



**JCDM COLLEGE OF PHARMACY  
SIRSA  
DEPARTMENT OF PHARMACEUTICS  
Course: Diploma in Pharmacy**

**LESSON PLAN**

**Faculty Name: Ms. Komal**  
**Class: D. Pharmacy – Ist Year**

**Subject: Pharmaceutics-I**  
**Subject Code: ER**

**Scope:**

This course is designed to impart knowledge on the medicinal uses of various drugs of natural origin. Also, the course emphasizes the fundamental concepts in the evaluation of crude drugs, alternative systems of medicine, nutraceuticals, and herbal cosmetics.

**Course Objectives:**

This course will discuss the following aspects of drug substances derived from natural resources.

1. Occurrence, distribution, isolation, identification tests of common phytoconstituents
2. Therapeutic activity and pharmaceutical applications of various natural drug substances and phytoconstituents
3. Biological source, chemical constituents of selected crude drugs and their therapeutic efficacy in common diseases and ailments
4. Basic concepts in quality control of crude drugs and various systems of medicines
5. Applications of herbs in health foods and cosmetics

**Course Outcomes:**

Upon successful completion of this course, the students will be able to

1. Identify the important/common crude drugs of natural origin
2. Describe the uses of herbs in nutraceuticals and cosmeceuticals
3. Discuss the principles of alternative system of medicines
4. Describe the importance of quality control of drugs of natural origin.

**Number of Lectures: 75**

**Each Lect. Time: 01 hour**

| Lecture No                            | Particular                           | Remark/ Date |
|---------------------------------------|--------------------------------------|--------------|
| <b>Unit -1:- Introduction (7 hrs)</b> |                                      |              |
| 1                                     | Definition, History                  |              |
| 2                                     | Scope of Pharmacy, pharmacy practice |              |
| 3                                     | Pharmacy education, industry         |              |
| 4                                     | Various professional associations    |              |
| 5                                     | Pharmacy as a career                 |              |

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|--|--|--|
| 6  | Introduction to IP, BP, USP Pharmacopoeia.                       |  |
| 7  | Salient feature of Indian Pharmacopoeia.                         |  |
| <b>CLASS TEST</b>                            |  |  |
| <b>Unit -2 Packaging Materials (5 hours)</b> |  |  |
| 8  | Types, selection criteria  |  |
| 9  | Advantages & disadvantages of Glass                              |  |
| 10   | Advantages & disadvantages of plastic                            |  |
| 11   | Advantages & disadvantages of metal                              |  |
| 12   | Advantages & disadvantages of rubber                             |  |
| <b>Unit-3 Pharmaceutical Aids (3 hrs)</b>    |  |  |
| 13   | Organoleptic (colouring, flavouring agents)                      |  |
| 14   | Sweetening agents, preservatives                                 |  |
| 15   | Types and uses of preservatives                                  |  |
| <b>Unit-4 Unit Operations (9 hrs)</b>        |  |  |
| 16   | Size reduction, hammer mill and ball mill                        |  |
| 17   | Size separation, powder classification Cyclone separator, Sieves |  |
| 18   | Mixing- double cone blender, turbine mixer                       |  |
| 19   | Triple roller mill, silverson homogenizer                        |  |
| 20   | Filtration- Theory, membrane filter                              |  |
| 21   | Drying- Fluidized bed dryer                                      |  |
| 22   | Drying- Freeze drying, Extraction introduction                   |  |
| 23   | Extraction- classification & applications.                       |  |
| <b>Unit-5</b>                                |  |  |
| <b>Tablets (6 hrs)</b>                       |  |  |
| 24   | Tablets- Introduction  |  |
| 25   | Types of tablets   |  |
| 26   | advantages & disadvantages                                       |  |
| 27   | Coated and uncoated tablets                                      |  |
| 28   | Sustained release tablets  |  |
| 29   | Extended release tablets   |  |
| 30   | Fast dissolving tablets  |  |
| 31   | Double layered tablets   |  |
| <b>Capsules (4 hrs)</b>                      |  |  |
| 32   | Capsules Introduction  |  |
| 33   | Types of capsules  |  |
| 34   | Hard gelatin capsules  |  |
| 35   | Soft gelatin capsules  |  |
| <b>Liquid Oral Preparations (6 hrs)</b>      |  |  |
| 36   | Solutions  |  |
| 37   | Syrups   |  |
| 38   | Elixir   |  |
| 39   | Emulsion   |  |
| 40   | Suspension   |  |
| 41   | Dry powder for reconstitution                                    |  |
| <b>Topical Preparations (8 hrs)</b>          |  |  |

