PHT 102: PHARMACY CAREERS B

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2025
Units:	4
Hours:	4 lecture per week (48 total per quarter)
Prerequisite:	PHT 101.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- Calculate and utilize the required ingredients for compounding pharmaceutical products from the various physician orders.
- Calculate conversions utilizing metric, apothecary, household systems with exact and approximate equivalents as appropriate.
- Demonstrate understanding and implement skills needed to effectively and competently perform a technician job in an ambulatory pharmacy when controlling inventory functions, prescription processing and dispensing.
- Identify common pathophysiology of the Endocrine, Gastrointestinal, Reproductive, systems and prescription/non-prescription remedies, side effects and dosages of treatment
- Interpret, read, write, communicate and define medical and pharmaceutical terminology as used in hospital pharmacy.
- Utilize common pharmaceutical measuring, weighing and compounding devices to compound various medication formulations.

Description

The second of three courses to be taken in series; intended for students enrolled in the CTE Pharmacy Careers Pathway Program. This course recognizes the diverse range of knowledge, learning styles, and life/work experiences of the entry-level student. Topics of instruction build on content in the following areas; pharmacy law, dosage forms and calculations, pharmaceutical abbreviations, basic anatomy, physiology, and medical terminology pertaining to the gastrointestinal, endocrine, and reproductive systems, including diseases and medications used to treat conditions that affect these systems in diverse patient populations.

Course Objectives

The student will be able to:

1. Demonstrate a working knowledge of drug dosages, routes of administration, and dosage forms.
2. Demonstrate skill in the operation of common pharmaceutical measuring, weighing, and compounding devices.
3. Accurately use the metric, apothecary, avoirdupois, and household systems to count and measure.
4. Read and write proper medical notation on the drug order.
5. Interpret and compare information on drug labels.
6. Select proper containers for packaging of pharmaceutical preparations.
7. Properly compound, label, and document solid and liquid pharmaceutical products.
8. Demonstrate the ability to follow established guidelines for manually or electronically generating accurate and complete labels.
9. Demonstrate the ability to follow protocol to assemble appropriate patient information materials.
10. Demonstrate the ability to count or measure the product and place in the proper container.
11. Demonstrate the ability to complete the necessary records and documents.
12. Demonstrate the ability to calculate the charge for the prescription.
13. Identify the five pregnancy risk categories.
14. Describe all schedules of controlled substances.
15. Identify methods of record keeping, dispensing, and inventory of controlled substances.
16. Explain the Five Rights of medication administration.
17. Define, interpret, communicate, and apply pharmaceutical and medical terminology, abbreviations and symbols.
18. Define, interpret, communicate, and apply medical terminology for the gastrointestinal system, endocrine system, reproductive systems.
19. Describe the basic anatomy and pathophysiology of the gastrointestinal system.
20. Identify common prescription and non-prescription medication and remedies for the treatment of disease states correlated with the gastrointestinal system.
21. Describe the basic anatomy and pathophysiology of the endocrine system.
22. Identify common prescription and non-prescription medication and remedies for the treatment of disease states correlated with the endocrine system.
23. Describe the basic anatomy and pathophysiology of the reproductive system.
24. Identify common prescription and non-prescription medication and remedies for the treatment of disease states correlated with the reproductive system.
25. Gain a better understanding of the skills and scope of practice of other healthcare professionals in relation to the field of pharmacy.
26. Strengthen their understanding of and demonstrate effective communication with other allied health professions.
27. Utilize various modes of communication when interacting with a pediatric, adult, and geriatric patient.
28. Calculate the oral dosages of drugs, both solid and liquid forms, using ratio-proportion and formula.
29. Utilize and understand system of measurements.
30. Perform calculations and conversions utilizing metric, apothecary, and household systems, utilizing exact and approximate equivalents as appropriate.

