Revised Fall of 2009
Office of Institutional Effectiveness

MASTER SYLLABUS

EMS 2714
Trauma
January, 2017

INSTRUCTOR: WHITFIELD **OFFICE LOCATION: AHB**
OFFICE HOURS: As posted **PHONE: 662.621.4049**
CLASS TIME(S)/SECTIONS: TR 8A-4P **EMAIL: BSTALLINGS@COAHOMACC.EDU**

Course Description:

This course will provide advanced instruction in the integration of pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a suspected trauma patient. This course was previously called Pre-hospital Trauma (EMT 2714). (4 sch: 2-hr lecture, 4-hr lab)

Textbook(s) and Material(s): Brady Paramedic Care: Principles and Practice 5th ed. Volume 4 (2017)

Student Learning Outcomes:

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

Discuss the principles of kinematics to predict the likelihood of injuries based on the patient's mechanism of injury. (EMS4, EMS11, EMS12)
a. Describe the components of a comprehensive trauma system.
b. Describe the role of and differences between levels of trauma centers.
c. Describe the criteria for transport to a trauma center.
d. Describe the criteria and procedure for air medical transport.
e. Define energy and force as they relate to trauma.
f. Define laws of motion and energy, and understand the role that increased speed has on injuries.
g. Describe each type of impact and its effect on unrestrained victims (e.g., "down and under," "up and over," compression, and deceleration).
h. Describe the pathophysiology of the head, spine, thorax, and abdomen that results from the above forces.
i. Describe the kinematics of penetrating injuries.
j. List the motion and energy considerations of mechanisms other than motor vehicle crashes.
k. Define the role of kinematics as an additional tool for patient assessment.
2. Discuss the pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with shock or hemorrhage. (EMS2, EMS4, EMS9, EMS12)
a. Describe the epidemiology, including the morbidity/mortality and prevention strategies, for shock and hemorrhage.

b. Discuss the anatomy and physiology of the cardiovascular system.
c. Predict shock and hemorrhage based on mechanism of injury.
d. Discuss the various types and degrees of shock and hemorrhage.
e. Discuss the pathophysiology of hemorrhage and shock.
f. Discuss the assessment findings associated with hemorrhage and shock.
g. Identify the need for intervention and transport of the patient with hemorrhage or shock.
h. Discuss the treatment plan and management of hemorrhage and shock.
i. Discuss the management of external hemorrhage.
j. Differentiate between controlled and uncontrolled hemorrhage.
k. Differentiate between the administration rate and amount of IV fluid in a patient with controlled versus uncontrolled hemorrhage.
l. Relate internal hemorrhage to the pathophysiology of compensated and decompensated hemorrhagic shock.
m. Relate internal hemorrhage to the assessment findings of compensated and decompensated hemorrhagic shock.
n. Discuss the management of internal hemorrhage.
o. Define shock based on aerobic and anaerobic metabolism.
p. Describe the incidence, morbidity, and mortality of shock.
q. Describe the body's physiologic response to changes in perfusion.
r. Describe the effects of decreased perfusion at the capillary level.
s. Discuss the cellular ischemic phase related to hemorrhagic shock.
t. Discuss the capillary stagnation phase related to hemorrhagic shock.
u. Discuss the capillary washout phase related to hemorrhagic shock.
v. Discuss the assessment findings of hemorrhagic shock.
w. Relate pulse pressure changes to perfusion status.
x. Relate orthostatic vital sign changes to perfusion status.
y. Define compensated and decompensated hemorrhagic shock.
z. Discuss the pathophysiological changes associated with compensated shock.
aa. Discuss the assessment findings associated with compensated shock.
bb. Identify the need for intervention and transport of the patient with compensated shock.
cc. Discuss the treatment plan and management of compensated shock.
dd. Discuss the pathophysiological changes associated with decompensated shock.
ee. Discuss the assessment findings associated with decompensated shock.
ff. Identify the need for intervention and transport of the patient with decompensated shock.
gg. Discuss the treatment plan and management of the patient with decompensated shock.
hh. Differentiate between compensated and decompensated shock.
ii. Relate external hemorrhage to the pathophysiology of compensated and decompensated hemorrhagic shock.
jj. Relate external hemorrhage to the assessment findings of compensated and decompensated hemorrhagic shock.
kk. Differentiate among the normotensive, hypotensive, or profoundly hypotensive patient.
ll. Differentiate among the administration of fluid in the normotensive, hypotensive, or profoundly hypotensive patient.
mm. Discuss the physiologic changes associated with the pneumatic anti-shock garment (PASG).
nn. Discuss the indications and contraindications for the application and inflation of the PASG.

