

# HSCI 0054 - PARAMEDIC - ADVANCED LIFE SUPPORT PART 2

## Catalog Description

Prerequisite: Completion of HSCI 53 with grade of "C" or better; current enrollment in the CSU Sacramento Paramedic Program

Hours: 254 (92 lecture, 162 laboratory)

Description: Part two of a four-part series of courses providing the foundational knowledge required for the paramedic level of care in the Emergency Medical System (EMS). Theory and psychomotor application of prehospital care including the anatomy and physiology related to body systems and the impact of trauma, disease processes and medical disorders for common obstetric, pediatric, and geriatric patient emergencies. Students will learn to identify abnormal physical assessments and apply appropriate priority interventions. Competencies in accessing and evaluating patient monitoring technologies, and integrating advanced life support theories to perform paramedic skills related to prehospital care standards for traumatic injuries and medical emergencies. Students will receive certified training in Pediatric Advanced Life Support (PALS), International Trauma Life Support (ITLS), Advanced Medical Life Support (AMLS) and Emergency Vehicle Operations (EVOC). (CSU)

## Course Student Learning Outcomes

- CSLO #1: Explain the anatomy and physiology of major disease processes related to body systems and the impact of trauma.
- CSLO #2: Identify abnormal physical assessment findings and appropriate priority interventions for common obstetric, pediatric, and geriatric patient emergencies.
- CSLO #3: Integrate Advanced Life Support theories to perform EMT-P skills related to pre-hospital care standards for medical disorders/emergencies of obstetric, pediatric, and geriatric patients.
- CSLO #4: Describe and practice leadership skills to promote scene and crew safety.
- CSLO #5: Access, use, and evaluate patient monitoring care technologies.
- CSLO #6: Perform intravenous (IV) catheterization for administering medication therapy in the unstable medical patient.
- CSLO #7: Perform intraosseous (IO) catheterization for administering fluid therapy in the unstable trauma patient.

## Effective Term

Fall 2023

## Course Type

Credit - Degree-applicable

## Contact Hours

254

## Outside of Class Hours

184

## Total Student Learning Hours

438

## Course Objectives

Paramedic Unit 1 Trauma Systems and Mechanism of Injury:

1. Ability to integrate the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury.
2. Ability to integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with shock or hemorrhage.
3. Explain how to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with soft tissue trauma.
4. Demonstrate ability to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement the management plan for the patient with a burn injury.
5. Ability to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the trauma patient with a suspected head injury.
6. Ability to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with a suspected spinal injury.
7. Ability to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for a patient with a thoracic injury.
8. Ability to integrate pathophysiologic principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with suspected abdominal trauma.
9. Ability to integrate pathophysiological principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with a musculoskeletal injury.

Paramedic Unit 2 Special Considerations:

1. Ability to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a neonatal patient.
2. Ability to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the pediatric patient.
3. Ability to integrate the pathophysiological principles and the assessment findings to formulate and implement a treatment plan for the geriatric patient.
4. Ability to integrate the assessment findings to formulate a field impression and implement a treatment plan for the patient who has sustained abuse or assault.
5. Ability to integrate pathophysiological and psychosocial principles to adapt the assessment and treatment plan for diverse patients and those who face physical, mental, social and financial challenges.
6. Ability to integrate the pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the acute deterioration of a chronic care patient.

Paramedic Unit 3 Assessment Based Management:

1. Ability to integrate the principles of assessment based management to perform an appropriate assessment and implement the management plan for patients with common complaints.

Paramedic Unit 4 Operations:

1. Demonstrate an understanding of standards and guidelines that help ensure safe and effective ground and air medical transport.
2. Ability to integrate the principles of general incident management and multiple casualty incident (MCI) management techniques in order to function effectively at major incidents.
3. Demonstrate ability to operate an emergency vehicle under both adverse and normal driving conditions.

#### Lab Objectives

1. Demonstrate the assessment of a patient with signs and symptoms of hemorrhagic shock
2. Demonstrate the management of a patient with signs and symptoms of hemorrhagic shock
3. Demonstrate the assessment of a patient with signs and symptoms of compensated hemorrhagic shock.
4. Demonstrate the assessment and management of a patient with signs and symptoms of soft tissue injury.
5. Perform management of a chemical or thermal burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/communication strategies, and other management described by local protocol
6. Demonstrate a clinical assessment to determine the proper management modality for a patient with a suspected traumatic spinal and head injury
7. Demonstrate a clinical assessment for a patient with suspected thoracic trauma
8. Demonstrate the following techniques of management for thoracic injuries using needle decompression.
9. Demonstrate the following techniques of management for thoracic injuries using Fracture Stabilization
10. Demonstrate the following techniques of management for thoracic injuries using elective intubation, oxygenation and ventilation
11. Demonstrate the following techniques of management for thoracic injuries utilizing ECG monitoring.

