

# R.K. PHARMACY COLLEGE

## COURSE HANDOUT

Pharmaceutics (Theory)

COURSE CODE: ER20-11T

### VISION

Train the minds to think logically and become a success

### MISSION

To Develop inventive, pioneering research & high-quality technical education

### PROGRAMME EDUCATIONAL OBJECTIVES

- PEO 1:** To produce graduates with sound theoretical knowledge and technical skills required for career opportunities in various domains.
- PEO 2:** To incite the students towards research and to address the challenges with their innovative Contributions for the benefit of mankind.
- PEO 3:** To bring forth a quality professional equipped with technological advances to adapt easily to changes in the ever-evolving pharma and allied industry, hospital and clinical pharmacy setup, pharma retailing and distribution, and governmental and health agencies.
- PEO 4:** To engage graduates in professional ethical practices in a multidisciplinary environment, while contributing to organization through leadership and building team spirit.
- PEO 5:** Pharmacists can become lifelong learners, absorb new technologies, and then offer leadership roles in society.

<b>Programme Name</b>	Diploma in Pharmacy (D. Pharm)
<b>Course Name</b>	Pharmaceutics (Theory)
<b>Course Code</b>	ER20-11T
<b>Session</b>	2025-26
<b>Year</b>	I
<b>Labs (Per Week)</b>	3
<b>Course Credit</b>	2
<b>Course Coordinator Name</b>	

#### 1. Scope of the Course:

This course is designed to impart basic knowledge and skills on the art and science of formulating and dispensing different pharmaceutical dosage forms.

#### 2. Course Outcomes (COs):

- CO.1. Describe about the different dosage forms and their formulation aspects.  
CO.2. Explain the advantages, disadvantages, and quality control tests of different dosage forms.  
CO.3. Discuss the importance of quality assurance and good manufacturing practices.

#### 3. Reference Books:

- History of Pharmacy in India by Dr. Harikishan Singh
- Indian Pharmacopoeia, Govt. of India Publication
- A Text book of Pharmaceuticals Formulation by B.M. Mithal, Vallabh Prakashan.
- Bentleys' Text book of Pharmaceutics, Editor E.A. Rawlins, Elsevier Int.,

#### 4. Other Readings & Relevant Websites:

Sr.No.	Link of Journals, Magazines, Websites and Research Papers
1	<a href="https://www.ijpsm.com/">https:// www.ijpsm.com /</a>
2	<a href="https://www.ijisrt.com/">https:// www.ijisrt.com /</a>

3	<a href="http://doi.org/10.2147/DHPS.S282420">http://doi.org/10.2147/DHPS.S282420</a>
4	<a href="http://dx.doi.org/10.22270/ajprd.v9i3.955">http://dx.doi.org/10.22270/ajprd.v9i3.955</a>
5	<a href="https://www.researchgate.net/publication/5533900">https://www.researchgate.net/publication/5533900</a>
6	<a href="https://www.dixonvalve.com/">https://www.dixonvalve.com/</a>

### 5. Lab Plan:

Sr. No.	TOPICS	No. of Lectures
01	History of the profession of Pharmacy in India in relation to Pharmacy education, industry, pharmacy practice, and various professional associations. Pharmacy as a career Pharmacopoeia: Introduction to IP, BP, USP, NF and Extra Pharmacopoeia. Salient features of Indian Pharmacopoeia	7
02	Packaging materials: Types, selection criteria, advantages and disadvantages of glass, plastic, metal, rubber as packaging materials	5
03	Pharmaceutical aids: Organoleptic (Colouring, flavouring, and sweetening) agents Preservatives: Definition, types with examples and uses	3
04	Unit operations: Definition, objectives/applications, principles, construction, and workings of: Unit operations: Definition, objectives/applications, principles, construction, and workings of: Size reduction: hammer mill and ball mill Size separation: Classification of powders according to IP, Cyclone separator, Sieves and standards of sieves Mixing: Double cone blender, Turbine mixer, Triple roller mill and Silverson mixer homogenizer Filtration: Theory of filtration, membrane filter and sintered glass filter Drying: working of fluidized bed dryer and process of freeze drying Extraction: Definition, Classification, method, and applications	9
05	Tablets – coated and uncoated, various modified tablets (sustained release, extended-release, fast dissolving, multi layered, etc.)	8
	Capsules - hard and soft gelatine capsules	4
	Liquid oral preparations - solution, syrup, elixir, emulsion, suspension, dry powder for reconstitution	6
	Topical preparations - ointments, creams, pastes, gels, liniments and lotions, suppositories, and pessaries	8
	Nasal preparations, Ear preparations	2
	Powders and granules - Insufflations, dusting powders, effervescent powders, and effervescent granules	2
	effervescent powders, and effervescent granules	3
	Sterile formulations – Injectables, eye drops and eye ointments.	4
	Immunological products: Sera, vaccines, toxoids, and their manufacturing methods	6

### 6. Content Beyond Syllabus (CBS):

Sr.No.	Topics	PO (Annexure 1)
1)	To demonstrate the working of UV spectrophotometry instrumentation.	PO1, PO3, PO4

