

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI (C.G.)

Year: 2nd

Subject Code: 3121213(041)

Subject: Pharmacy Practice-III

Branch/Discipline: Pharmacy

Scope:

Practicing pharmacists have opportunity to provide various patient care services to improve the patient's health in community settings through counseling, health screening services, and other education programs. In hospital settings, pharmacists can ensure appropriate dispensing, education to patient, and providing all hospital pharmacy services including clinical pharmacy services such as drug information and Pharmacovigilance.

Objectives:

Upon completion of the course, the student will be able to

- Understand the professional roles of pharmacists in community, hospital and clinical pharmacy areas.
- Understand the professional responsibilities of the pharmacists.
- Provide the intended services.

Course duration:

Learning

40 hours of learning by blending teaching. Blending teaching includes didactic and onsite learning.

Assignments

Each student should complete **two assignments** covering therapeutics and pharmacy practice concepts and will be evaluated at the time Final Examination.

Detailed syllabus and Lecture wise program

1. Drugs and Poison Information	-	06 hrs
(a) Introduction to drug information resources available		
(b) Systematic approach in answering DI queries		
(c) Critical evaluation of drug information and literature		
(d) Preparation of written and verbal reports		
(e) Establishing a Drug Information Centre		
(f) Poisons information- organization & information resources		
(g) Drug Information Bulletin		
2. Pharmacovigilance	-	05 hrs
(a) Scope, definition and aims of Pharmacovigilance		
(b) Adverse drug reactions - Classification, mechanism, predisposing factors, causality assessment [different scales used]		
(c) Reporting, evaluation, monitoring, preventing & management of ADRs		
(d) Role of pharmacist in management of ADR.		
3. Medication Errors - classification, consequences, prevention, and role of Pharmacist. Dispensing errors, and ways to minimize them.	-	03 hrs
4. Medication adherence - Consequences on non-adherence, role of pharmacist methods to improve adherence, compliance aids	-	03 hrs
5. Communication skills – verbal, written, Body language	-	03 hrs
6. OTC medications – definition, need, and role of Pharmacist. OTC medications in India, counseling for OTC products. Self medication and role of pharmacist in promoting safe self-medication.		02 hrs

7. Responding to symptoms/minor ailments

- 10 hrs

8. Relevant pathophysiology, common non-pharmacological and OTC drug therapy, and referral to doctor – in :Pain, GI disturbances (Nausea, Vomiting, Dyspepsia, diarrhea, constipation), Worm infestations, Pyrexia, Ophthalmic symptoms, URT infections, skin disorders, oral and dental disorders.

9. Hospital supplies –

- 7 hrs

- a. Surgical items/supplies – catheters, syringes & needles, I.v. sets, Ryle's tubes, Study of Wound management, stoma and incontinence products, Surgical dressing like cotton, gauze, bandages and adhesive tapes,
- b. sutures, ligatures,
- c. patient care equipment – nebulizers, thermometers, .

10. Veterinary Pharmacy – introduction and Role of pharmacist in procurement and distribution of veterinary medicines

- 4 hrs

Books and references

Suggested topics for assignments

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI (C.G.)

Year: 2nd

Subject Code: 3121214(041)

Subject: Pharmacy Practice-IV

Branch/Discipline: Pharmacy

Scope:

Practicing pharmacists have opportunity to provide various patient care services to improve the patient's health in community settings through counseling, health screening services, and other education programs. In hospital settings, pharmacists can ensure appropriate dispensing, education to patient, and providing all hospital pharmacy services including clinical pharmacy services such as drug information and Pharmacovigilance.

Objectives:

Upon completion of the course, the student will be able to

- e) Understand the professional roles of pharmacists in community, hospital and clinical pharmacy areas.
- f) Understand the professional responsibilities of the pharmacists.
- g) Provide the intended services.

Course duration:

Learning

40 hours of learning by blending method. Blending method includes didactic and onsite learning.

Assignments

Each student should complete **two assignments** covering therapeutics and pharmacy practice concepts and will be evaluated at the time Final Examination.

