+15h exercises]

**Teacher(s):** Bernard Tilquin  
**Language:** French  
**Level:** Second cycle

#### Aims

The course has like general objective to look further into the application of the theoretical bases of chemistry (including the chemiometric approach), for will make it possible to the student to acquire following competences: 1. to select an ad hoc instrumental technique to answer a problem concrete, and to apply the criteria of an analytical step (rigour, exactitude, precision) 2. to seek errors and interferences related to method 3. to face the fast development of the chemical analysis

#### Main themes

Topics to be approached: - optimization of the application of the analytical methods of fractionation (chromatographies) - application of the methods molecular determination of structure (nuclear magnetic resonance, mass spectrometry, infra-red spectrometry). - laboratory experiment with access of concrete problems introducing the rigour necessary for the qualitative and quantitative approach.

#### Content and teaching methods

The methods and instrumental techniques (in chemical analysis) of point are exposed after a personal preparation of the students. The topics approached are: 1. Chromatographic parameters and their optimization. 2. The selectivity in chromatography. 3. Effectiveness in chromatography. 4. Chimiometric optimization. 5. Determination of molecular structures by spectrometry: - infra-red - of nuclear magnetic resonance of the  $^1\text{H}$  and the  $^{13}\text{C}$  - of mass using problems and exercises.

#### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

La participation aux conférences de la division analytique de SRC est possible sans frais  
 Introduction to the chemical analysis and the instrumental techniques Dialogues between the students and the teacher during the year + answer written to a selected question Livre of reference, documentation (biblio of the unit) Nothing Nothing the participation in the conferences of the analytical division of SRC is possible without expenses

#### Programmes in which this activity is taught

**ESP3DS** Diplôme d'études spécialisées en santé publique  
**ESP3DS/ST** Diplôme d'études spécialisées en santé publique (santé au travail)  
**NUT2** Licence en sciences biomédicales (nutrition humaine)

#### Other credits in programs

**ESP3DS/TI** Diplôme d'études spécialisées en santé publique (santé au travail - toxicologie industrielle)  
**SBIM31DS** Première année du diplôme d'études spécialisées en sciences biomédicales