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| 42   | Ointments                                  |  |
| 43   | Creams                                     |  |
| 44   | Pastes                                     |  |
| 45   | Gels                                       |  |
| 46   | Liniments                                  |  |
| 47   | Lotions                                    |  |
| 48   | Suppository                                |  |
| 49   | Pessaries                                  |  |
| <b>Nasal Preparations (2 hrs)</b>  |  |  |
| 50   | Nasal drops                                |  |
| 51   | Ear preparations                           |  |
| <b>Powders &amp; Granules (3 hrs)</b>  |  |  |
| 52   | Insufflations                              |  |
| 53   | Dusting powder                             |  |
| 54   | Effervescent powders & granules            |  |
| <b>Sterile Formulations (6 hrs)</b>  |  |  |
| 55   | Injectables, classification                |  |
| 56   | Formulation of injectables                 |  |
| 57   | Small volume parenterals                   |  |
| 58   | Large volume parenterals                   |  |
| 59   | Eye drops                                  |  |
| 60   | Eye Ointments                              |  |
| <b>Class Test</b>  |  |  |
| <b>Immunological Products (4 hrs)</b>  |  |  |
| 61   | Sera                                       |  |
| 62   | Vaccines                                   |  |
| 63   | Toxoids                                    |  |
| 64   | Manufacturing methods                      |  |
| <b>Unit 6 Basic structure Layout, Sections and activities of pharmaceutical manufacturing plant (5hrs)</b> |  |  |
| 65   | Basic structure, layout, sections of plant |  |
| 66   | Quality control, its steps and techniques  |  |
| 67   | Quality Assurance, Functions, Types        |  |
| 68   | GMP, Calibration concept                   |  |
| 69   | Validation and its types                   |  |
| <b>Unit 7 Novel Drug Delivery System (5 hrs)</b>   |  |  |
| 70   | Introduction and classification of NDDS    |  |
| 71   | Detailed study of classification           |  |
| 72   | IDDS, GRDDS                                |  |
| 73   | NPDDS                                      |  |
| 74   | Target Drug Delivery, ODDS                 |  |
| 75   | Advantages and Challenges                  |  |

Teacher In-charge

Academic In-charge

Principal

### Lesson plan

Name of the Faculty : Dr. Vipin Kumar  
 Discipline : D. Pharmacy  
 Year : 1<sup>st</sup> year  
 Subject : Pharmaceutical Chemistry

Lesson Plan Duration: 25 weeks (2022 - 2023)

| Week | Theory      |   | Practical     |   |
|------|-------------|---|---------------|---|
|      | Lecture Day |   | Practical day | Topic   |
| 1st  | 1           | Introduction to Pharmaceutical chemistry  | 1             | To study the instruments and glasswares used in Pharmaceutical Chemistry Lab          |
|      | 2           | Sources and types of errors               |               |   |
|      | 3           | Impurities in Pharmaceuticals             |               |   |
| 2nd  | 4           | Volumetric analysis                       | 2             | To prepare and standardize 1 M sodium hydroxide (NaOH) solution                       |
|      | 5           | Complexometric titration, redox titration |               |   |
|      | 6           | Test                                      |               |   |
| 3rd  | 7           | Gravimetric analysis                      | 3             | To prepare and standardize 1 M hydrochloric acid (HCl) solution.                      |
|      | 8           | Introduction of Inorganic Pharmaceuticals |               |   |
|      | 9           | Haematinics                               |               |   |
| 4th  | 10          | Gastro-intestinal Agents                  | 4             | To prepare and standardize 0.1 N potassium permanganate (KMnO <sub>4</sub> ) solution |
|      | 11          | Topical agents                            |               |   |
|      | 12          | Dental products                           |               |   |
| 5th  | 13          | Medicinal gases                           | 5             | To prepare and standardize 0.05 M disodium edetate (EDTA) solution                    |
|      | 14          | Test                                      |               |   |

