
COURSE: PHARMACEUTICAL TECHNOLOGY AND LEGISLATION II

ACADEMIC YEAR: 2017-2018

TYPE OF EDUCATIONAL ACTIVITY: Characterizing

TEACHER: Antonio Vassallo

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Language: ITALIAN

ECTS: 10**(9 lessons and 1 tutorials/practice)**n. of hours: **84** (72 lessons and 12 tutorials/practice)Campus: **Potenza**Dept./School: **Department of Science**Program: **PHARMACY (LM-13)**Semester: **I**(from 02/10/2017 to 31/01/2018)

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course aims to provide a comprehensive knowledge for the formulation, preparation and control of medicinal products in the industry and in galenic formulations. In particular, the course aims to provide the basic elements for the implementation of innovative pharmaceutical forms.

The students at the end of the course have to demonstrate that they are able to:

- Know the basics of pharmacokinetics;
 - Know the chemical, physical and technological conditions for the drugs phase LADME, with special reference to pharmaceutical forms and controlled-release systems;
 - Knowing the principles of conveyance and drug targeting;
 - To recognize and classify pharmaceutical forms ;
 - Handle and recognize the raw materials in the formulation of therapeutic preparations;
 - Send medical prescriptions of medicinal and galenic preparations;
 - Consult the national tariff;
 - Know the rules relating to the exercise of legal and ethical professional;
 - Know some elements of pharmacoeconomics.
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PRE-REQUIREMENTSTechnical and pharmaceutical legislation I

SYLLABUSSuspensions and colloidal dispersions. (4 hours)Pharmaceutical formulations for topical use. Rheology. Transdermal absorption principles. Percutaneous absorption and formulation. Unguent. Creme. Gels. Multiple emulsions. Microemulsion. Tests for Identification of Emulsion types W/O and O/A. Lotions. Auxiliary ingredients. (8 hours)The plant -derived drugs. Homeopathic preparations. (4 hours)Inhalation formulations: liquid and solid preparations. Liquid preparations dispensed through pressurized inhalers with metering valve. (4 hours)Delayed, sustained and controlled release: General principles, speed and mechanism control of release, formulation methods, in vitro measure of bioavailability. (8 hours)Polymers of pharmaceutical interest : preparation, classification and properties. (4 hours)Micro/nanoparticles for drug delivery: Microparticles, Nanoparticles, Liposomes, Dendrimers. The microcapsules: introduction, aims and release mechanisms. Reservoir systems, matrix systems (monolithic, erodible, swellable), ion exchange systems, osmotic systems. Oral modified release dosage forms. Parenteral dosage Forms for sustained release systems, or "depot systems". (16 hours)Subcutaneous implants: Therapeutic systems for ophthalmic use, Intravaginal and intrauterine systems. Radiopharmaceuticals. (8 hous)Incompatibility: physical, chemical and technological properties. (4 hours)Pharmaceutical legislation. Custody and sale of poisons: Table 3. Rules concerning purchase, storage and sale of narcotics (DPR 309/90); Table 7 FU XII ed. Sale veterinary medicines. Medicines without prior shipment. The patent in the pharmaceutical field. Medical devices. Socioeconomy pharmaceutical. (12 hours)Laboratory tutorials/practice. Galenic Formulations: suppositories (3 hours), unguents (3 hours) and gels (3 hours).

The Medical prescription: Standards for the delivery of the Medical prescription. Charging (3 hours).

TEACHING METHODS

Numbers of hours: 84 (72 h lessons and 12 h Classroom tutorials/Laboratory tutorials)

EVALUATION METHODS

Intermediate verifications or Written examination, Practical test, and Oral examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Slides and study materials provided by Teacher.

Suggested textbooks::

- P. Colombo ed altri :” Principi di tecnologie farmaceutiche”- Casa Editrice Ambrosiana – Milano.
 - M. Amorosa - Principi di Tecnica Farmaceutica – Libreria Universitaria Tinarelli – Bologna.
 - Florence A. T., Attwood D.: " Le basi chimico-fisiche della Tecnologia farmaceutica " Ed. Edises
 - F. Bettiol : “Manuale di preparazioni galeniche” Ed. Tecniche nuove
 - E. Ragazzi: “Galenica pratica” Ed.Cortina
 - P. Brusa, A. Germano –“Prontuario pratico di galenica” Casa Editrice Ambrosiana – Milano.
 - Paola Minghetti, Marcello Marchetti - “Legislazione farmaceutica”. Casa Editrice Ambrosiana – Milano.
 - M. Cini, P. Rampinelli - Compendio di Legislazione Farmaceutica - Edizioni Minerva Medica – Torino
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INTERACTION WITH STUDENTS

At the beginning of the course, after having described the programme and the valuation’s methods, the teacher gives to students the studying material. In the same time, the teacher takes a paper with the names and emails of the students, who want to participate to the lessons/lab.

Teacher’s meetings: Monday from 12:30 am to 13:30 in the teacher’s office.

EXAMINATION SESSIONS (FORECAST)¹

22/01/2018, 12/02/2018, 21/05/2018, 18/06/2018, 09/07/2018, 10/09/2018, 26/11/2018

SEMINARS BY EXTERNAL EXPERTS YES X NO

FURTHER INFORMATION

Lab activities in preparation and control of medicinal products in galenic formulations.

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.