Gyanmanjari
Innovative University

Subject: Computer Applications in Pharmacy (BPHBP12204)

Type of course: Value Added Courses (VAC)

Prerequisite: NA

Rationale: This subject deals with the introduction Database, Database Management system, computer application in clinical studies and use of databases.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks	CA	
CI	T	P	C	ESE	MSE	VP	ALA	
2	-	-	2	35	15	-	-	50

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Course Content:

Chapter No	Course content	Hrs	% Weightage
1.	**Number system**: Binary number system, Decimal number system, Octal number system, Hexadecimal number systems, conversion decimal to binary, binary to decimal, octal to binary etc, binary addition, binary subtraction – One's complement ,Two's complement method, binary multiplication, binary division **Concept of Information Systems and Software :** Information gathering, requirement and feasibility analysis, data flow diagrams, process specifications, input/output design, process life cycle, planning and managing the project	6	20
2.	**Web technologies**: Introduction to HTML, XML, CSS and Programming languages, introduction to web servers and Server Products. Introduction to databases, MYSQL, MS ACCESS, Pharmacy Drug database.	6	20

3.	**Application of computers in Pharmacy** – Drug information storage and retrieval, Pharmacokinetics, Mathematical model in Drug design, Hospital and Clinical Pharmacy, Electronic Prescribing and discharge (EP) systems, barcode medicine identification and automated dispensing of drugs, mobile technology and adherence monitoring Diagnostic System, Lab-diagnostic System, Patient Monitoring System, Pharma Information System	6	20
4.	**Bioinformatics:** Introduction, Objective of Bioinformatics, Bioinformatics Databases, Concept of Bioinformatics, Impact of Bioinformatics in Vaccine Discovery.	6	20
5.	**Computers as data analysis in Preclinical development:** Chromatographic dada analysis(CDS), Laboratory Information Management System(LIMS) and Text Information Management System (TIMS).	6	20

Suggested Specification table with Marks (Theory):35

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	50 %	20%	05%	05%	-

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course the students should be able to:	
CO1	Utilize computers in pharmacy store are utilized for the data of medication information, records and documents, sedate administration (making, changing, including and erasing information in persistent documents to produce reports), business subtleties.
CO2	Understand the word processing package.
CO3	Use online software for the information of a drug and its adverse effects.
CO4	Describe and create a database in MS Access.
CO5	Explain the procedure of creating invoice table using – MS Access.

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Reference Books:

[1] Computer Application in Pharmacy – William E.Fassett –Lea and Fibiger, 600 South Washington Square, USA, (215) 922-1330.

[2] Computer Application in Pharmaceutical Research and Development –Sean Ekins Wiley-Interscience, a John Willey and Sons, INC., Publication, USA

[3] Bioinformatics (Concept, Skills and Applications) – S.C.Rastogi -CBS Publishers and Distributors, 4596/1- A, 11 Darya Gani, New Delhi – 110 002(INDIA)

[4] Microsoft office Access - 2003, Application Development Using VBA, SQL Server, DAP and Infopath – Cary N.Prague – Wiley Dreamtech India (P) Ltd., 4435/7, Ansari Road, Daryagani, New Delhi – 110002.