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|      | 15 | Introduction to nomenclature of organic chemical systems with particular reference to heterocyclic compounds containing up to Three rings |    |  |
| 6th  | 16 | Introduction of Drugs Acting on Central Nervous System  | 6  | To prepare and standardize 0.1 M silver nitrate (AgNO <sub>3</sub> ) solution. |
|      | 17 | Anaesthetics  |    |  |
|      | 18 | Sedatives and Hypnotics   | 7  | To perform the assay of boric acid as per I.P.                                 |
| 7th  | 19 | Antipsychotics  |    |  |
|      | 20 | Anticonvulsants   |    |  |
|      | 21 | Anti-Depressants  |    |  |
| 8th  | 22 | Test and revision   | 8  | To perform the assay of sodium carbonate as per I.P.                           |
|      | 23 | Introduction of Drugs Acting on Autonomic Nervous System  |    |  |
|      | 24 | Sympathomimetic Agents  |    |  |
| 9th  | 25 | Adrenergic Antagonists  | 9  | To perform the assay of sodium carbonate.                                      |
|      | 26 | Sympathomimetic Antagonists revision  |    |  |
|      | 27 | Test  |    |  |
| 10th | 28 | Cholinergic Drugs and Related Agents  | 10 | To perform the assay of sodium bicarbonate as per I.P                          |
|      | 29 | Cholinergic Drugs and Related Agents  |    |  |
|      | 30 | Test  |    |  |
| 11th | 31 | Cholinergic Blocking Agents   | 11 | To perform the assay of ferrous sulphate.                                      |
|      | 32 | Synthetic Cholinergic Blocking Agents   |    |  |
|      | 33 | Test  |    |  |
| 12th | 34 | Anti-Arrhythmic Drugs   | 12 | To perform the assay of ferrous ammonium sulphate                              |
|      | 35 | Anti-Hypertensive Agents  |    |  |
|      | 36 | Anti-Hypertensive Agents  |    |  |
| 13th | 37 | Antianginal Agents basics   | 13 | To perform the assay of Mohr's salt.   |
|      | 38 | Antianginal Agents  |    |  |
|      | 39 | Revision  |    |  |
| 14th | 40 | Tsest   | 14 | To perform the assay of calcium gluconate as per I.P.                          |
|      | 41 | Diuretics basics  |    |  |
|      | 42 | Diuretics drugs   |    |  |

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| 15th | 43 | Test  | 15 | To perform the limit test for chlorides in the given sample (magnesium sulphate). |
|      | 44 | Insulin and Its Preparations                  |    |   |
|      | 45 | Hypoglycemic drugs                            |    |   |
| 16th | 46 | Test and revision                             | 16 | To perform the limit test for sulphates in the given sample (sodium bicarbonate). |
|      |    | Analgesic And Anti-Inflammatory Agents        |    |   |
|      |    | Nonsteroidal AntiInflammatory Agents (NSAIDs) |    |   |
|      |    | Revision and test                             |    |   |
|      |    | Introduction of Anti-Infective Agents         |    |   |
|      |    | Fungus basics                                 |    |   |
|      | 47 | Antifungal Agents                             |    |   |
|      | 48 | UTI basics                                    |    |   |
| 17th | 49 | Urinary Tract Anti-Infective Agents           | 17 | To perform the limit test for iron in the given sample (sodium chloride).         |
|      | 50 | Urinary Tract Anti-Infective Agents revision  |    |   |
|      | 51 | Test  |    |   |
| 18th | 52 | Anti-Tubercular Agents                        | 18 | To perform the limit test for heavy metals in the given sample (sodium chloride). |
|      | 53 | Revision and test                             |    |   |
|      | 54 | Antiviral Agents                              |    |   |
| 19th | 55 | Antiviral Agents revision                     | 19 | To perform the limit test for arsenic in the given sample (ammonium chloride).    |
|      | 56 | Malaria baics                                 |    |   |
|      | 57 | Antimalarials                                 |    |   |
| 20th | 58 | Test  | 20 | To perform modified limit test for chloride.                                      |
|      | 59 | Sulfonamides                                  |    |   |
|      | 60 | Introduction of Antibiotics                   |    |   |
| 21st | 61 | Tetracyclines                                 | 21 | To perform the identification test for magnesiui hydroxide.                       |
|      | 62 | Macrolides                                    |    |   |
|      | 63 | Miscellaneous drugs                           |    |   |
| 22nd | 64 | Revision                                      | 22 | To perform thr identification test for copper sulphate.                           |

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|      | 65 | Test   |    |  |
|      | 66 | Anti-Neoplastic Agents                                     |    |  |
| 23rd | 67 | Antimetabolites Anti-Neoplastic Agents                     | 23 | To check to acid-neutralizing capacity of aluminium hydroxide gel. |
|      | 68 | Vinblastine Sulphate, Cisplatin, Dromostanolone Propionate |    |  |
|      | 69 | Revision   |    |  |
| 24th | 70 | Test   | 24 | To prepare and submit boric acid.                                  |
|      | 71 | Assignment   |    |  |
|      | 72 | Assignment   |    |  |
| 25th | 73 | Revision   | 25 | To prepare and submit ferrous sulphate from iron.                  |
|      | 74 | Assignment   |    | Viva voice   |
|      | 75 | Revision   |    |  |



**JCDM COLLEGE OF PHARMACY**  
**SIRSA**  
**DEPARTMENT OF PHARMACOLOGY**  
**Course: Diploma in Pharmacy**

**LESSON PLAN**

**Faculty Name: Ms. Shveta Kamboj**

**Subject: PHARMACOGNOSY – THEORY**

**Class: D. Pharmacy – 1<sup>st</sup> Year**

**Subject Code: ER20-13T**

Scope: This course is designed to impart knowledge on the medicinal uses of various drugs of natural origin. Also, the course emphasizes the fundamental concepts in the evaluation of crude drugs, alternative systems of medicine, nutraceuticals, and herbal cosmetics.

