

PHM 118 STERILE PRODUCTS

COURSE DESCRIPTION:

Prerequisites: PHM 110, PHM 111, and PHM 115

Corequisites: None

This course provides an introduction to intravenous admixture preparation and other sterile products, including total parenteral nutrition and chemotherapy. Topics include aseptic techniques; facilities, equipment, and supplies utilized in admixture preparation; incompatibility and stability; laminar flow hoods; immunizations and irrigation solutions; and quality assurance. Upon completion, students should be able to describe and demonstrate the steps involved in preparing intermittent and continuous infusions, total parenteral nutrition, and chemotherapy. Course Hours Per Week: Class, 3. Lab, 3. Semester Hours Credit, 4.

COURSE OBJECTIVES:

Upon completion of this course, the student will demonstrate basic cognitive and practical knowledge and skills in each of the following:

- a. Aseptic technique
- b. Facilities, equipment, and supplies utilized in admixture preparation
- c. Incompatibility and stability
- d. Laminar flow hoods
- e. Immunizations and irrigating solutions
- f. Quality assurance
- g. Intermittent and continuous infusions
- h. Total parenteral nutrition admixtures
- i. Chemotherapy preparations and proper disposal of waste materials

OUTLINE OF INSTRUCTION:

- I. Course introduction and objectives
- II. Aseptic technique concepts and practices
 - A. Principles of United States Pharmacopeia Chapter <797>
 - B. Hand washing procedures
 - C. Appropriate dress attire in the compounding area
 - D. Aseptic manipulations with sterile compounding supplies
 - E. Proper cleaning of horizontal and vertical laminar clean benches
 - F. Proper disposal of used compounding supplies and admixture wastes
- III. Facilities, equipment, and supplies used in admixture preparations

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- A. Overall organization of the sterile compounding area
 - B. Use of horizontal and vertical laminar flow hoods, biological safety cabinets, automated pumps and compounding equipment
 - C. Use of syringes, needles, vials, ampules, double needles, and filters
 - D. Flexible plastic bags and bottles
- IV. Laminar flow hoods
- A. Theory of laminar air flow
 - B. Positioning of supplies in horizontal flow hood
 - C. Positioning of supplies in vertical flow hood
 - D. Use of biological cabinet
 - E. Practice aseptic compounding in the horizontal and vertical flow hoods and biological safety cabinets
- V. Immunizations and irrigating solutions
- A. Storage of biological products
 - B. Commonly used irrigating solutions
 - C. Compounding irrigating admixtures
- VI. Intermittent and continuous infusions
- A. Intravenous administration of IV fluids
 - B. Types of available IV fluids used in intermittent and continuous infusions
 - C. Types of medications given by IV infusion
 - D. Appropriate labeling and recordkeeping
 - E. Admixture calculations
 - F. Flow rate calculations
 - G. Quality assurance documentation
 - H. Medication order interpretation and Ascend-IP computer entry of orders
 - I. IV administration sets
 - J. Assembly of Add-Vantage systems
- VII. Stability and incompatibility issues related to admixtures
- A. Assigning expiration dates to admixtures
 - B. Products requiring protection from light
 - C. Types of admixture incompatibilities
 - D. Reference sources on compatibility and incompatibility information
 - E. Visual inspection of admixtures
- VIII. Total parenteral nutrition admixtures
- A. Order interpretation and Ascend-IP computer entry of medication order
 - B. Review of TPN calculations
 - C. Typical solutions and additives used in TPN compounding
 - D. Aseptic techniques used in TPN compounding
 - E. Gravity method vs. automated compounding equipment
 - F. Labeling and recordkeeping
 - G. Quality assurance documentation

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- H. Indications of use for TPN therapy
 - I. Indications of use for PPN (partial/peripheral parenteral nutrition)
 - J. Adverse reactions associated with TPN/PPN therapies
 - K. Electrolyte incompatibility concerns
- IX. Chemotherapy preparations
- A. Aseptic manipulations within biological safety cabinets
 - B. Safe handling and disposal of cytotoxic drugs
 - C. Use of hydrophobic filter needle units
 - D. Order interpretation and Ascend-IP computer entry of medication orders
 - E. Product labeling and recordkeeping
 - F. Quality assurance documentation
 - G. Importance of product and personnel protection
 - H. Commonly prescribed chemotherapeutic agents

REQUIRED TEXTBOOKS AND MATERIALS:

Manual for Pharmacy Technicians. American Society of Health-System Pharmacists. (3rd ed.) 2005.

Training Manual for Intravenous Admixture Personnel. (5th ed.). Precept Press.

SUGGESTED REFERENCES, PERIODICALS, AND VISUAL AIDS:

These are available in the Educational Resources Center Library and the Pharmacy Laboratory.

STATEMENT OF STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability should request assistance from the Disability Services Coordinator within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to the Disability Services Coordinator within the first two weeks of class. The Coordinator can be contacted by calling 686-3652, (V/TT), or by visiting the Student Services Office, Room 23, of the White Building.