Dr. Bhimrao Ambedkar University, Agra

A State University of Uttar Pradesh (Paliwal Park, Agra -282004)

www.dbrau.ac.in

A Documentary Support

for

Matric No. – 1.1.1

Programme Outcomes & Course Outcomes

under the

Criteria – I

(Curriculum Design and Development)

Key Indicator - 1.1

in

Matric No. – 1.1.1

MASTER OF PHARM(PHARMACETICS)

2021

Registrar
BRA University, Agra

Mapping:

Global need ***Local Need*** ***Regional*** ***National***

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M. Pharm (Pharmaceutics)

PHARMACEUTICS	After completion graduate are ready to learn and acquire
PO1	Imparting theoretical knowledge and practical skills with the use of various advanced analytical instruments including NMR, Mass spectrometer, IR, HPLC, GC etc. It shall be applicable for identification, characterization, qualitative and quantitative analysis of various drugs in single and combination dosage forms.
PO2	In depth knowledge in the area of advances in novel drug delivery systems. This shall enable students to know the approaches for development of novel drug delivery systems, criteria for selection of drugs and polymers for the development of delivering system and about the formulation and evaluation of Novel drug delivery systems.
PO3	Imparting knowledge on various aspects viz. manufacturing of bulk, formulations in pharmaceutical industries. To understand the system as whole component wise studies is dispensed i.e., about preformulation studies, Active Pharmaceutical Ingredients, Generic drug Product development, Industrial Management, GMP Considerations, Optimization Techniques, Pilot Plant Scale Up Techniques, Stability Testing, sterilization process and packaging of dosage forms.
PO4	The information on regulatory affairs serves to gain advanced knowledge and skills required to learn the concept of generic drug and their development, various regulatory filings in different countries, different phases of clinical trials and submitting regulatory documents : filingprocess of IND, NDA and ANDA.
PO5	The knowledge of Biopharmaceutics & Pharmacokinetics is for development of skills necessary for dose calculations, dose adjustments and to apply biopharmaceutics theories in practical problem solving. Basic theoretical discussions of the principles of biopharmaceutics and pharmacokinetics are provided to help the students' to clarify the concepts.
PO6	Necessary training is imparted on computer applications in pharmaceutical research and development, it helps to understand the application of computers across the entire drug research and development process. Basic theoretical discussions of the principles of more integrated and coherent use of computerized information (informatics) in the drug development process are provided to help the students to clarify the concepts.
PO7	Appreciable knowledge and exercise is imparted on Biostatisitcs And Research Methodology to make the students understand the applications like descriptive statistics, Graphics, Correlation, Regression, logistic regression Probability theory, Sampling technique, Parametric tests, Non Parametric tests, ANOVA of Biostatics in Pharmacy.

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M. Pharm (Pharmaceutics)

Course outcomes (COs):

YEAR/ Sem.	SUBJECT & SUBJECT CODE	OUTCOME
I sem.	MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES(MPH101T)	**CO1:** This subject deals with various advanced analytical instrumental techniques for identification, characterization and quantification of Active Pharmaceutical Ingredient
	DRUG DELIVERY SYSTEMS (MPH 102T)	**CO2:** This course is designed to impart knowledge on the area of Drug delivery at onsite of action
	MODERN PHARMACEUTICS (MPH 103T)	**CO3:** Course designed to impart advanced knowledge and skills
	REGULATORY AFFAIRS(MPH 104T)	**CO4:** Course designed to impart advanced knowledge and skills clinical trials and submitting regulatory documents : filing process of IND, NDA and ANDA
II sem.	MOLECULAR PHARMACEUTICS(NTDS) (MPH 201T)	**CO5:** This course is designed to impart knowledge on the area of advances in novel drug delivery systems
	ADVANCED BIOPHARMACEUTICS	**CO6:** This course is designed to impart knowledge and skills necessary for dose calculations, dose adjustments and to apply biopharmaceutics theories in practical problem solving. Basic theoretical discussions of the principles of biopharmaceutics and pharmacokinetics are provided to help the students' to clarify the concepts
	COMPUTER AIDED DRUG DEVELOPMENT	**CO7:** This course is designed to impart knowledge and skills necessary for computer Applications in pharmaceutical research and development who want to understand the application of computers across the entire drug research and development process. Basic theoretical discussions of the principles of more integrated and coherent use of computerized information (informatics) in the drug development process are provided to help the students to clarify the concepts.
	COSMETICS AND COSMECEUTICALS(MPH 204T)	**CO8:** This course is designed to impart knowledge and skills necessary forth fundamental need for cosmetic and cosmoceutical products
III sem.	RESEARCH METHODOLOGY & BIOSTATISTICS (MRM	**CO9:** The student will be known the Biostatistics arrangement, presentation and formation of tables and charts. They also know the correlation and regression & application of different methods, analysis of data and also learn how to write dissertation, thesis and Research paper.

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Program Specific Outcomes (PSOs)

PSO1: To develop new/ groundbreaking medications / bulk drug/pharmaceutical formulation require latest methods, technologies and processes. In this, phase/topic wise is covered in the syllabus e.g., selection of drugs, dose calculations, dose adjustments by applying biopharmaceutics theories, pharmacokinetic and bioequivalence models, *in-vitro* and *in-vivo* studies using computer simulations, population modeling's, potential clinical pharmacokinetic and problem analysis, selection of polymers and various preformulation elements, pilot plant scale up techniques, industrial management, GMP considerations, stability testing, sterilization, formulation, evaluation and packaging of dosage forms.

PSO2: Professional Training to the students to work on drug compounds and develop new medications based on research. In this students learn test medications for efficiency and safety, oversee the production process to ensure medication are produced accurately, conducting clinical drug trials and evaluating the results of these trials to gauge a drug's effectiveness and to determine potential risks or side effects.

PSO3: Students are trained to collaborate with various pharmaceutical companies and variety of health care professionals to ensure clinical drug trials are conducted safely as per regulatory guidelines for the testing of drugs.

PSO4: To develop a scientific innovation thought /innovation by assigning independent research projects to each students under specialized subjects supervisors. The findings/outcome of the research are promoted to be published in reputed national/international journals.