Mt. San Jacinto College
Integrated Course Outline of Record

Form B

Submitted by: Peter Zografos **Date:** 12/08/2016

Department	Subject	Course Number	Title
Nursing	Nursing NURS	194	Pharmacology & Dosage Calculations for Nurses

Units/Hours

Each lecture unit requires 1 hour per week of class time, and 2 hours per week of study outside of class.
Each laboratory unit requires 3 hours per week of class time.
Each activity unit requires 2 hours per week of class time and 1 hour per week of study outside of class.

Lecture Units	Total Units
3.50	3.50

Lecture Contact Hours	Total Contact Hours
56.00 - 63.00	56.00 - 63.00

Lecture Homework Hours
112.00 - 126.00

Stand Alone:

Program Applicable

AA/AS Degree General Ed Breadth Area(s):

-none-

General Education Justification:

Maximum Enrollment: 40

Maximum Enrollment Justification:

Course requires significant individualized instruction or assessment â€“ check all that apply:

* Course relies on small group dynamics as a means of instruction or assessment.

Course has safety or compliance factors which influence the enrollment cap â€“ check all that apply:

* Course has safety or health reasons that the class should have a non-standard enrollment cap.
* Course has specific standards outside of the college

calling for a specific or capped class size.

*** Course has an advisory panel or an external accreditor which recommends or requires a specific teacher to student ratio.**

Justification: This course ensures that students are able to safely administer medications by accurately documenting doses, drug classifications, side effects, pharmacodynamics and pharmacokinetics or assigned medications.

Grading Method: Letter Grade or P/NP

TOP code: 1230.10*

Can be Taken 1 **time(s) for credit** (max 4)

- Visual or Performing Arts course that is required to meet major requirements for UC/CSU
- Intercollegiate athletics course
- Academic/vocational competition course

Catalog Description:

(Please do not refer to transferability or degree, certificate, or employment concentration applicability. Please only describe the course).
(**75 words** or less in gray box below).

This course provides nursing students with a methodical approach for calculating medication dosages, selecting and administering drugs, and monitoring the patient's response to drug therapy. Content includes general principles of pharmacology, legal, ethical, and safety aspects of medication administration and drug calculations. Drug information includes pharmacotherapeutics, pharmacodynamics, pharmacokinethics, contraindications and precautions, adverse side effects and drug interactions. Also includes patient variables (health status, life span/gender, diet, lifestyle/habits, environment, and culture in relationship to drug therapy).

Schedule Description:

(Please do not refer to transferability or degree, certificate, or employment concentration applicability. Please only describe the course).
(**25 words** or less in gray box below).

This course provides nursing students with a methodical approach for calculating medication dosage, selecting and administering drugs, and monitoring the patient's response to drug therapy.

Need for the course:

A required course for the MSJC Associate Degree Registered Nursing Program as mandated by the California Board of Registered Nursing.

Prerequisite(s):

Prerequisites go through a separate approval process. See Forms E1-E6 for details.
(For further clarification, contact the Prerequisite Subcommittee)

- Admission to the Associate Degree Nursing Program.

Corequisite(s):

Corequisites go through a separate approval process. See Forms E1-E6 for details.

-none-

Recommend Preparation:

Recommended Preparation goes through a separate approval process. See Forms E1-E6 for details.

-none-

Other Enrollment Criteria:

-none-

Learning Objectives:

(please number each objective and express in behavioral terms)

Upon the completion of the course the student will be able to do the following:

1. Utilize the nursing process and general pharmacological principles to plan the care for patients receiving drug therapy.
2. Verbalize correct administration of medications utilizing the 6 rights of medication administration.
3. Perform basic mathematical computations essential for calculating drug dosages.
4. Utilizing the prototype approach, evaluate drug properties including pharmacotherapeutics, pharmacodynamics, pharmacokinetics, contraindications and precautions, adverse effects of drug used to prevent and treat pathological conditions.
5. Relate the interaction between physical properties of a drug and patient variables that influence drug therapy.
6. Determine key points for patient and family education for patients receiving drug therapy.
7. Identify federal and state legislative standards and policies regulating the development, preparation, and administration of drugs.
8. Compare and contrast the differences between chemical, generic, and trade names.