Course Objectives: This course will discuss the following aspects of drug substances derived from natural resources.

1. Occurrence, distribution, isolation, identification tests of common phytoconstituents
2. Therapeutic activity and pharmaceutical applications of various natural drug substances and phytoconstituents
3. Biological source, chemical constituents of selected crude drugs and their therapeutic efficacy in common diseases and ailments
4. Basic concepts in quality control of crude drugs and various system of medicines
5. Applications of herbs in health foods and

Course Outcomes: Upon successful completion of this course, the students will be able to



1. Identify the important/common crude drugs of natural origin
2. Describe the uses of herbs in nutraceuticals and cosmeceuticals
3. Discuss the principles of alternative system of medicines
4. Describe the importance of quality control of drugs of natural origin

| <b>Lecture No</b>  | <b>Particular</b>                                    | <b>Remark/ Date</b> |
|--|--|---------------------|
| <b>Unit -1:- Introduction</b>  |  |                     |
| 1  | Definition, history, present status of Pharmacognosy |                     |
| 2  | scope of Pharmacognosy                               |                     |
| <b>Unit :- 2:- Classification of drugs</b>   |  |                     |
| 3  | Alphabetical and Taxonomical                         |                     |
| 4  | Morphological and Pharmacological                    |                     |
| 5  | Chemical Classification                              |                     |
| 6  | Chemo-taxonomical Classification                     |                     |
| <b>Unit 3:- Quality Control of Crude Drugs</b>   |  |                     |
| 7  | Introduction to Adulteration                         |                     |
| 8  | Different Methods of Adulterations                   |                     |
| 9  | Types of Adulterants and effects on drug quality     |                     |
| 10   | Evaluation of Crude drugs                            |                     |
| 11   | Evaluation of crude drugs                            |                     |
| 12   | Assignment and Class test                            |                     |
| <b>Unit 4 : - Brief outline of occurrence, distribution, isolation, identification tests</b>                                   |  |                     |
| 13   | Alkaloids types and classification                   |                     |
| 14   | Isolation and identification of Alkaloids.           |                     |
| 15   | Terpenoids types and classification                  |                     |
| 16   | Glycosides types and classification and Properties   |                     |
| 17   | volatile oils, tannins                               |                     |
| 18   | resins. And its properties .                         |                     |
| <b>Unit 5: - Biological source, chemical constituents and therapeutic efficacy of the following categories of crude drugs.</b> |  |                     |

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|-----------|--|--|
| <b>19</b> | Biological source, chemical constituents and therapeutic efficacy of the Laxatives Aloe, Castor oil, Ispaghula, Senna                                |  |
| <b>20</b> | Biological source, chemical constituents and therapeutic efficacy of the Cardiotonic Digitalis, Arjuna   |  |
| <b>21</b> | Biological source, chemical constituents and therapeutic efficacy of the Carminatives and G.I. regulators Coriander, Fennel, Cardamom, Ginger, Clove |  |
| <b>22</b> | TEST   |  |
| <b>23</b> | Biological source, chemical constituents and therapeutic efficacy of the Carminatives and G.I. regulators Black Pepper, Asafoetida, Nutmeg, Cinnamon |  |
| <b>24</b> | Biological source, chemical constituents and therapeutic efficacy of the Astringents Myrobalan, Black Catechu, Pale Catechu                          |  |
| <b>25</b> | Biological source, chemical constituents and therapeutic efficacy of the Drugs acting on nervous system Hyoscyamus, Belladonna, Ephedra, Opium       |  |
| <b>26</b> | TEST   |  |
| <b>27</b> | Biological source, chemical constituents and therapeutic efficacy of the Drugs acting on nervous system Tea leaves, Coffee seeds, Coca               |  |
| <b>28</b> | Biological source, chemical constituents and therapeutic efficacy of the Anti-hypertensive Rauwolfia   |  |
| <b>29</b> | Biological source, chemical constituents and therapeutic efficacy of the Anti-tussive Vasaka, Tolu Balsam  |  |
| <b>30</b> | TEST   |  |
| <b>31</b> | Biological source, chemical constituents and therapeutic efficacy of the Anti-rheumatics Colchicum seed  |  |
| <b>32</b> | Biological source, chemical constituents and therapeutic efficacy of the Anti-tumour Vinca, Podophyllum  |  |
| <b>33</b> | Biological source, chemical constituents and therapeutic efficacy of the Antidiabetics Pterocarpus, Gymnema  |  |
| <b>34</b> | TEST   |  |
| <b>35</b> | Biological source, chemical constituents and therapeutic efficacy of the Diuretics Gokhru, Punarnava   |  |
| <b>36</b> | Biological source, chemical constituents and therapeutic efficacy  |  |