Detailed syllabus and lecture wise program

1. Health Accessories - 05 Hrs

Study and handling of various common health accessories handled in hospital and community pharmacy. Student should have working knowledge, uses and cautions in using these. (Wheel Chairs, Canes, Crutches, and other orthopedic aids, Bed Pans, Vaporizers, Syringes and Needles, Hot water Bottles, Clinical Thermometers, Trusses, First Aid Supplies, Family Medicine Cabinet, etc.

2. Medical gases – different gases and their use, coding and care of cylinders, delivery of gases to various parts of hospital, domiciliary oxygen services, and role of pharmacist

- 3 hrs

3. I.V admixture services and role of Pharmacist

- 3 hrs

4. Total Parenteral Nutrition – Definition, composition and clinical use of TPN

2 hrs

5. Clinical Research - 12 hrs

Introduction to Clinical trials

Various phases of clinical trial.

Methods of post marketing surveillance

Abbreviated New Drug Application submission

Good Clinical Practice – ICH, GCP,

- Central drug standard control organisation (CDSCO) guidelines, Schedule Y

-Composition, responsibilities, procedures of IRB / IEC

Role and responsibilities of clinical trial personnel as per ICH GC

a. Sponsor

b. Investigators

c. Clinical research associate

d. Auditors

e. Contract research coordinators

f. Regulatory authority

Designing of clinical study documents (protocol, CRF, ICF, PIC with assignment)

Informed consent Process

6. Introduction to Biostatistics	-	3 hrs
7. Research in pharmacy practice areas.		
8. Continuing education for pharmacists	-	1 hr
9. Compounding of Pharmaceuticals in the hospital/community pharmacy. Weights and measures, calculations involving percentage solutions, allegation, proof spirit, Isotonic solutions. Bulk compounding in hospitals, pre-packaging.	-	3 Hr
10. Manufacturing of Pharmaceutical Formulations in hospital – various aspects, current status	-	3 hrs
11. Radiopharmaceuticals – Handling and Packaging, clinical usage, and role of pharmacist	-	2 hrs
12. Applications of IT and computers in pharmacy practice	-	2 hrs
13. Provision of cytotoxic chemotherapy, and various considerations/handling. Handling of cytotoxic waste and disposal.		
Pharmaceutical (Medicines and allied products) waste management in hospitals, community pharmacy, and the community and the role of the pharmacist.	-	3Hr
14. Medical Devices & I.V. pumps		
15. Individualised medicines, Gene therapy, Genomics & proteomics, Biochips, biosensors and MEMS micro electro mechanical systems	-	2 Hr

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI (C.G.)

Year: 2nd

Subject Code: 3121216(041)

Subject: Pharmaceutical Jurisprudence

Branch/Discipline: Pharmacy

Scope:

A profession becomes successful when it is guided with suitable laws. This course describes about the Pharmacy Act, Drugs and Cosmetics Act, Dangerous drugs act, Medicinal and Toilet preparation act, DPCO and Professional ethics.

Course Objectives:

Upon completion of the course the student shall be able to

1. Understand various concepts of the pharmaceutical legislation in India
2. Know various rules drafted in Drug and Cosmetic Act, Pharmacy Act, NDPS Acts, relevant to pharmacy practice.
3. Know the Consumer Protection Act, PFA Act, DPCO,.
4. Understand the labeling requirements and packaging guidelines for drugs and cosmetics

Course duration:

Learning

40 hours of learning by blended teaching. Blended teaching method includes didactic and onsite learning.

Assignments

Each student should complete **two assignments** covering therapeutics and pharmacy practice concepts and will be evaluated at the time Final Examination.