Course Content:

(please number the outline of main topics and subtopics)

1. Principles and Process of Nursing Management in Drug Therapy
    1. Nursing Management in Drug Therapy
    2. Development, Safeguards, and Delivery Options of Medications
        1. History and Sources of Drug
        2. Drug Nomenclature
        3. Sources of Drug Information
        4. Safeguards in Drug Development and Delivery
        5. Legislation for Drug Safety and Efficacy
        6. Clinical Trials
        7. Legislation Regarding controlled substances
        8. Safeguards That Protect the Unborn
        9. Impact of Legal and Institutional controls on Implementation of Drug therapy
        10. Patient Education as a Safeguard in Drug Therapy
    3. Drug Preparations and Administration
    4. Drug Calculations
2. Core Drug Knowledge
    1. Pharmacotherapeutics
    2. Pharmacokinetics
        1. Absorption
        2. Distribution
        3. Metabolism
        4. Excretion
    3. Pharmacodynamics
    4. Contraindications/Precautions
    5. Adverse Effects

6. Drug Interactions
    1. Drug-drug
    2. Drug-food
    3. Drug-lab tests
3. Core Patient Variables
    1. Health Status
    2. Life Span.
        1. Children
        2. Pregnant or breast-feeding women
        3. Older adults
    3. Lifestyle, Diet, and Habits
    4. Environment
        1. Influences on drug therapy
    5. Cultural Considerations in Drug Therapy
4. Nursing Responsibilities for Patients Receiving Peripheral Nervous System Drugs
    1. Drugs Affecting Adrenergic Function
    2. Drugs Affecting Cholinergic Function
5. Nursing Responsibilities for patients Receiving Central Nervous System Drugs
    1. Drugs Producing Anesthesia
    2. Neuromuscular Blocking Agents
    3. Anxiolytics, Sedatives, and Hypnotics
    4. Drugs for Treating Mood disorders
    5. Drugs for Treating Thought Disorders
    6. Drugs for Treating Seizure Disorders
    7. Drugs Affecting Muscle Spasm and Spasticity
    8. Drugs for Treating Parkinson’s Disease and other movement disorders
    9. CNS Stimulants
6. Nursing Responsibilities for Patients Receiving Drugs Used to control Pain and Inflammation
    1. Opioid Analgesics
    2. Salicylates
    3. Prostaglandin Synthetase Inhibitors (NSAIDS)
    4. Para-aminophenol Derivatives
    5. Disease Modifying Antirheumatic Drugs (DMARDS)
    6. Anti-Gout Agents
7. Nursing Responsibilities for Patients Receiving Cardiovascular and Renal System Drugs
    1. Drugs for Treating Congestive Heart Failure (CHF)
    2. Drugs used to Treat Angina
    3. Drugs Affecting Cardiac Output and Rhythm
    4. Drugs Affecting Blood Pressure
    5. Diuretics
8. Nursing Responsibilities for Patients Receiving Blood and Immune System Drugs
    1. Drugs Affecting Coagulation
    2. Drugs Modifying Biologic Response
    3. Drugs Affecting Lipid Levels
9. Nursing Responsibilities for Patients Receiving Respiratory system Drugs
    1. Drugs Affecting the Upper Respiratory System
    2. Drugs Affecting the Lower Respiratory System
10. Nursing Responsibilities for Patients Receiving Gastrointestinal System Drugs
    1. Drugs Affecting the Upper GI Tract
    2. Drugs Affecting the Lower GI Tract
11. Nursing Responsibilities for Patients Receiving Endocrine System Drugs
    1. Drugs Affecting Pituitary Function
    2. Drugs Affecting Thyroid Function
    3. Drugs Affecting Parathyroid Function