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|---|--|--|
|   | of the Anti-dysenteric Ipecacuanha   |  |
| 37  | Biological source, chemical constituents and therapeutic efficacy of the Antiseptics and disinfectants Benzoin, Myrrh, Neem, Turmeric  |  |
| 38  | Test   |  |
| 39  | Biological source, chemical constituents and therapeutic efficacy of the Antimalarials Cinchona, Artemisia   |  |
| 40  | Biological source, chemical constituents and therapeutic efficacy of the Oxytocic Ergot Vitamins Cod liver oil, Shark liver oil  |  |
| 41  | Biological source, chemical constituents and therapeutic efficacy of the Enzymes Papaya, Diastase, Pancreatin, Yeast   |  |
| 42  | Biological source, chemical constituents and therapeutic efficacy of the Pharmaceutical Aids Kaolin, Lanolin, Beeswax, Acacia, Tragacanth, Sodium alginate, Agar, Guar gum, Gelatine |  |
| 43  | Biological source, chemical constituents and therapeutic efficacy of the   |  |
| 44  | Biological source, chemical constituents and therapeutic efficacy of the Miscellaneous Squill, Galls, Ashwagandha, Tulsi, Guggu  |  |
| 45  | Test   |  |
| <b>UNIT:-6:-Plant fibres used as surgical dressings</b>                                     |  |  |
| 46  | Plant fibres used as surgical dressings: Cotton, silk, wool and regenerated fibres Sutures –   |  |
| 47  | Plant fibres used as surgical dressings:– Surgical Catgut and Ligatures  |  |
| <b>UNIT:- 7:- Basic principles involved in the traditional systems of medicine</b>          |  |  |
| 48  | Basic principles involved in the traditional systems of medicine like: Ayurveda, Siddha, Unani and Homeopathy  |  |
| 49  | Method of preparation of Ayurvedic formulations like: Arista, Asava.   |  |
| 50  | Method of preparation of Ayurvedic formulations like: Gutika, Taila,   |  |
| 51  | Method of preparation of Ayurvedic formulations like: Lehya and Bhasma   |  |
| 52  | Assignments  |  |
| <b>UNIT:- 8:-</b>   |  |  |
| <b>Role of medicinal and aromatic plants in national economy and their export potential</b> |  |  |
| 53  | Role of medicinal and aromatic plants in national economy and their export potential   |  |
| 54  | Test   |  |
| <b>UNIT:- 9:-Herbs as health food:</b>  |  |  |
| 55  | Herbs as health food: Brief introduction and therapeutic applications of: Nutraceuticals   |  |

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| 56   | Herbs as health food: Brief introduction and therapeutic applications of: Antioxidants                                       |  |
| 57   | Herbs as health food: Brief introduction and therapeutic applications of: Pro-biotics  |  |
| 58   | Assignment   |  |
| 59   | Herbs as health food: Brief introduction and therapeutic applications of: Dietary fibres, Omega-3-fatty acids.               |  |
| 60   | Herbs as health food: Brief introduction and therapeutic applications of Spirulina, Carotenoids.                             |  |
| 61   | Herbs as health food: Brief introduction and therapeutic applications of: Soya and Garlic                                    |  |
| 62   | Assignment and test  |  |
| <b>UNIT:- 10&amp; 11:- Introduction to herbal formulations</b> |  |  |
| 63   | Introduction to herbal formulations  |  |
| 64   | Herbal cosmetics: Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of: Aloe vera gel   |  |
| 65   | Herbal cosmetics: Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of: Almond oil      |  |
| 66   | Herbal cosmetics: Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of: Lavender oil    |  |
| 67   | Herbal cosmetics: Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of: Olive oil       |  |
| 68   | Assignment and test  |  |
| 69   | Herbal cosmetics: Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of: Rosemary oil    |  |
| 70   | Herbal cosmetics: Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of: Sandal Wood oil |  |
| 71   | Assignment and test  |  |
| <b>UNIT:- 12:- Phytochemical investigation of drugs</b>        |  |  |
| 72   | Phytochemical investigation of drugs   |  |
| 73   | Phytochemical investigation of drugs   |  |
| 74   | Phytochemical investigation of drugs   |  |
| 75   | Assignment   |  |
| 76   | Revision   |  |

Teacher In-charge

Academic In-charge

Principal



**JCDM COLLEGE OF PHARMACY  
SIRSA  
DEPARTMENT OF PHARMACOLOGY  
Course: Diploma in Pharmacy**

**LESSON PLAN**

**Faculty Name: Ms. Shweta Kamboj**

**Subject: Human Anatomy and Physiology**

**Class: D. Pharmacy – 1st Year**

**Subject Code: ER20-14T**

**Scope:** This course is designed to impart basic knowledge on the structure and functions of the human body. It helps in understanding both homeostasis mechanisms and homeostatic imbalances of various systems of the human body.