Detailed syllabus and Lecture wise Program

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|--|---------------|
| 1. A brief review of Pharmaceutical legislations. | 01 hr |
| A Study of various pharmaceutical and related legislations with more emphasis on aspects relevant to community & hospital pharmacy practice in India. Study the aspects only from practical angle, with examples, case studies, etc.: | |
| 2. Drugs and Cosmetics Act-1940 and Rules 1945 | 15 hrs |
| <ul style="list-style-type: none">• Duties & Responsibilities of Drug Inspectors, other officers, and obligations of the pharmacy to them• Brief about DTAB, DCC, Drug testing laboratories• Various drug licences for retail pharmacy, requirements to start a pharmacy/medical store, application forms, issue of licence, display of licences, duration of licences, laws related to stocking, handling and sale of drugs and devices• Various schedules under the Act & Rule – study in brief –those relevant to pharmacy practice• Labelling requirements of drugs – various aspects• Spurious, misbranded, adulterated, counterfeit drugs – various aspects related to this, how to recognize, role of the pharmacist• Import of drugs for personal use• Various documents to be maintained under the Act & Rules by a pharmacy• Storage requirements, handling expired goods• Various punishments under the Act• Practical study of Prescription and non-prescription drugs, market samples, examine for labeling, etc. | |

- Laws relating to various traditional systems/ medicines approved in India
- Banning of drugs

3. Pharmacy Act – 1948	-	03 hrs
4. Medicinal and Toilet Preparation Act-1955	-	04 hrs
5. Narcotic Drugs and Psychotropic Substances Act – 1985	-	04 hrs
6. Drugs and Magic Remedies (Objectionable Advertisements) Act and Rules, 1954	-	02 hrs
7. Essential Commodities Act	-	02 hrs
8. Drugs Prices Control Order	-	02hrs.
9. Prevention of Cruelty to Animals Act, 1960	-	02 hrs
10. Consumer Protection Act , 1986	-	02 hrs
11. Prevention of Food Adulteration Act & Rules, laws relating to Dietary Supplements, Food supplements, etc	-	02 Hrs
12. The Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Amendment Act, 2003	-	02 Hrs

Books and references

Year: 2nd

Subject Code:

Subject: Social Pharmacy-II

Branch/Discipline: Pharmacy

Scope:

Practicing pharmacists have opportunity to provide various patient care services to improve the patient's health in the society. By monitoring the health of the individuals, providing them education about health, precautions, and pharmacists can improve their professional image.

Objectives:

Upon completion of the course, the student will be able to

- Understand the social responsibility of the pharmacists in the society
- Provide professional services to the patients.

Course duration:

Learning

40 hours of learning by blending method. Blending method includes didactic and onsite learning.

Assignments

Each student should complete **two assignments** covering therapeutics and pharmacy practice concepts and will be evaluated at the time Final Examination.

Syllabus and lecture wise programme

A. Preventive care:

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| 1. Vaccines, and immunizations – and Role of Pharmacist | & | 2 hours |
| 2. Role of Pharmacist in Demography & Family Planning | - | 2 hours |
| 3. Mother and child health, importance of breastfeeding, ill effects of formula foods and bottle feeding, and role of Pharmacist | - | 4 hours |
| 4. Geriatrics and role of Pharmacist | - | 1 hour |
| 5. Effect of Environment on Health & Role of Pharmacist – Water pollution, safe supply of water, | | 1 hour |
| 6. Occupational diseases/illnesses and Role of Pharmacist | - | 1 hours |
| 7. Mental Health and role of Pharmacist | - | 1 hours |
| 8. Psychosocial Pharmacy : Drugs of misuse and abuse – psychotropic and narcotics, and other pharmaceuticals and chemicals, tobacco and tobacco products, alcohol. Social & psychosocial impact of these, role of pharmacist in reducing, preventing the menace. | | |
| Tobacco cessation and role of pharmacist | - | 3 Hr |
| 9. Palliative/terminal care and role of pharmacist in handling psychosocial issues - | | 3Hr |
| 10. Care for disabled and role of pharmacist in handling psychosocial issues | - | 2 Hr |
| 11. Early intervention in hereditary diseases, screening tests | - | 1 hour |

B. Nutrition and health :

- Basics of nutrition – Macronutrients and Micronutrients, fibre – importance, sources (Plant and animal origin),
- Calorific and nutritive values of various foods
- Daily/recommended dietary allowance and functions of each. Balanced diets – for various individual groups. Nutrition deficiency diseases
- Food as a medicine. Brief study of various concepts of Naturopathy.
- Nutrition as per Ayurveda – Ayurvedic outlook to diets – as per prakruti, seasons, seasonal

