

ADVANCED PhD COURSES 2020

Faculdade de Farmácia, ULisboa

ADVANCED ANALYTICAL TOOL: MULTIPLE APPLICATIONS FOR MASS SPECTROMETRY

Course Coordinators: Maria Rosário Bronze and Noélia Duarte

Date: June 15-19, 2020

Short Introduction:

Mass Spectrometry (MS) is an advanced analytical technique that has reached an outstanding position due to its unique characteristics: high selectivity, low detection limits, speed and a large diversity of applications. During the last two decades, MS has progressed rapidly through the advances on ionization methods and mass analyzers that have led to the advent of new equipment. This progress has allowed the development of new applications mostly oriented towards health promoting areas such as proteomics, lipidomics, metabolomics, foodomics, drug discovery, pollution control and forensic and toxicological sciences. This course aims to give an overview on basic MS fundamentals and instrumentation highlighting several recent applications.

It will be covered by a variety of lecturers with different experience and know-how, most of them members of the Portuguese Mass Spectrometry Network (RNEM).

ADVANCED DRUG DELIVERY

Course Coordinators: António Almeida and Helena Florindo

Date: June 1-5, 2020

Short Introduction:

The course on Advanced Drug Delivery is part of the PhD Programme in Pharmacy, trains students in the development of advanced medicinal products, covering crucial aspects that determine the fate of drugs in the human or animal body, from their fundamentals to the advanced strategies to overcome the physiological barriers, including innovative technological and therapeutic applications.

ADVANCES IN NEUROPHARMACEUTICS

Course Coordinator: Adelaide Fernandes

Date: July 6-10, 2020

Short Introduction:

Neuropharmaceutics focuses on the identification of therapeutic targets in nervous system diseases, and then translating those discoveries into drug and therapy development. Neurological disorders have a crucial impact on our society accounting for increased health costs, while drug development to central nervous system (CNS) disorders represents the second investment priority of pharmaceutical industry, following cancer. Thus, advances in neuropharmaceutics is a key area for students of a PhD programme aiming to target discovery, drug design, medicine development and usage.

The course intends to improve PhD students' knowledge in the discovery of potential CNS-disease targets leading to the development of new neuroactive drugs, and the improvement of methods to deliver those drugs to the brain, under restricted safety and efficacy requirements.

ADVANCED TOPICS IN MEDICINAL CHEMISTRY AND CHEMICAL BIOLOGY

Course Coordinator: Rui Moreira

Date: July 13-17, 2020 (or November 16-20, 2020)

Short Introduction:

The advanced specialization course in Medicinal Chemistry and Chemistry Biology is intended to frame the training of students who have been admitted to the PhD program in Pharmacy. It is a highly flexible programme covering a wide range of courses taught by chemists, pharmacists, biologists and industrial medicinal chemists. It provides a strong foundation in core chemistry, supplemented by specialist knowledge of medicinal chemistry and chemical biology.

BIOACCESSIBILITY, BIOAVAILABILITY AND BIOACTIVITY OF PHYTOCHEMICALS

Course Coordinators: Maria Rosário Bronze and Maria Eduardo Figueira

Date: October 19-23, 2020

Short Introduction:

The course intends to provide an overview of how to address the issues pertaining to food/supplements bioactivity. This course will integrate experts from the area of the Pharmaceutical Sciences from the Faculty of Pharmacy and other areas of knowledge that are important to explain the functionalities in disease prevention. The course is adequate for students addressing PhD programs on Food/Supplements intake and their effect in the prevention of diseases namely non communicable ones.

BIOLOGIC THERAPIES: FROM ENGINEERING TO CLINICS

Course Coordinator: João Gonçalves

Dates: June 22-26, 2020

Short Introduction:

The course provides an overview of both classical and biotechnology derived medicinal products and on the pathways used for scientific advice, clinical trials and marketing authorizations in Europe. The course will also cover in detail the particular requirements for the CMC section, comparability packages and important safety procedures. The particular aspects of the non-clinical and clinical development of biopharmaceuticals will be presented. Case studies discussing how to develop proteins or cell therapies, such as monoclonal antibodies will illustrate the approach taken to identify benefit/risk ratio. An overview will be given on the most essential issues relating to Advanced Therapy Medicinal Products (ATMPs). A detailed presentation of the specific considerations for the development of biosimilar medicinal products, will be given during the course.

MOLECULAR BIOMARKERS AND TECHNOLOGIES

Course Coordinator: Cecília Rodrigues

Date: September 14-19, 2020

Short Introduction:

Biomarkers are now an integral part of the drug discovery and development process, acting as indicators of mechanism of action, efficacy, safety and disease progression, as well as assisting in disease diagnosis, patient selection and clinical trial design. Biomarkers also offer the potential to inform treatment decisions and bring personalized medicine into clinical practice.

Latest advances in clinical and translational biomarkers will be covered, including patient selection and predicting response to therapy, liquid biopsy and cell free DNA, companion diagnostics and personalized medicine, biomarker assay development and validation, and biomarker-based clinical trials. The new frontier of digital health and its impact on drug and diagnostic development will be explored, covering emerging digital biomarkers and their utility in clinical trials, advances in biosensors and wearables as clinical endpoints, integration of mobile health into drug development, and the latest applications of smartphones in point-of-care testing and remote patient monitoring.

NON-CLINICAL EFFICACY AND SAFETY

Course Coordinator: Beatriz Lima

Date: March 28, April 3-4, April 17-18 and April 24, 2020

Short Introduction:

The course intends to provide PhD students the basis for the preclinical research behind the development of new medicines, from discovery to early development, supportive of the entry into man for First in Human clinical studies. The relevant regulatory guidelines which support these requirements as well as their scientific rationale and their use will be described and explained. All the involved Faculty has experience on the Regulatory and scientific assessment of medicinal products and are current or past regulators with high engagement in the European activities on medicines development and approval process.

NOVEL CHALLENGES IN TOXICOLOGY

Course Coordinators: Nuno Oliveira and Joana Miranda

Date: October 6-9, 2020

Short Introduction:

Novel challenges in Toxicology is an innovative PhD Advanced course that provides an updated overview of key toxicological concepts and milestones, and also simultaneously addresses the new challenges and opportunities of modern toxicology. The course will be held at the FFUL in the framework of the research areas of the Research Institute for Medicines – iMed.ULisboa. This course is offered to the students enrolled in the PhD programme in Pharmacy that need to complement their background in different aspects of the Toxicological Sciences and/or need to use toxicological tools to complete their PhD work plan.

STEM CELL TECHNOLOGIES

Course Coordinators: Susana Solá and Christa Rhiner

Date: October 26-30, 2020

Short Introduction:

Stem cell-based therapies are thriving. In fact, pharmaceutical companies are increasingly investing in stem cell technology to develop innovative and potentially valuable new treatments for severe human diseases, including cancer and neurological disorders, such as multiple sclerosis, Alzheimer's and Parkinson's disease, mood disorders, brain tumors and even stroke. Moreover, although seminal advances have occurred in understanding stem cell biology, further work is still needed to bridge the current gap between stem cell technologies and effective treatments in brain-related disorders. Stimulating the scientific interest on the topic will certainly accelerate and improve the successful transfer of stem cell-based discoveries from the bench to the bedside.