**Course Objectives:** This course will discuss the following:

1. Structure and functions of the various organ systems and organs of the human body
2. Homeostatic mechanisms and their imbalances in the human body
3. Various vital physiological parameters of the human body and their significances

**Course Outcomes:** Upon successful completion of this course, the students will be able to

1. Describe the various organ systems of the human body
2. Discuss the anatomical features of the important human organs and tissues
3. Explain the homeostatic mechanisms regulating the normal physiology in the human system
4. Discuss the significance of various vital physiological parameters of the human body

**Number of Lectures: 75**

**Each Lect. Time : 01 hour**

| Lecture No                                  | Particular                          | Remark/ Date |
|---|-------------------------------------|--------------|
| <b>Unit -1:- Introduction (2 hrs)</b>       |                                     |              |
| 1   | Scope of Anatomy and Physiology     |              |
| 2   | Definition of various terminologies |              |
| <b>Unit -2:- Structure of Cell: (2 hrs)</b> |                                     |              |
| 3   | Introduction to cell structure      |              |
| 4   | Components and its functions        |              |

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|  | <b>CLASS TEST</b>   |  |
| <b>Unit -3 :- Tissues of the human body: ( 4hrs)</b> |   |  |
| 5  | Tissues of the human body: Epithelial their sub-types and characteristics.        |  |
| 6  | Tissues of the human body: Connective- their sub-types and characteristics.       |  |
| 7  | Tissues of the human body: Muscular– their sub-types and characteristics.         |  |
| 8  | Tissues of the human body: Nervous tissues – their sub-types and characteristics. |  |
|  | <b>CLASS TEST</b>   |  |
| <b>Unit - 4:- Osseous system: (3 hrs)</b>            |   |  |
| 9  | Structure and functions of bones of axial skeleton                                |  |
| 10   | Structure and functions of bones of appendicular skeleton                         |  |
| 11   | Classification, types and movements of joints, disorders of joints                |  |
|  | <b>CLASS TEST</b>   |  |
| <b>Unit - 5:- Haemopoietic system (8 hrs)</b>        |   |  |
| 12   | Composition and functions of blood  |  |
| 13   | Process of Hemopoiesis  |  |
| 14   | Characteristics and functions of RBCs.  |  |
| 15   | Characteristics and functions of WBCs.  |  |
| 16   | Characteristics and functions of platelets  |  |
| 17   | Mechanism of Blood Clotting   |  |
| 18   | Introduction of Blood groups  |  |
| 19   | Importance of Blood groups  |  |
|  | <b>CLASS TEST</b>   |  |
| <b>Unit - 6:- Lymphatic system (3 hrs)</b>           |   |  |
| 20   | Lymph and lymphatic system, composition, function and its formation.              |  |
| 21   | Structure and functions of spleen.  |  |
| 22   | Structure and functions of lymph node.  |  |
|  | <b>CLASS TEST</b>   |  |
| <b>Unit – 7:- Cardiovascular system (8 hrs)</b>      |   |  |
| 23   | Anatomy and Physiology of heart   |  |
| 24   | Blood vessels   |  |
| 25   | Pulmonary circulation   |  |
| 26   | Coronary circulation  |  |
| 27   | systemic circulation  |  |
| 28   | Cardiac cycle and Heart sounds,   |  |

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| 29   | Basics of ECG  |  |
| 30   | Blood pressure and its regulation                                |  |
|  | <b>CLASS TEST</b>  |  |
| <b>Unit – 8:- Respiratory system (4 hrs)</b> |  |  |
| 31   | Anatomy of respiratory organs and their functions.               |  |
| 32   | Anatomy of respiratory organs and their functions.               |  |
| 33   | Mechanism of respiration.  |  |
| 34   | Respiratory volumes and capacities – definitions                 |  |
|  | <b>CLASS TEST</b>  |  |
| <b>Unit – 9:- Digestive system (8 hrs)</b>   |  |  |
| 35   | Anatomy of the GIT   |  |
| 36   | Anatomy of the GIT   |  |
| 37   | Physiology of the GIT  |  |
| 38   | Physiology of the GIT  |  |
| 39   | Anatomy accessory glands   |  |
| 40   | Functions of accessory glands                                    |  |
| 41   | Physiology of digestion  |  |
| 44   | Physiology of absorption   |  |
|  | <b>CLASS TEST</b>  |  |
| <b>Unit – 10 :- Skeletal muscles (2 hrs)</b> |  |  |
| 45   | Histology  |  |
| 46   | Physiology of muscle contraction<br>Disorder of skeletal muscles |  |
|  | <b>CLASS TEST</b>  |  |
| <b>Unit – 11:- Nervous system (8 hrs)</b>    |  |  |
| 47   | Classification of nervous system                                 |  |
| 48   | Anatomy and physiology of cerebrum,                              |  |
| 49   | Anatomy and physiology of cerebellum, mid brain                  |  |
| 50   | Function of hypothalamus, medulla oblongata and basal ganglia    |  |
| 51   | Spinal cord-structure and reflexes                               |  |
| 52   | Names and functions of cranial nerves                            |  |
| 53   | Anatomy and physiology of sympathetic nervous system (ANS)       |  |
| 54   | Anatomy and physiology of parasympathetic nervous system (ANS)   |  |
|  | <b>CLASS TEST</b>  |  |
| <b>Unit – 12:- Sense organs (5 hrs)</b>      |  |  |
| 56   | Anatomy and physiology of Ear                                    |  |
| 57   | Anatomy and physiology of Eye                                    |  |
| 58   | Anatomy and physiology of Eye                                    |  |
| 59   | Anatomy and physiology of Skin                                   |  |
| 60   | Anatomy and physiology of tongue                                 |  |
| 61   | Anatomy and physiology of Nose                                   |  |

