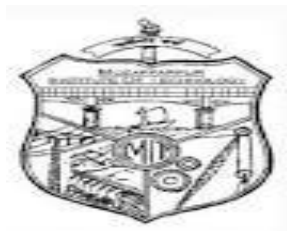


**DEPARTMENT OF PHARMACY**

**M.I.T., MUZAFFARPUR**



**AFFILIATED TO**

**ARYABHATTA KNOWLEDGE UNIVERSITY, MITHAPUR, PATNA**

**PHARMACEUTICS-VI**

**DEPARTMENT OF PHARMACY**

**NAME OF FACULTY: ABHILASHA**

**GUEST ASSISTANT PROFESSOR**

**DEPARTMENT OF PHARMACY,**

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**NAME OF COURSE: PHARMACEUTICS III**

**COURSE CODE (T): 1505**

**COURSE CODE (P): 1505P**

**SEMESTER: V<sup>TH</sup>**

**ACADEMIC: 2018-2019**

## **COURSE DESCRIPTIONS: PHARMACEUTICS -VI**

### **B. PHARM – FIFTH SEMESTER**

#### 1. Course Syllabus

##### Module-1

**Organization and Structure:** Organization of a hospital and hospital pharmacy, Responsibilities of a hospital pharmacist, Pharmacy and therapeutic committee, Budget preparation and Implementation.

**Hospital Formulary:** Contents, preparation and revision of hospital formulary.

##### Module-2

**Drug Store Management and Inventory Control:**

(a) Organization of drug store, Types of materials stocked, storage conditions.

(b) Purchase and Inventory Control principles, purchase procedures, Purchase order, Procurement and stocking.

**Drug distribution Systems in Hospitals:**

(a) Out-patient dispensing, methods adopted.

(b) Dispensing of drugs to in-patients. Types of drug distribution systems. Charging policy, labeling.

(c) Dispensing of drugs to ambulatory patients.

(d) Dispensing of controlled drugs.

##### Module-3.

**Central Sterile Supply Unit and their Management:** Types of materials for sterilization, packing of materials prior to sterilization, sterilization equipments, Supply of sterile materials.

.

**Manufacture of Sterile and Nonsterile Products:** Policy making of manufactural items, demand and costing, personnel requirements, manufacturing practice, Master formula Card, production control, manufacturing records.

Module-4.

**Drug Information Services:** Sources of Information on drugs, disease, treatment schedules, procurement of information, Computerized services (e.g., MEDLINE), Retrieval of information, Medication error.

**Records and Reports:** Prescription filling, drug profile, patient medication profile, cases on drug interaction and adverse reactions, idiosyncratic cases etc.

Module-4.

**Nuclear Pharmacy:** Introduction to Radio-pharmaceuticals, radio-active half-life, Units of radio-activity Production of radio-pharmaceuticals, methods of isotopic tagging, preparation of radio-isotopes in laboratory using radiation dosimeters, radio-isotope generators, Permissible radiation dose level, Radiation hazards and their prevention, specifications for radio-active laboratory.

### **Recommended Books:**

1. Hospital Pharmacy-Hassan WE, Lec and Febiger Publication.
2. Text book of Hospital Pharmacy-Allowood MC and Blackwell,
3. Remington: The Science & Practice of Pharmacy, Lippincott Williams & Wilkins.
4. Collet & Aulton, Eds. : "Pharmaceutical Practice," ELBS

5. Owunwanne, Patel, and Sadek: “The Hand Book of Radiopharmaceuticals,” Chapman & Hall.
6. Shroff : “Professional Pharmacy,” 1st ed., Part I (Ethics) & Part III (Hospital Pharmacy), Five Star Enterprises.
7. Aulton, Ed. : “Pharmaceutics –The Science of Dosage Form Design,” ELBS,
8. Text Book of Hospital Pharmacy,” Blackwell Scientific Publications.
9. Merchant & Qadry : “Text Book of Hospital Pharmacy,” Shah Prakashan.
10. Chittion & Witcofski : “Nuclear Pharmacy,” Lea & Febiger. Aiiwodd & Fell

## 2. Program Objectives (POs)

The graduates of the programme will possess:

1. The knowledge of organization and structure of hospital and hospital pharmacy and hospital formulary.
2. The knowledge of drug store management and drug distribution systems in hospital.
3. Brief knowledge about central sterile supply and manufacture of sterile and non-sterile products.
4. Brief knowledge about drug information services and records and reports.
5. The knowledge of radio pharmacy and radio pharmaceuticals.

## 3. Course Outcomes (COs)

1. Recall The knowledge of hospital and hospital pharmacy.
2. Gain The knowledge of drug store and distribution system.
3. Gain brief knowledge about sterile and non- sterile products.

4. Brief knowledge of nuclear pharmacy and drug information services.
5. Knowledge of records and reports of prescription filling.

#### 4. Mapping of COs with Pos

| PO | CO1 | CO2 | CO3 | CO4 |
|----|-----|-----|-----|-----|
| 1  |     |     |     |     |
| 2  |     |     |     |     |
| 3  |     |     |     |     |
| 4  |     |     |     |     |
| 5  |     |     |     |     |
| 6  |     |     |     |     |
| 7  |     |     |     |     |
| 8  |     |     |     |     |
| 9  |     |     |     |     |
| 10 |     |     |     |     |
| 11 |     |     |     |     |
| 12 |     |     |     |     |

#### 5. Assessment Methods for Cos

##### 5.1. Theory

| S. No | Assessment Tools      | Marks | Outcomes    |
|-------|-----------------------|-------|-------------|
| 1     | Sessional Examination | 20    | CO1 CO2 CO3 |

|   |                        |    |                    |
|---|------------------------|----|--------------------|
|   |                        |    | CO4                |
| 2 | Assignment             | 02 | CO1 CO2 CO3<br>CO4 |
| 3 | Presentation           | 02 | CO1 CO2 CO3<br>CO4 |
| 4 | Quizzes                | 01 | CO1 CO2 CO3<br>CO4 |
| 5 | Attendance             | 05 | NA                 |
| 6 | University Examination | 70 | NA                 |

