Course Specifications

University: Nahda University (NUB)

Code: PT 121 **Title: Physical Pharmacy**

Course Specifications

Program (s) on which the course in given : Pharmacy Program

Department offering the program:Department of Pharmaceutics and Clinical Pharmacy

Academic year / Level : 1ST Level

Date of specification approval 2015/2016

A- Basic Information

Prerequisites: Registration
Credit Hours: 2
Lecture: 2 Tutorial: ……..
Practical: 0 Total: 2

B- Professional Information

1- Overall aims of course

The course will develop the student's ability to search for and interpret information about physical pharmacy and its relation to other courses of pharmaceutics. It will foster problem-solving and decision-making skills that may be applied to the development, testing and production of pharmaceutical dosage forms. It will also develop the student's ability to design dosage forms in order to meet specifications.

2- Intended learning outcomes of course (ILOs)

A-Knowledge and understanding

The student should be able to:

1) Define basic principles and different terms of physical pharmacy.
2) Recognise overall aim of the course, the factors affecting solubility, dissolution and flow rate

B- Intellectual skills

The student should be able to:

1) Adopt calculations necessary for pharmaceutical experimental procedures.
2) Interpret experimental data relevant to the formulation and characterization of pharmaceuticals.
3) Distinguish between types of solutions, buffers, surfactants.
4) Compare between different types of flow and rheograms.

C- Professional and practical skills

The student should be able to:

Apply experimental work for measurement of surface tension.
Determine the solubility, viscosity and type of flow.

D- General and transferable skills

The student should be able to:

- Write a report on the properties of solutions and factors affecting solubility, pH and rheological properties.
- Present and discuss the report(s) in the class.

Contents

Week NO.	Topic	NO. of Hours	Lecture	Tutorial / Practical
W1	Welcome part, introduction, course description and references	2 hrs	2 hrs	0 hr
W2	Types of solutions and factors affecting solubility of solids	2 hrs	2 hrs	0 hr
W3	Solubility expression, units and types of drug solutions and their pH	2 hrs	2 hrs	0 hr
W4	Solutions of liquids in liquids and gases in liquids	2 hrs	2 hrs	0 hr
W5	Factors affecting solubility of liquids in liquids and gases in liquids	2 hrs	2 hrs	0 hr
W6	Solving problems about the whole part given from W1-W5	2 hrs	2 hrs	0 hr
W7	Revision			
W8	Difference between surface and interfaces and methods of determination of each	2 hrs	2 hrs	0 hr
W9	Surfactants: types, HLB, functions	2 hrs	2 hrs	0 hr
W10	Micelle formation, shape. Critical micelle concentration: Determination and factors affecting it.	2 hrs	2 hrs	0 hr
W11	Application of surface active agents and functions of SAA according to HLB	2 hrs	2 hrs	0 hr
W12	What is meant by Rheology, types of flow	2 hrs	2 hrs	0 hr
W13	Classification of material according to type of flow, thixotropy and application	2 hrs	2 hrs	0 hr
W14	Methods of determination of Rheological properties. Applications of rheology in pharmacy	2 hrs	2 hrs	0 hr
W15	Buffers and buffering agents, Determination of pH. Revision and answer questions	2 hrs	2 hrs	0 hr

W16	Final Exam			
Total		**30 hrs**	**30 hrs**	**-----**

3- Teaching & learning methods

1- Lectures

2- Assignments and case studies.

4- Student assessment methods

1- Periodicals to assess transferable Skills detailed in item 2d

2- Practical exam to assess practical skills detailed in item 2c

3- Oral exam to assess knowledge and intellectual skills detailed in items 2a &2b

4- Final term written exam to assess knowledge and understanding skills detailed in item2a

5- Assessment schedule

Assessment 1 Periodicals / midterm / 3 times per term / 7th week/ activities Throughout the whole term

Assessment 2 Practical 13th and 14th week

Assessment 3 Written 15th week

Assessment 4 Oral 15th week

Weighing of assessments

Mid-term examination: 20 marks

Final – term examination: 80 marks

Total: 100 marks

Any formative only assessments

6- List of references

6:1- Course notes:

6:2- Essential book (text books):

FAST track in Physical pharmacy, David Attwood and florence

6:3- Recommended books

Agarwal, S.P., and R. Khanna. Physical Pharmacy. 1st ed. CBS Publishers and Distributers, 2002.

Aulton, Michael E. Pharmaceutics: The Science of Dosage Form Design. 2 nd ed.

Churchill, 2002.

Cherng-Ju Kim, Advanced pharmaceutics "Physicochemical principles" CRC press, 2000.

University of the Sciences in Philadelphia, ed. Remington: The Science and Practice of

Pharmacy. 21 st ed. Lippincott, 2005.

Alfred N. Martin. Physical Pharmacy. 4th ed. Lea & Febiger, 1996.

6, 4- Periodicals, Web sites ….etc

7- Facilities required for teaching &Learning

Teacher name: Mahmoud M. Ahmed Elsayed

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Course coordinator:- Ass.Prof. Dr/ Mahmoud M. Ahmed Elsayed

Head of Department: Ass.Prof. Dr / Mahmoud M. Ahmed Elsayed

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