- availability of foods, etc. Prakruti study in brief.
6. Wrong/improper foods and food habits, causes of various disease conditions, ill effects of wrong foods/fast foods, timed foods, etc – Western foods as well as Indian foods – reasons for wrong effects on body.
 7. Basics of genetically modified foods – advantages, disadvantages
 8. Effects of environment on foods, artificial ripening, hybridization, use of pesticides, adulteration, etc.
 9. Nutrition/dietary recommendation for different disease conditions – e.g. diabetes, blood pressure, Hyperlipidemia, arthritis, renal disease, liver disease, allergies, etc.
 10. Artificial sweeteners, zero calorie concept, glycemic index of foods
 11. Dietary supplements, nutraceuticals, food supplements – legal standing, indications, rational use, benefits, ADRs, Drug Interactions, pharmacoeconomics.

C. First Aid Services in Community Pharmacy

-10 Hr hours

RECOMMENDED BOOKS

1. Clinical Pharmacy and Therapeutics - Roger and Walker, Churchill Livingstone Publication
2. Pharmacotherapy: A Pathophysiologic Approach - Joseph T. Dipiro et al. Appleton & Lange
3. Clinical Pharmacy and Therapeutics - Eric T. Herfindal, Williams and Wilkins Publication
4. Applied Therapeutics: The Clinical Use of Drugs. Lloyd Young and Koda-Kimble MA]
5. Text Book of Hospital Pharmacy by Quadry and Merchant.
6. Text Book of Clinical Pharmacy Practice. Edt. G. Parthasarathi, Karin Nyfort Hansen and Milap. C.Nahata. Orient Longman Publications.
7. Text Book of Community Pharmacy Practice. RPSGB Publication.
8. Community Pharmacy Handbook- Jonathan Waterfield
9. Community Pharmacy: Symptoms, Diagnosis and Treatment: Paul Rutter
10. Minor Illness in Major Diseases-the Clinical Manifestation in the Community: Paul Stillman
11. Sociology for Pharmacist: Tayler, Nettleton, Harding
12. Pharmacy Practice: Tayler, Harding
13. Social Pharmacy: Tayler, Geoffery
14. Stockley's Drugs Interaction: Karen Baxter
15. Cooper and Gunn : Dispensing for Pharmacy Students.
16. A text book Professional Pharmacy by N. K. Jain and S. N. Sharma.
17. Introduction to Pharmaceutical dosage forms by Howard C. Ansel.
18. Remington's Pharmaceutical Sciences
19. D.M. Brahmkar and Sunil B Jaiswal. Text Book of Biopharmaceutics and Pharmacokinetics – A treatise. Vallabh Prakashan. Delhi.
20. Biopharmaceutics by Swarbrick
21. Bio pharmaceutics and Clinical Pharmacokinetics by Milo Gibaldi.
22. Mithal , B M. Textbook of Forensic Pharmacy. Calcutta : National; 1988.

23. Singh, KK, Editor. Beotra's the Laws of Drugs, Medicines & Cosmetics. Allahabad: Law Book House;1984.
24. Jain, NK. A Textbook of Forensic Pharmacy. Delhi: Vallabh Prakashan ; 1995.
25. Reports of the Pharmaceutical Enquiry Committee
26. I.D.M.A., Mumbai. DPCO 1995
27. Various Reports of Amendments.
28. Deshapande, S.W. The Drugs and Magic Remedies Act, 1954 and Rules 1955. Mumbai: SusmitPublications; 1998.
29. Eastern Book Company. The Narcotic and Psychotropic Substances Act, 1985, Lucknow: Eastern; 1987.
30. Drug Information About Commonly Used Drugs: P.P.Sharma, R.Sing.

Year: 2nd

Subject Code: 3121211(041)

Subject: Pathophysiology and Pharmacotherapeutics-III

Branch/Discipline: Pharmacy

Scope:

Practicing pharmacists will have opportunity to review the case notes or prescriptions in their practice setting and able to identify and resolve the drug related problems. This will ensure the improved patient care and decreases the unnecessary health care expenditure.