4. Corticosteroids and Their Antagonists
5. Drugs Affecting Blood Glucose Levels
6. Men's Health and Sexuality
7. Women's Health and Sexuality
8. Uterine Motility

12. Nursing Responsibilities for Patients Receiving Antineoplastic Drugs
    1. Cell Cycle-Specific Drugs
    2. Cell Cycle-Nonspecific Drugs
13. Nursing Responsibilities for Patients Receiving Antimicrobial Agents
    1. Principles of Antimicrobial Therapy
    2. Antibiotics Affecting the Bacterial Cell Wall
    3. Antibiotics Affecting Protein Synthesis
    4. Miscellaneous Antibiotics
    5. Drugs for Treating Urinary Tract Infections
    6. Drugs for Treating Mycobacterial Infections
    7. Drugs for Treating Viral and Fungal Disease
    8. Drugs for Treating HIV and AIDS
    9. Drugs for Treating Parasites

Methods of Instruction:

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

- **Method:** Lecture
  Integration: Lecture will be employed to describe the concepts of nursing care related to general pharmacology principles necessary to plan the care for patient drug therapy.
- **Method:** Discussion
  Integration: Class discussion will be used to analyze and evaluate core patient variables in the delivery of safe patient care of drug therapy patients.
- **Method:** Activity
  Integration: Group activities will be employed to involve students in assessing situations most likely to occur in a drug therapy situation.
- **Method:** Visiting Lecturers
  Integration: Guest speakers will utilize narrative stories of safe medication administration
- **Method:** Role Playing/Simulation
  Integration: Simulation will be integrated to assess how students apply theoretical principles to the practice setting.

Methods of Evaluation:

A student's grade shall be determined by the instructor using multiple measures of performance related to the course objectives. Methods of evaluation may include but are not limited to the following:

- **Method:** Homework
  Integration: Written Nursing careplan utilizing the five steps of the nursing process and general pharmacology principles (pharmacodynamics and pharmacokinetics) to plan the care of patients receiving drug therapy for various disease processes.
- **Method:** Exams/Tests
  Integration: Written multiple choice exams utilizing incorporating pharmacological principles, core drug knowledge, dosage calculations, and nursing responsibilities for patients receiving pharmacological therapies (as they pertain to the given disease process or wellness maintenance).
- **Method:** Quizzes
  Integration: Utilizing nursing responsibilities to promote safety when administering pharmacological therapies while ensuring that the pharmacological principles of pharmacodynamics and pharmacokinetics are maintained.
- **Method:** Oral Presentation
  Integration: Assigned presentations that include case studies while incorporating pharmacological properties

and the nursing responsibilities when evaluating adverse effects in treating pathological conditions.

- **Method:** Simulation
  Integration: Utilizing the Lasater Clinical Judgment tool and the five steps of the Nursing Process, participate in simulation using case studies to demonstrate the principles of pharmacodynamics and pharmacokinetics as they apply to the plan of care for patients receiving pharmacological processes, which includes family and patient education, and calculation of accurate medical dosages

Examples of Assignments:

Students will be expected to understand and critique college level texts or the equivalent. Reading and writing, as well as out of class assignments are required. These assignments may include but are not limited to the following:

1. Students will utilize their verbal, non-verbal, interpersonal, and communication technology skills to complete a comprehensive written case study from their experience using any drug not presented as a prototype in their text. This can be a past patient, a friend or relative, or even themselves. Use the text, the internet or the library as resource for the case study. Be sure to be thorough and creative in your description of the scenario (sample will be given by instructor). Turn in the written case study to the instructor 2 weeks prior to your scheduled oral presentation. List your references using APA format.
2. Students will use the basic math functions of adding, subtracting, multiplying and dividing whole numbers, decimals, and fractions to calculate medication dosages for assigned case studies on the selected disease process.

Textbooks:

- Adam, Holland & Urban (2019). *Pharmacology for Nurses: A pathophysiological approach (6th ed.)* Pearson. ISBN: 0135218330

Other Resources:

Minimum Qualification

- Nursing (Masters Required) **and/or**
- Nursing Science/