|   |  |  |
|---|--|--|
|   | <b>CLASS TEST</b>                              |  |
| <b>Unit – 13 :- Urinary system (4 hrs)</b>                                  |  |  |
| 62  | Anatomy and physiology of urinary system       |  |
| 63  | Physiology of urine formation                  |  |
| 64  | Renin - angiotensin system                     |  |
| 65  | Clearance tests and micturition                |  |
|   | <b>CLASS TEST</b>                              |  |
| <b>Unit – 14 :- Endocrine system (Hormones and their functions) (6 hrs)</b> |  |  |
| 66  | Pituitary gland                                |  |
| 67  | Adrenal gland                                  |  |
| 68  | Thyroid gland                                  |  |
| 69  | parathyroid gland                              |  |
| 70  | Pancreas                                       |  |
| 71  | Gonads   |  |
|   | <b>CLASS TEST</b>                              |  |
| <b>Unit – 15 Reproductive system (4 hrs)</b>                                |  |  |
| 72  | Anatomy of male and female reproductive system |  |
| 73  | Physiology of menstruation                     |  |
| 74  | Spermatogenesis and Oogenesis                  |  |
| 75  | Pregnancy and parturition                      |  |

**Teacher In-charge**

**Academic In-charge**

**Principal**



**Lesson Plan**  
**Subject: Social Pharmacy**  
**Total Time: 75 Hrs**

| Chapter       | Topic  | Hours     | Date |
|---------------|--|-----------|------|
| <b>Unit 1</b> |  |           |      |
| Lecture 1     | Definition & Scope of Social Pharmacy as a discipline and its Scope in improving the public health     | <b>9</b>  |      |
| Lecture 2     | Role of pharmacist in Public health. Concept of health   |           |      |
| Lecture 3     | Definition, Various Dimensions, Determinants and health indicators                                     |           |      |
| Lecture 4     | National Health policy – Indian perspective  |           |      |
| Lecture 5     | Public and Private Health Systems in India.  |           |      |
| Lecture 6     | National Health Mission  |           |      |
| Lecture 7     | Introduction to Millenium Development Goals  |           |      |
| Lecture 8     | Introduction to Sustainable Development Goals  |           |      |
| Lecture 9     | Introduction to FIP Development Goals  |           |      |
| Lecture 10    | Assignment   |           |      |
| Lecture 11    | Test   |           |      |
| <b>Unit 2</b> |  |           |      |
| Lecture 1     | Demography and Family Planning   | <b>18</b> |      |
| Lecture 2     | Demography and Family Planning   |           |      |
| Lecture 3     | Demography and Family Planning   |           |      |
| Lecture 4     | Mother and Child Health  |           |      |
| Lecture 5     | Importance of Breast feeding, ill effects of Infants Milk Substitutes and Bottle feeding               |           |      |
| Lecture 6     | Overview of Vaccines   |           |      |
| Lecture 7     | Immunity and Terms used  |           |      |
| Lecture 8     | Types of Immunity  |           |      |
| Lecture 9     | Types of Immunization  |           |      |
| Lecture 10    | Effect of Environment on Health  |           |      |
| Lecture 11    | Water Pollution, importance of Safe Drinking water   |           |      |
| Lecture 12    | Water Borne Disease  |           |      |
| Lecture 13    | Air Pollution, Noise Pollution   |           |      |
| Lecture 14    | Sewage and Solid Waste Disposal  |           |      |
| Lecture 15    | Occupational Illness   |           |      |
| Lecture 16    | Environmental pollution due to Pharmaceuticals.  |           |      |
| Lecture 17    | Psychosocial Pharmacy: drugs of Misuse and abuse<br>Psychotropic, Narcotics, Alcohol, Tabaco Products. |           |      |
| Lecture 18    | Social Impacts of these Habits on Social Health and Productivity and suicidal behavior.                |           |      |
| Lecture 19    | Assignment   |           |      |
| Lecture 20    | Test   |           |      |
| <b>Unit 3</b> |  |           |      |
| Lecture 1     | Basics of Nutrition  | <b>10</b> |      |
| Lecture 2     | Macronutrients   |           |      |
| Lecture 3     | Micronutrients   |           |      |
| Lecture 4     | Importance of Water and Fibers In diet   |           |      |
| Lecture 5     | Balanced diet, Malnutrition and Nutritioin deficiency diseases.  |           |      |
| Lecture 6     | Ill effects of junk food, calorific and Nutritive values of various foods.                             |           |      |
| Lecture 7     | Fortification of Food  |           |      |
| Lecture 8     | Introduction to food safety, adulteration of food, effects of artificial ripening, use of pesticides,  |           |      |
| Lecture 9     | Dietary supplements, Nutraceuticals, food supplements – indications, benefits                          |           |      |
| Lecture 10    | Drug-Food Interactions   |           |      |
| Lecture 11    | Assignment   |           |      |
| Lecture 12    | Test   |           |      |

