

# BUTTE COLLEGE

## COURSE OUTLINE

### I. CATALOG DESCRIPTION

**NSG 50 - Principles of I.V. Therapy**

**2 Unit(s)**

**Prerequisite(s):** Graduate Vocational Nurse or Licensed Vocational Nurse

**Recommended Prep:** NONE

**Transfer Status:** CSU

29 hours Lecture

9 hours Lab

This course provides the Licensed Vocational Nurse (LVN) with state certification in intravenous (IV) therapy and blood withdrawal. The theory related to legal responsibilities, infection control, fluid and electrolytes, composition of parenteral solutions, technique for venipuncture, equipment and transfusion therapy are presented based on state guidelines. Hands on experience is provided during lab time with IV and blood withdrawal equipment and simulation arm models. The student will be required to complete three venipunctures and blood withdrawals on clients in a clinic setting, as per state requirements. This course provides 36 hours of continuing education for the LVN.

### II. OBJECTIVES

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

- A. Describe the legal requirements pertaining to starting and/or superimposing intravenous fluids and withdrawing blood as defined by Title 16.
- B. Explain the rationale for initiation of an intravenous infusion, a blood infusion, and a blood component infusion.
- C. Differentiate types of parenteral fluids and correlate each with fluid and electrolyte imbalances, identifying clinical manifestations associated with fluid and electrolyte imbalance.
- D. Correlate the relevant anatomy and physiology of criteria for selection of venipuncture or skin puncture sites, identifying appropriate devices and use of each.
- E. Explain the safety precautions utilized when administering intravenous therapy, blood, blood components, and for withdrawing blood.
- F. Identify potential complications (local and systemic) of intravenous therapy, blood infusion, blood component infusion, and blood withdrawal including appropriate nursing observations and preventive measures.
- G. Discuss psychological preparation for a person prior to initiating intravenous therapy and/or blood withdrawal.
- H. Explain appropriate techniques for performing venipuncture (include direct and indirect) and skin puncture, identifying proper equipment for each.
- I. Select appropriate venipuncture and skin puncture equipment and correctly assemble for use.
- J. Perform three (3) successful venipunctures and one (1) successful skin puncture on live subjects utilizing aseptic technique. (Required for certification)

### III. COURSE CONTENT

#### **A. Unit Titles/Suggested Time Schedule**

Lecture	
<u>Topics</u>	<u>Hours</u>
1. Introduction/Rationale for I.V. Therapy	1.00
2. Legal Aspects	1.00
3. Review of Anatomy for I.V. Therapy & Venipuncture	1.00

4. I.V. Equipment & Devices	3.00
5. Electrolyte & Fluid Balance	2.00
6. Acid/Base Balance	2.00
7. I.V. Solutions	4.00
8. Administration of I.V. Medication	1.00
9. Intralipid Therapy	1.00
10. Complications of IV Therapy	2.00
11. Parenteral Nutrition	1.00
12. Procedure for Administration of IV Therapy/Practice	3.00
13. Transfusion/Blood Product Administration	3.00
14. Venipunctures for Laboratory Analysis	4.00
Total Hours	29.00

#### Lab

<u>Topics</u>	<u>Hours</u>
1. Laboratory Practice - IV Therapy/Blood Withdrawal	9.00
Total Hours	9.00

#### IV. **METHODS OF INSTRUCTION**

- A. Lecture
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Discussion
- D. Demonstrations
- E. Multimedia Presentations

#### V. **METHODS OF EVALUATION**

- A. Written Quizzes
- B. Written Final
- C. Written Patient Case Study
- D. Return Demonstrations

#### VI. **EXAMPLES OF ASSIGNMENTS**

- A. Reading Assignments
  - 1. Read chapter 1. Define the role of the LVN as it applies to professional practice concepts for IV therapy.
  - 2. Read chapter 7. Identify and discuss phlebotomy techniques.
- B. Writing Assignments
  - 1. List different types of parenteral solutions. Contrast the osmolarity of each (isotonic, hypotonic, hypertonic).
  - 2. Compare signs and symptoms of imbalances (hyper and hypo) of the following electrolytes: Na<sup>+</sup>, K<sup>+</sup>, Cl<sup>-</sup>.
- C. Out-of-Class Assignments
  - 1. Perform three successful venipunctures on live subjects using aseptic technique.
  - 2. Perform one successful skin puncture on live subjects utilizing aseptic technique.

#### VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Textbooks:

A. Phillips, L.D. . Manual of IV Therapeutics. 5th Edition. Philadelphia: FA Davis, 2010.

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