Course Content

1. General drug information
    a. Dosage forms
    b. Routes of administration
    c. Importance of route of administration
2. Review basic measuring systems
    a. Metric
    b. Apothecary
    c. Avoirdupois
    d. Household
3. Equipment used in measuring, weighing, and compounding of solids, semi-solids, and liquids
    a. Practice in weighing and measuring solids and liquids
    b. Equipment and supplies used for dispensing pharmaceuticals
4. Practical dispensing
    a. Medication orders
        i. Patient profile
        ii. Product identification
            1. Label
            2. Auxiliary labels
        iii. Medical notation
        iv. Notation specifying dosage, route, and frequency of medication
5. Drug labels
    a. Brand and generic names
    b. Strengths
    c. Forms
    d. Total volume
    e. Directions for mixing
    f. Route of administration
    g. Manufacturer name and lot number
    h. Expiration date
    i. Auxiliary labels
6. Packaging of pharmaceutical preparations
    a. Quantity
    b. Volume
    c. Formulation
    d. Light sensitivity
    e. Child safety cap
    f. Specialized container
7. Compounding solid and liquid pharmaceuticals
8. Manual or electronic generation of labels
    a. Required information
9. Patient information
    a. Drug information sheet
    b. Pharmacist medication counseling
10. Dispensing protocols
    a. Selecting appropriate container
    b. Measuring volume or counting accurately
11. Record keeping
    a. State law requirements
    b. Federal law requirements
12. Calculations for dispensing fees, copays, and difference pricing
    a. Dispensing fess
    b. Determination of copay
    c. Difference pricing
13. Pregnancy risk categories
    a. Pregnancy Category A
    b. Pregnancy Category B
    c. Pregnancy Category C
    d. Pregnancy Category D
    e. Pregnancy Category X
    f. Pregnancy Category NR
14. Controlled substances
    a. Schedule I, II, III, IV, and V
    b. General requirements and types of drugs
    c. Receiving, storage, and sale
15. Filling controlled substances
    a. Schedule II prescriptions
    b. Schedule III, IV, and V prescriptions
    c. Inventory policy for controlled substances
    d. Transfer of controlled substances
        i. Methods of transfer of Schedule II drugs among registrants
        ii. Transfer of Schedule III, IV, and V drugs among registrants
        iii. Execution of Form 222
16. Five Rights of Medication Administration
    a. The right patient
    b. The right drug
    c. The right dose
    d. The right route
    e. The right time
17. Pharmaceutical terminology
    a. Prefixes and suffixes
    b. Nomenclature
    c. Pharmaceutical abbreviations in relation to hospital pharmacy
    d. Miscellaneous hospital pharmaceutical abbreviations
    e. Application of hospital pharmaceutical abbreviations
18. Medical terminology
    a. The gastrointestinal system
        i. Prefixes and suffixes
        ii. Abbreviations
    b. The endocrine system
        i. Prefixes and suffixes
        ii. Abbreviations
    c. The reproductive system
        i. Prefixes and suffixes
        ii. Abbreviations
19. The gastrointestinal system
    a. Form and function of the GI system
    b. Anatomy and physiology of the GI system
        i. Ingestion
        ii. Absorption
        iii. Excretion
        iv. Auxiliary organ functions
    c. Conditions affecting the GI system

i. Conditions associated with the stomach
    1. GERD
    2. Peptic Ulcer Disease
ii. Conditions associated with the intestines
    1. Inflammatory Bowel Disease
    2. Ulcerative Colitis
    3. Diarrhea
    4. Constipation
    5. Flatulence
iii. Misc conditions of the GI system
    1. Nausea and vomiting
    2. Colorectal cancer

20. Common therapeutic agents used to treat conditions of the GI system
    a. GERD
    b. Peptic Ulcer Disease
    c. Inflammatory Bowel Disease
    d. Ulcerative Colitis
    e. Diarrhea
    f. Constipation
    g. Flatulence
    h. Nausea and vomiting
    i. Colorectal cancer
21. The endocrine system
    a. Anatomy of the endocrine system
    b. Structure and function of glands and hormones
        i. Hypothalamus
        ii. Pituitary gland
        iii. Pineal gland
        iv. Thyroid gland
        v. Parathyroid gland
        vi. Adrenal glands
        vii. Pancreas
        viii. Ovaries
        ix. Testes
    c. Conditions of the pituitary gland and hypothalamus
        i. Syndrome of inappropriate antidiuretic hormone secretion
        ii. Diabetes Insipidus
        iii. Hypopituitarism
        iv. Hypersecretion of growth hormone
    d. Conditions of the thyroid gland
        i. Hyperthyroidism
        ii. Hypothyroidism
    e. Conditions of the parathyroid glands
        i. Hyperparathyroidism
        ii. Hypoparathyroidism
    f. Conditions of the adrenal glands
        i. Cushing's Disease
        ii. Hyperaldosteronism
        iii. Addison's Disease
        iv. Adrenal medulla tumor
    g. Conditions of the pancreas
        i. Diabetes Mellitus
            1. Type 1
            2. Type 2
            3. Gestational Diabetes
22. Common therapeutic agents used to treat conditions of the endocrine system
    a. Diabetes Insipidus
    b. Hypopituitarism
    c. Hypersecretion of growth hormone
    d. Hyperthyroidism
    e. Hypothyroidism
    f. Hyperparathyroidism
    g. Hypoparathyroidism
    h. Cushing's Disease
    i. Hyperaldosteronism
    j. Addison's Disease
    k. Adrenal medulla tumor
    l. Diabetes Mellitus
        i. Type 1
        ii. Type 2
        iii. Gestational Diabetes
23. The reproductive system
    a. Anatomy and physiology of the female reproductive system
    b. Conditions affecting the female reproductive system
        i. Menstrual disorders
        ii. Female Hypogonadism
        iii. Infertility
        iv. Contraception
        v. Menopause
        vi. Pelvic Inflammatory Disease
    c. The anatomy of the male reproductive system
    d. Conditions affecting the male reproductive system
        i. Male Hypogonadism
        ii. Benign Prostatic Hypertrophy
        iii. Prostate cancer
    e. Sexually transmitted infections
24. Common therapeutic agents used to treat conditions of the reproductive system
    a. Menstrual disorders
    b. Female Hypogonadism
    c. Infertility
    d. Contraception
        i. Oral contraceptives
        ii. IUD
        iii. Injection
        iv. Transdermal patch
        v. Vaginal ring
        vi. Implantable devices
        vii. Other forms of contraceptive
    e. Menopause
    f. Pelvic Inflammatory Disease
    g. Male Hypogonadism
    h. Benign Prostatic Hypertrophy
    i. Prostate cancer