**Lesson Plan**  
**Subject: Social Pharmacy**  
**Total Time: 75 Hrs**

| <b>Unit 4</b> |   |           |  |
|---------------|---|-----------|--|
| Lecture 1     | Introduction to Microbiology and common microorganisms  | <b>28</b> |  |
| Lecture 2     | Introduction to Microbiology and common microorganisms  |           |  |
| Lecture 3     | Introduction to Microbiology and common microorganisms  |           |  |
| Lecture 4     | Epidemiology: Introduction to epidemiology, and its applications. Understanding of terms such as epidemic, pandemic, endemic, mode of transmission, |           |  |
| Lecture 5     | Epidemiology: Outbreak, quarantine, isolation, incubation period, contact tracing, morbidity, mortality.  |           |  |
| Lecture 6     | Respiratory infections – rubella, mumps, diphtheria   |           |  |
| Lecture 7     | Respiratory infections- Ebola   |           |  |
| Lecture 8     | Respiratory infections- chickenpox, measles   |           |  |
| Lecture 9     | Respiratory infections- influenza (including Avian-Flu, H1N1, SARS, MERS, COVID-19)   |           |  |
| Lecture 10    | Respiratory infections- Whooping cough  |           |  |
| Lecture 11    | Respiratory infections- meningococcal meningitis  |           |  |
| Lecture 12    | Respiratory infections- Acute respiratory infections, tuberculosis  |           |  |
| Lecture 13    | Intestinal infections- cholera, acute diarrheal diseases  |           |  |
| Lecture 14    | Intestinal infections- worm infestations  |           |  |
| Lecture 15    | Intestinal infections- poliomyelitis  |           |  |
| Lecture 16    | Intestinal infections- viral hepatitis  |           |  |
| Lecture 17    | Intestinal infections- Amebiasis  |           |  |
| Lecture 18    | Intestinal infections- typhoid  |           |  |
| Lecture 19    | Intestinal infections- Food poisoning   |           |  |
| Lecture 20    | Arthropod-borne infections - dengue   |           |  |
| Lecture 21    | Arthropod-borne infections- malaria   |           |  |
| Lecture 22    | Arthropod-borne infections- Filariasis  |           |  |
| Lecture 23    | Arthropod-borne infections- chikungunya   |           |  |
| Lecture 24    | Surface infections – trachoma, tetanus  |           |  |
| Lecture 25    | Surface infections- leprosy   |           |  |
| Lecture 26    | Introduction to STDs  |           |  |
| Lecture 27    | Mechanism of Action of HIV Virus  |           |  |
| Lecture 28    | AIDS  |           |  |
| Lecture 29    | Assignment  |           |  |
| Lecture 30    | Test  |           |  |
| <b>Unit 5</b> |   |           |  |
| Lecture 1     | Introduction to health systems  | <b>08</b> |  |
| Lecture 2     | All ongoing National Health programs in India   |           |  |
| Lecture 3     | Objectives of National Health programs  |           |  |
| Lecture 4     | functioning of National Health programs   |           |  |
| Lecture 5     | Outcomes of National Health programs  |           |  |
| Lecture 6     | Role of pharmacists   |           |  |
| Lecture 7     | NTCP  |           |  |
| Lecture 8     | National Programme for prevention and control of cancer & Diabetes  |           |  |
| Lecture 9     | Assignment  |           |  |
| Lecture 10    | Test  |           |  |
| <b>Unit 6</b> |   |           |  |
| Lecture 1     | <b>Pharmacoeconomics – Introduction, basic terminologies</b>  | <b>02</b> |  |
| Lecture 2     | Pharmacoeconomics- Importance of Pharmacoeconomics  |           |  |
| Lecture 3     | Assignment  |           |  |
| Lecture 4     | Test  |           |  |