Objectives: 3121211(041)

Upon completion of the course, the student will be able to

- (a) Understand the anatomy and physiology of the respective system
- (b) Understand the disease process
- (c) Know the signs and symptoms of the disease.
- (d) Appreciate the various therapeutic regimens with their advantages and disadvantages

Course duration:

Learning

40 hours of learning by blended teaching. Blended teaching includes didactic and onsite learning.

Case Presentations

During the course each student should present **5 cases** covering the diseases prescribed in the syllabus.

Assignments

Each student should complete **two assignments** covering therapeutics and pharmacy practice concepts and will be evaluated at the time Final Examination.

Detailed syllabus and Lecture wise schedules

1. Infectious diseases:

- 25 Hours

- (a) Guidelines for the rational use of antibiotics and surgical Prophylaxis.
- (b) Pathophysiology and Pharmacotherapeutics of Tuberculosis, Meningitis, Respiratory tract infections, Gastroenteritis, Endocarditis, Septicemia, Urinary tract infections, Protozoal infection-Malaria, HIV & Opportunistic infections, Fungal infections, Viral infections, Gonorrhoea and Syphilis

2 Musculoskeletal disorders

- 08 Hrs

- (a) Basics of Anatomy and physiology of musculoskeletal system.
- (b) Pathophysiology and Pharmacotherapeutics of Rheumatoid arthritis, Osteoarthritis, Gout, Spondylitis, Systemic Lupus Erythematosus

3 Renal system

- 07 Hrs

- a) Basics of anatomy and physiology of Renal system
- b) Pathophysiology and pharmacotherapeutics of Acute Renal Failure, Chronic Renal Failure, Renal Dialysis, Drug induced renal disorders

Books/References:

Suggested Assignments:

Year: 2nd

Subject Code: 3121212(041)

Subject: Pathophysiology and Pharmacotherapeutics-IV

Branch/Discipline: Pharmacy

Scope:

Practicing pharmacists will have opportunity to review the case notes or prescriptions in their practice setting and able to identify and resolve the drug related problems. This will ensure the improved patient care and decreases the unnecessary health care expenditure.

Objectives:

Upon completion of the course, the student will be able to :

- Understand the anatomy and physiology of the respective system
- Understand the disease process
- Know the signs and symptoms of the disease.
- Appreciate the various therapeutic regimens with their advantages and disadvantages

Course duration:

Learning

40 hours of learning by blended teaching. Blended teaching includes didactic and onsite learning.

Case Presentations

During the course each student should present **5 cases** covering the diseases prescribed in the syllabus.

Assignments

Each student should complete **two assignments** covering therapeutics and pharmacy practice concepts and will be evaluated at the time Final Examination.

Detailed Syllabus and Lecture Wise Program

- | | | |
|--|--------------------------------|---------------|
| 1. Oncology: | - | 15 Hrs |
| Basic principles of Cancer therapy, General introduction to cancer chemotherapeutic agents, Chemotherapy of breast cancer, leukemia. Management of chemotherapy induced nausea and emesis | | |
| 2. Dermatology: | - | 7 Hrs |
| (a) Pathophysiology and Pharmacotherapeutics of Psoriasis, Scabies, Eczema, Impetigo | | |
| 3. Women's Health | - | 10 Hrs |
| (a) Physiology of Menstrual Cycle | | |
| (b) Contraception – Physical Methods, Chemical Methods, IUDs, and Permanent methods.
Disorders related to Menstrual Cycle – Polycystic ovary Syndrome, Dysmenorrhea, Premenstrual Syndrome. | | |
| (c) Obstetric Drug Therapy – Trimesters of Pregnancy, Common complaints of Pregnancy and their management – nausea, vomiting, reflux esophagitis, Diabetes mellitus, Hypertension and Preeclampsia, FDA Categorisation of drugs in Pregnancy | | |
| (d) Menopause – signs and symptoms and Management | | |
| 4. Elements of anatomy and Physiology of Vision Etiopathogenesis, diagnostic techniques, clinical manifestations and pharmacotherapeutics of diseases associated with Eye such as | | |
| (a) Glaucoma | | |
| (b) | Infectious ophthalmic diseases | - 3hrs |

Books and references

Suggested topics for assignment.