Module	**Pharmaceutical Sciences Technologies**
Code	MLS_S23
Degree Program	Master of Science in Life Sciences (MSLS)
Cluster	Bio/Pharma
Specialization	Applied Biosciences
ECTS Credits	4
Workload	120 h: Contact 56 lessons = 42 h; Self-study 78 h
Module Coordinator	**Name** Origène Nyanguile **Phone** +41 27 606 8651 **Email** Origene.Nyanguile@hevs.ch **Address** HES-SO Valais, Sion
Lecturers	• PhD. Origène Nyanguile, HES-SO Valais / Wallis • PharmD. Philippe Buthier • Guest lecturers
Entry Requirements	Bachelor of Science in Life Technologies (orientation Biotechnology or Analytical Chemistry) or in a related course of study (Bachelor level).
Learning Outcomes and Competences	After completing the modules, the student will have an overview of the Pharmaceutical Industry process from the discovery to the manufacturing of drugs. The aim of this master is to be as close as possible to the industrial practice and to give to the student an overview of the activities that are performed in the pharmaceutical Industry. Most of the lectures will be given by experts who are currently working in different key positions inside Pharmaceutical Industries. The student will be able: • To understand the process from early drug discovery to formulation • To understand the basic of pharmaceutical manufacturing technologies and excipients and equipment used • To understand the organization within the pharmaceutical industry • To understand the working methodologies used by the pharmaceutical Industry

Module Content	• Drug discovery, hit to lead optimization, toxicology, tests of stability and pharmacokinetics • Drug definition • Drug packaging definition • Pharmaceutical solid dosages manufacturing processes and controls description • Pharmaceutical liquid and semi-liquid dosages manufacturing processes and controls description • Solutions for injection (S.C, I.M, I.V) manufacturing processes and controls description • Pharmaceutical Product Development and continuous improvements • Pharmaceutical Product Manufacturing Activities • Main Excipients used in Pharmaceutical Industry, DCI, trade names, suppliers, description and regular utilization. • Case studies from the development of the product until the start of industrialization
Teaching / Learning Methods	Lectures, seminar-style work, practical work, and exercise. Active participation in the module is requested
Assessment of Learning Outcome	The reports and presentations related to practical work or for seminars must be validated to gain access to the module examination. • Final examination (written): 100 % of the final grade • Reassessment: written exam
Bibliography	• The Practice of Medicinal Chemistry: *Camille Georges Wermuth* • Handbook of Pharmaceutical Excipients sixth edition : *Raymond C. Rowe, Paul J. Sheskey, Siân C. Owen, American Pharmacists Association* • Handbook of Pharmaceutical Granulation Technology : *Dilip M. Parikh* • Pharmacie galénique : formulation et technologie pharmaceutique *: Prof Werhlé* • Phi 41 : groupe IMT • 21 CFR 210 & 211 : FDA • European Pharmacopoeia 8th Edition 2014
Language	English
Comments	
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