

PHARMACEUTICAL PREFORMULATION

SUBJECT: ELECTIVE

ORIENTATIONS: INDUSTRIAL; INVESTIGATION AND DEVELOPMENT

LINKING AREA: PHARMACY AND PHARMACEUTICAL TECHNOLOGY

CORE AREA: PHARMACY AND PHARMACEUTICAL TECHNOLOGY

DEPARTMENT: PHARMACY AND PHARMACEUTICAL TECHNOLOGY

CREDITS: 3 theoretical, 1 practical, 1 of supervised work

TEACHING SCHEDULE: 4th year, 2nd semester

OBJECTIVES

This subject includes the study of the properties that influence the optimal incorporation of a drug in a dosage form. The objective is to obtain relevant information for the subsequent development of a formulation with the optimal requirements. The characterization and modification of the psychochemical and biopharmaceutical characteristics of drugs are provided together with their stability and compatibility with possible excipients, the description of these excipients, and the solution to technological and biopharmaceutical problems that arise in the development of a pharmaceutical form.

THEORETICAL PROGRAM

Unit 1. Introduction to preformulation. Origin, concept and objectives. Stages and methodology.

Unit 2. Drug-excipient compatibility. Objectives and consequences. Study types. Methodology.

Unit 3. Stability and metabolism studies. Methodology.

Unit 4. Preformulation of liquid formulations. Usual studies for solutions and suspensions.

Unit 5. Preformulation of solid formulations. Usual studies for capsules and pills.

Unit 6. Biopharmaceutical issues in preformulation studies. Parameters and predictive absorption models. Methods for the characterization of permeability. Biopharmaceutical classification system.

Unit 7. Preformulation of biotechnological drugs. Stability, solubility and permeability. Excipients and stabilizers.

Unit 8. Strategies to improve the absorption and disposition of biotechnological drugs.

Unit 9. Strategies used to predict pharmacokinetic properties.