oo. Apply epidemiology to develop prevention strategies for hemorrhage and shock.
pp. Integrate the pathophysiological principles to the assessment of a patient with hemorrhage or shock.
qq. Synthesize assessment findings and patient history information to form a field impression for the patient with hemorrhage or shock.
rr. Formulate a treatment plan based on the field impression for the hemorrhage or shock patient.
ss. Demonstrate the assessment of a patient with signs and symptoms of hemorrhagic shock.
tt. Demonstrate the management of a patient with signs and symptoms of hemorrhagic shock.
uu. Demonstrate the assessment of a patient with signs and symptoms of compensated hemorrhagic shock.
vv. Demonstrate the management of a patient with signs and symptoms of compensated hemorrhagic shock.
ww. Demonstrate the assessment of a patient with signs and symptoms of decompensated hemorrhagic shock.
xx. Demonstrate the management of a patient with signs and symptoms of decompensated hemorrhagic shock.
yy. Demonstrate the assessment of a patient with signs and symptoms of external hemorrhage.
zz. Demonstrate the management of a patient with signs and symptoms of external hemorrhage.
aaa. Demonstrate the assessment of a patient with signs and symptoms of internal hemorrhage.
bbb. Demonstrate the management of a patient with signs and symptoms of internal hemorrhage.
3. Explain the pathophysiological principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with soft tissue trauma. (EMS2, EMS4, EMS9, EMS12)
a. Describe the incidence, morbidity, and mortality of soft tissue injures.
b. Describe the layers of the skin, specifically the following:
(1) Epidermis and dermis (cutaneous)
(2) Superficial fascia (subcutaneous)
(3) Deep fascia
c. Identify the major functions of the integumentary system.
d. Identify the skin tension lines of the body.
e. Predict soft tissue injuries based on mechanism of injury.
f. Discuss the pathophysiology of wound healing, including the following:
(1) Homeostasis
(2) Inflammation phase
(3) Epithelialization
(4) Neovascularization
(5) Collagen synthesis
g. Discuss the pathophysiology of soft tissue injuries.
h. Differentiate between the following types of closed soft tissue injuries:
(1) Contusion
(2) Hematoma
(3) Crush injuries
i. Discuss the assessment findings associated with closed soft tissue injuries
j. Discuss the management of a patient with closed soft tissue injuries.
k. Discuss the pathophysiology of open soft tissue injuries.

l. Differentiate between the following types of open soft tissue injuries:
(1) Abrasions
(2) Lacerations
(3) Major arterial lacerations
(4) Avulsions
(5) Impaled objects
(6) Amputations
(7) Incisions
(8) Crush injuries
(9) Blast injuries
(10) Penetrations/ punctures
m. Discuss the incidence, morbidity, and mortality of blast injuries.
n. Predict blast injuries based on mechanism of injury, including the following:
(1) Primary
(2) Secondary
(3) Tertiary
o. Discuss types of trauma, including the following:
(1) Blunt
(2) Penetrating
(3) Barotrauma
(4) Burns
p. Discuss the pathophysiology associated with blast injuries.
q. Discuss the effects of an explosion within an enclosed space on a patient.
r. Discuss the assessment findings associated with blast injuries.
s. Identify the need for rapid intervention and transport of the patient with a blast injury.
t. Discuss the management of a patient with a blast injury.
u. Discuss the pathophysiology, assessment, and management of high pressure injection injuries.
v. Discuss the incidence, morbidity, and mortality of crush injuries.
w. Define the following conditions:
(1) Crush injury
(2) Crush syndrome
(3) Compartment syndrome
x. Discuss the mechanisms of injury in a crush injury.
y. Discuss the effects of reperfusion and rhabdomyolysis on the body.
z. Discuss the assessment findings associated with crush injuries.
aa. Identify the need for rapid intervention and transport of the patient with a crush injury.
bb. Discuss the management of a patient with a crush injury.
cc. Discuss the pathophysiology of hemorrhage associated with soft tissue injuries, including the following:
(1) Capillary
(2) Venous
(3) Arterial
dd. Discuss the assessment findings associated with open soft tissue injuries.
ee. Discuss the assessment of hemorrhage associated with open soft tissue injuries.
ff. Differentiate between the various management techniques for hemorrhage control of open soft tissue injuries, including the following:
(1) Direct pressure
(2) Pressure dressing
(3) Tourniquet application