## 5.2. Practical

| S. No | Assessment Tools          | Marks | Outcomes           |
|-------|---------------------------|-------|--------------------|
| 1     | Attendance                | 05    | CO1 CO2 CO3<br>CO4 |
| 2     | Experiment valuation      | 10    | CO1 CO2 CO3<br>CO4 |
| 3     | Internal Viva- voce       | 05    | CO1 CO2 CO3<br>CO4 |
| 4     | University Practical Exam | 30    | CO1 CO2 CO3<br>CO4 |

## 6. Delivery Methodology

| Outcomes | Methods   | Supporting Tools                    |
|----------|---|-------------------------------------|
| CO 1     | Chalk-Talk, Interactive classroom, ICT usage, Case study discussion about | Board, Laptop, Projector, You Tube, |

|     |   |   |
|-----|---|---|
|     | diseases, Group discussions, Web based learning   | WhatsApp, Google,                                     |
| CO2 | Chalk-Talk, Interactive classroom, ICT usage, Case study discussion about diseases, Group discussions, Web based learning | Board, Laptop, Projector, You Tube, WhatsApp, Google, |
| CO3 | Chalk-Talk, Interactive classroom, ICT usage, Case study discussion about diseases, Group discussions, Web based learning | Board, Laptop, Projector, You Tube, WhatsApp Google,  |
| CO4 | Chalk-Talk, Interactive classroom, ICT usage, Case study discussion about diseases, Group discussions, Web based learning | Board, Laptop, Projector, You Tube, WhatsApp, Google, |

## 7. Teaching plan

### 7.1. Theory

| Lecture No. | Date of Delivery | Contents                                       |
|-------------|------------------|--|
| 1           |                  | Organisation of hospital and hospital pharmacy |
| 2           |                  | Responsibilities of hospital pharmacist        |
| 3           |                  | Pharmacy and therapeutic committee             |
| 4           |                  | Budget preparation and implementation          |
| 5           |                  | Hospital Formulary Contents                    |

|    |  |  |
|----|--|--|
| 6  |  | Preparation of hospital formulary.   |
| 7  |  | Revision of hospital formulary.  |
| 8  |  | Organization of drug storage.  |
| 9  |  | Types of materials stocked, storage conditions.  |
| 10 |  | Purchase and Inventory Control principles.   |
| 11 |  | Purchase procedures and Purchase order.  |
| 12 |  | Procurement and stocking.  |
| 13 |  | Types of materials for sterilization.  |
| 14 |  | packing of materials prior to sterilization  |
| 15 |  | sterilization equipments   |
| 16 |  | Supply of sterile materials.   |
| 17 |  | Policy making of manufactural items  |
| 18 |  | Demand and costing   |
| 19 |  | Personnel requirements, manufacturing practice   |
| 20 |  | Master formula Card, production control, manufacturing records.  |
| 21 |  | Sources of Information on drugs.   |
| 22 |  | Disease, treatment schedules, procurement of information   |
| 23 |  | Computerized services (e.g., MEDLINE), Retrieval of information, Medication error.   |
| 24 |  | Prescription filling, drug profile, patient medication profile, cases on drug interaction and adverse reactions, idiosyncratic cases |
| 25 |  | Drug profile.  |
| 26 |  | patient medication profile   |
| 27 |  | cases on drug interaction and adverse reactions  |
| 28 |  | Idiosyncratic cases  |
| 29 |  | Introduction to Radio-pharmaceuticals, radio-active half-  |



|    |  |   |
|----|--|---|
|    |  | life, Units of radio-activity Production of radio-pharmaceuticals, methods of isotopic tagging, preparation of radio-isotopes in laboratory using radiation dosimeters, radio-isotope generators, Permissible radiation dose level, Radiation hazards and their prevention, specifications for radio-active laboratory. |
| 30 |  | Radio-active half-life  |
| 31 |  | Units of radio-activity Production of radio-pharmaceuticals,  |
| 32 |  | methods of isotopic tagging, preparation of radio-isotopes in laboratory using radiation dosimeters   |
| 33 |  | radio-isotope generators  |
| 34 |  | Permissible radiation dose level  |
| 35 |  | Radiation hazards and their prevention  |
| 36 |  | specifications for radio-active laboratory.   |
| 37 |  | Overview and application of nuclear pharmacy  |
| 38 |  |   |
| 39 |  |   |
| 40 |  |   |
| 41 |  |   |
| 42 |  |   |

## 7.2. Practical

| Exp. No | Experiment |
|---------|------------|
|         |            |

|    |  |
|----|--|
| 1  | To Sterilize of surgical dressings, glassware, surgical instrument by autoclaving method.  |
| 2  | To evaluate the given sample of absorbent cotton for acidity and alkanity identification and surface active substances as per i.p. (1996). |
| 3  | Sterilization of glassware by hot air oven   |
| 4  | Sterilization of surgical instruments by dry heat method ( hot air oven)   |
| 5  | Testing of water for injection as raw material used in freezed transfusion method.   |
| 6  | To prepare 1000 ml of sodium chloride (0.9% w/v).  |
| 7  | To prepare 1000ml dextrose (5% w/v) injection I.P. (1996).   |
| 8  | To prepare 1000 ml of compound sodium chloride injection IP (1996).  |
| 9  | To prepare 100 ml of sodium chloride injection IP (1996).  |
| 10 |  |
| 11 |  |
| 12 |  |