j. Sexually transmitted infections
    i. Antibiotics
    ii. Antivirals
25. Scope of practice of various healthcare professionals
    a. Duties, licensing, skills
    b. Working effectively with the healthcare team
26. Issues related to communication in healthcare environment with various healthcare team members
    a. Verbal and non-verbal communication
    b. Interprofessional communication
    c. Patient confidentiality and privacy
27. Patient issues related to communication in the healthcare environment
    a. Pediatric patients
        i. Management and communication with pediatric patients and family members
        ii. Team approach to pediatric patient care
        iii. Referral and consultation protocols for the pediatric patient
    b. Adult patients with other needs
        i. Health literacy
        ii. Language barriers and using an interpreter
        iii. Culturally competent healthcare
    c. Geriatric patients
        i. Management and communication with geriatric patients and family members
        ii. Team approach to geriatric patient care
        iii. Referral and consultation protocols for the geriatric patient
28. Mathematical functions
    a. Percents
        i. Relationship between percents and decimals
        ii. Convert percents to decimals and vice versa
    b. Exponents and scientific notation
        i. Express numbers given in exponential form as whole numbers
        ii. Express large numbers in scientific notation
29. Systems of measurement
    a. Units of measurement and abbreviations of the metric system
    b. Units of measurement and abbreviations of the apothecary system
    c. Units of measurement and abbreviations of the household system
    d. Units of measurement and abbreviations of Milli-equivalents, Units, and International Units
30. Calculating and converting equivalents and temperature
    a. Interpreting prescriptions and converting household, apothecary, and metric measurements
        i. Apothecary, metric, and household systems conversions
        ii. Utilizing exact and approximate equivalents
    b. Converting between different temperature scales and calculations with density and specific gravity
        i. Fahrenheit to Celsius and vice versa
        ii. Density formula and calculation
        iii. Specific gravity
        iv. Perform pharmacy calculations using specific gravity

Lab Content

Not applicable.

Special Facilities and/or Equipment

1. Textbooks, charts, worksheets
2. Audio visual aids, pharmacy clinical sites
3. Library with generalized and specialized references
4. Multimedia classroom
5. Computer access
6. Specialized pharmacy equipment

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Objective and comprehensive exams
Quizzes
Reflections journal
Written research paper
Oral presentation
Class discussion participation
Individual and group assessments
Cooperative/interactive learning assignments
Projects
Computer activities
Case studies
Worksheets

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture presentations and classroom discussion
Small group recitation sessions to discuss concepts
Cooperative/interactive learning exercises
Online modules utilizing software programs
Demonstration and class activities
Individual or group presentations regarding research topics followed by in-class discussion and evaluation

Representative Text(s) and Other Materials

Perspective Press. The Pharmacy Technician, 7th ed.. 2020.

Powers, Mary F., and David R. Bright. Pharmacy Calculations, 6th ed.. 2020.

Instructor-generated materials: PowerPoint slides, worksheets, class activities.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Weekly reading assignments from text and outside sources ranging from 10-20 pages per week
2. Weekly lecture covering subject matter from text assignment with extended topic information along with class discussion
3. Review of handouts and relevant reading material

4. Participating in critical thinking and case study exercises
5. Exploring websites on related topics covered in lecture
6. Study Ware CD-ROM Student Study Activities
7. Completing review questions in textbook
8. Research and planning of individual projects
9. Completion of assigned online activities and projects
10. Individual reports (written and oral) based on research
11. Individual visitation of pharmacy
12. Reflection journal

Discipline(s)

Pharmacy Technology