#### 7. Evaluation Scheme:

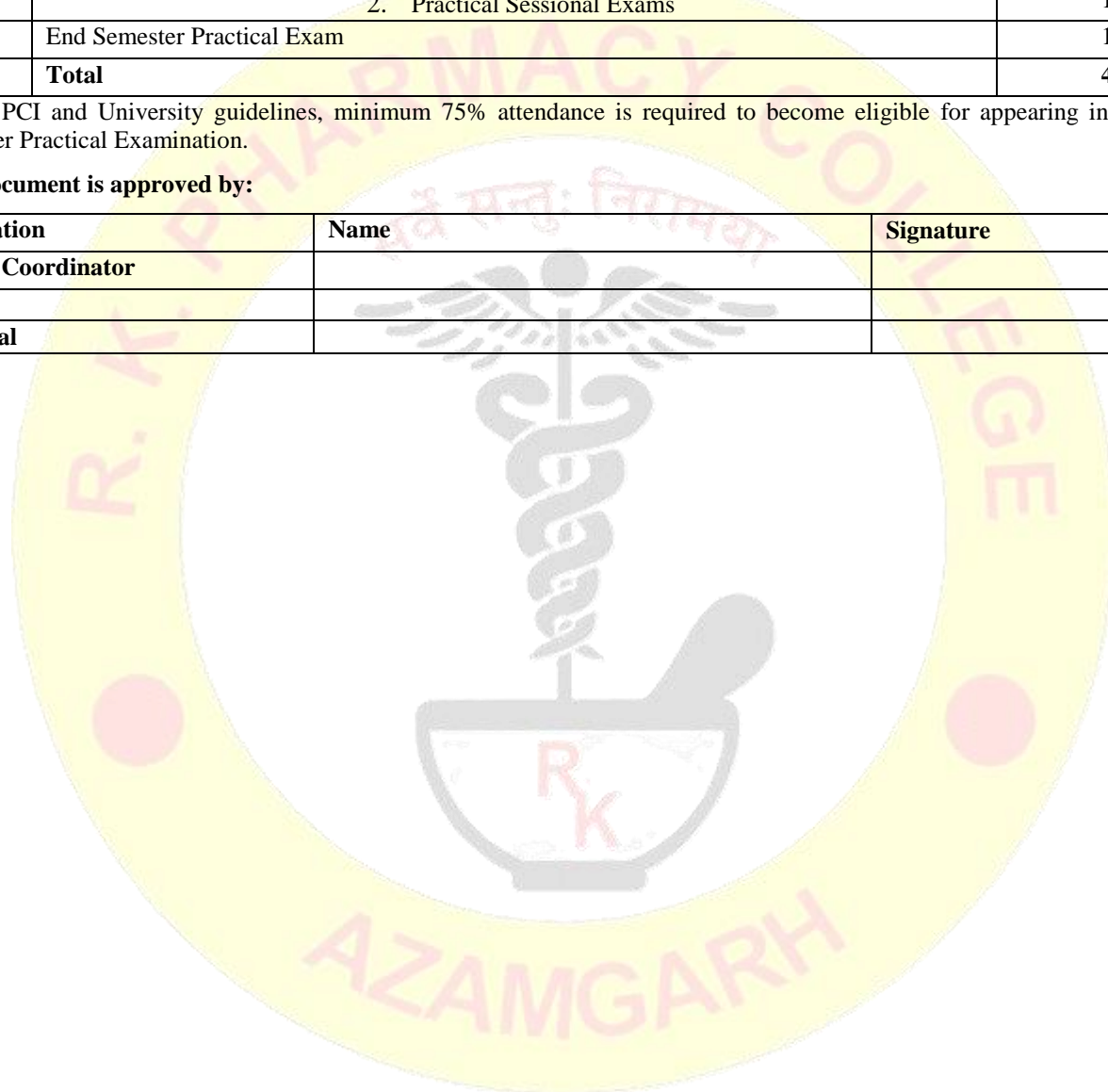
The marks allocated for the continuous mode of internal assessment shall be awarded for attendance, practical records, regular viva voce, etc. Two practical sessional exams shall be conducted during mid of the semester. The average marks of the two practical sessional exams shall be computed for internal assessment. A practical sessional exam shall be conducted for 40 marks and shall be computed for 10 marks. Weightage for various evaluation components is as below:

Sr.No.	Evaluation Component	Weightage
1	Internal Assessment 1. Continuous Mode 2. Practical Sessional Exams	15
		15
2	End Semester Practical Exam	10
	<b>Total</b>	<b>40</b>

As per PCI and University guidelines, minimum 75% attendance is required to become eligible for appearing in the End Semester Practical Examination.

**This document is approved by:**

Designation	Name	Signature
Course Coordinator		
HOD		
Principal		



## ANNEXURE I: PROGRAM OUTCOMES

1. **Pharmacy knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
  2. **Planning abilities:** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
  3. **Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
  4. **Modern tool usage:** Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
  5. **Leadership skills:** Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and wellbeing.
  6. **Professional identity:** Understand, analyze and communicate the value of their professional roles in society (e.g., health care professionals, promoters of health, educators, managers, employers, employees).
  7. **Pharmaceutical ethics:** Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
  8. **Communication:** Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
  9. **The pharmacist and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.
  10. **Environment and sustainability:** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.
- 11.