## General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

## Articulation Information

- CSU Transferable

## Methods of Evaluation

- Objective Examinations
  - Example: Through weekly quizzes and examinations, Student will demonstrate ability to correctly analyze medical and trauma scenarios and use critical thinking skills to select the appropriate intervention for providing patient care. Medication and pharmacology assessments will be timed computer quizzes on various drugs from the National Registry Standards. Questions will reflect general knowledge of drug action, side effects and ability to implement a pharmacologic management plan.
- Problem Solving Examinations
  - Example: Using human patient simulation, student will be given a practical emergency medical scenario with minimal information on patient history. Using advanced assessment interventions learned in the course, the student will utilize subjective and

objective components of the primary assessment to demonstrate ability to select appropriate advanced life support skills for patient care. Instructor will utilize the NREMT (National Registry of Emergency Medical Technicians) standardized Medical Patient Assessment skills sheet for a paramedic, record and grade the scenario performance. The student will be provided copies of their performance for personal improvement and future reference.

#### • Skill Demonstrations

- Example: Using human patient simulation, student will demonstrate the ability to perform a primary patient assessment of circulatory, respiratory, and neurological systems to successfully establish an intravenous (IV) line for fluid and medication administration. Instructor will utilize the NREMT (National Registry of Emergency Medical Technicians) standardized Medical Patient Assessment skills sheet for Paramedic to record and grade the scenario performance. The student will be provided copies of their performance for personal improvement and future reference.

## Repeatable

No

## Methods of Instruction

- Laboratory
- Lecture/Discussion

#### Lab:

1. During a practical skills lab, Instructor will demonstrate on a human manikin the proper technique for Intraosseous (IO) cannulization to establish a route of administration for volume expanding fluids and medication administration. The Instructor will guide each individual student through every required step of the IO procedure, allowing the student to perform the psychomotor skill on their own and be allowed the experience the actual hands-on of patient care.

#### Lecture:

1. During a lecture presentation, Instructor will explain the pathology of traumatic head injury, signs and symptoms, neurological deficit, use of oral tracheal intubation, and the benefit of intravenous fluid administration when following national and local treatment protocols. The Instructor will demonstrate the assessment and intervention skills required for head and spinal trauma, and the student will perform the patient assessment and psychomotor skills on their own, and be allowed to experience the actual hands-on of patient care for a traumatic head injury.

## Typical Out of Class Assignments Reading Assignments

1. Read current EMS industry/EMS professional publications or manuals provided by instructor/clinical coordinator. Compare articles to local protocols, text books or other EMS industry-related journals. Student will be required to demonstrate the comparable differences between local and national protocols.
2. Read the regional protocols for Advanced Life Support care for Acute Environmental Emergencies. Student will be required to explain the physiological changes that occur within the body during extreme heat related illnesses, and discuss the treatment protocols for related environmental emergencies.
3. Read the regional treatment protocols on thoracic trauma and explain the cellular pathology

of traumatic injuries. Describe the signs and symptoms of perfusion compromise and the physiological effects on the body.

## Writing, Problem Solving or Performance

1. Through mandated curriculum documentation, student will log all course activities, track daily tasks, training discussions, training activities, and Advanced Life support skills learned. All training projects completed, advanced skills, and any protocols performed during of instructor based human simulations. 2. Through mandated documentation, student will complete a patient care report (PCR) document for all Human Simulated medical/legal activities involved with patient care. Documentation will include chief complaints, signs and symptoms, subjective and objective findings during assessment, recording all trending of vital signs and any trending changes in the ongoing assessment, document all simulated patient care procedures attempted, completed, and any changes or results in overall patient condition.

## Other (Term projects, research papers, portfolios, etc.)

### Required Materials

- AAOS Emergency Care in the Streets
  - Author: Nancy Caroline
  - Publisher: Jones and Bartlett Publishers
  - Publication Date: 2018
  - Text Edition: 8th; Volume 1
  - Classic Textbook?:
  - OER Link:
  - OER:
- AAOS Emergency Care in the Streets
  - Author: Nancy Caroline
  - Publisher: Jones & Bartlett Publishers
  - Publication Date: 2018
  - Text Edition: 8th; Volume 2
  - Classic Textbook?:
  - OER Link:
  - OER:

## Other materials and-or supplies required of students that contribute to the cost of the course.