

## Faculty of Medicine



### FARM2205 Integrated practical exercises and seminars in pharmaceutical sciences

[15h+180h exercises]

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**Language:** French  
**Level:** Second cycle

#### Aims

The objectives of these practical exercises are to make conspicuous the multidisciplinary of the pharmaceutical studies. The different practical exercises regrouped around the topics of the drugs (chemistry, biochemistry, analytical chemistry, kinetic, pharmacopoeia, dissolution, stability #) illustrate the potentiality of the multidisciplinary pharmaceutical approach and make it possible to be a crucible where the theoretical and practical concepts are confronted. At last, these practical exercises stimulate the initiatives and the team work.

#### Main themes

The student approaches the topics of the drugs with a multidisciplinary access (chemical, biochemical, analytical, galenic, toxicological and pharmaceutical). These approaches lead to a global analysis of the medical compound from the experimental work in laboratory to the data processing and statistical management with a critical discussion of the results by a research of the appropriated documents (pharmacopoeia, medicinal and chemical data bases, Internet and Intranet).

#### Content and teaching methods

- Chemical approach: synthesis, analysis and chemical kinetic of the synthesized products.
- Biochemical approach: enzymatic kinetic on the synthesized derivatives: determination of the kinetic parameters ( $V_m$  and  $K_m$ ).
- Galenic approach: the study of the dissolution of various galenic forms.
- Pharmaceutical approach: study of analysis according to the European Pharmacopoeia.
- Analytical approach: comparison of different methods of analysis: HPLC, UV-Visible, second-derivative UV-visible, I.R., fluorimetry, titrimetry.
- Toxicological approach: studies of toxicity.

The students work by small groups (4-6), each works on a part of the exercise.

Each exercise will comprise different sections: - preparation of the exercise: bibliography by Medline, current Content, Chemical Abstracts or Internet, application of the articles in process. - application of the process - statistical treatment of the data.

The prerequisites to approach the statistical data processing will be given at the beginning of year during 15 H of seminars which will enable them to acquire the guidelines to conclude the statistical processing of their data.

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

During his work, the student will be evaluated on the preparation and the comprehension of his work. It will be then judged on his report that it will depend with the various coordinators, thus making it possible to judge integration of its knowledge. The student must be familiarized with the statistical and data-processing tools in order to conclude his work. 15 H of seminars help the student to refresh his knowledge in the different areas.. A team will support the student during the different steps: coordinator, scientific personnel specialized in the field and a technical staff. To help the student, an Intranet will be placed at its disposal in a data-processing network. This Intranet available on 50 "thin-clients" connected with a server and distributed in 2 computer rooms near the laboratory. The purpose of this multi-media tool will be to better prepare the student in the comprehension of his practical work. Two rooms with computers will allow him to better search the informations (MEDLINE and other scientific data bases, Internet), the drafting of the report with WORD and the data processing with EXCEL, XLSTAT and JMP.