gg. Demonstrate timely and appropriate tourniquet use for refractory external bleeding.
hh. Differentiate between the types of injuries requiring the use of an occlusive versus non-occlusive dressing.
ii. Identify the need for rapid assessment, intervention, and appropriate transport for the patient with a soft tissue injury.
jj. Discuss the management of the soft tissue injury patient.
kk. Define and discuss the following:
(1) Dressings
(a) Sterile
(b) Non-sterile
(c) Occlusive
(d) Non-occlusive
(e) Adherent
(f) Non-adherent
(g) Absorbent
(h) Non-absorbent
(i) Wet
(j) Dry
(2) Bandages
(a) Absorbent
(b) Non-absorbent
(c) Adherent
(d) Non-adherent
(e) Tourniquet
ll. Discuss the possible complications of an improperly applied dressing, bandage, or tourniquet.
mm. Discuss the assessment of wound healing.
nn. Discuss the management of wound healing.
oo. Discuss the pathophysiology of wound infection.
pp. Discuss the assessment of wound infection.
qq. Discuss the management of wound infection.
rr. Integrate pathophysiological principles to the assessment of a patient with a soft tissue injury.
ss. Formulate treatment priorities for patients with soft tissue injuries in conjunction with the following:
(1) Airway/face/neck trauma
(2) Thoracic trauma (open/closed)
(3) Abdominal trauma

tt. Synthesize assessment findings and patient history information to form a field impression for the patient with soft tissue trauma.
uu. Formulate a treatment plan based on the field impression for the patient with soft tissue trauma.
vv. Defend the rationale explaining why immediate life threats must take priority over wound closure.
ww. Defend the management regimens for various soft tissue injuries.
xx. Defend why immediate life-threatening conditions take priority over soft tissue management.
yy. Explain the importance of a thorough assessment for patients with soft tissue injuries.
zz. Attend to the feelings that the patient with a soft tissue injury may experience.

aaa. Explain the importance of good follow-up care for patients receiving sutures.
bbb. Discuss the value of the written report for soft tissue injuries, in the continuum of patient care.
ccc. Demonstrate the assessment and management of a patient with signs and symptoms of soft tissue injury, including the following:
(1) Contusion
(2) Hematoma
(3) Crushing
(4) Abrasion
(5) Laceration
(6) Avulsion
(7) Amputation
(8) Impaled object
(9) Penetration/puncture
(10) Blast
4. Explain the pathophysiological principles and the assessment findings to formulate a field impression and implement the management plan for the patient with a burn injury. (EMS2, EMS4, EMS9, EMS12)
a. Describe the anatomy and physiology pertinent to burn injuries.
b. Describe the epidemiology, including incidence, mortality/morbidity, risk factors, and prevention strategies for the patient with a burn injury.
c. Describe the pathophysiologic complications and systemic complications of a burn injury.
d. Identify types of burn injuries, including a thermal burn, an inhalation burn, chemical burn, an electrical burn, and a radiation exposure.
e. Describe the depth classifications of burn injuries, including a superficial burn, a partial-thickness burn, a full-thickness burn, and other depth classifications described by local protocol.
f. Describe methods for determining body surface area percentage of a burn injury including the “rules of nines,” the “rules of palms,” and other methods described by local protocol.
g. Describe the severity of a burn including a minor burn, a moderate burn, a severe burn, and other severity classifications described by local protocol.
h. Differentiate criteria for determining the severity of a burn injury between a pediatric patient and an adult patient.
i. Describe special considerations for a pediatric patient with a burn injury.
j. Discuss considerations that impact management and prognosis of the burn injured patient.
k. Discuss mechanisms of burn injuries.
l. Discuss conditions associated with burn injuries, including trauma, blast injuries, airway compromise, respiratory compromise, and child abuse.
m. Describe the management of a burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/communication strategies, and other management described by local protocol.
n. Describe the epidemiology of a thermal burn injury.
o. Describe the specific anatomy and physiology pertinent to a thermal burn injury.
p. Describe the pathophysiology of a thermal burn injury.
q. Describe the depth classifications of a thermal burn injury.
r. Describe the severity of a thermal burn injury.
s. Describe considerations that impact management and prognosis of the patient with a thermal burn injury.

t. Discuss mechanisms of burn injury and conditions associated with a thermal burn injury.
u. Describe the management of a thermal burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/communication strategies.
v. Describe the epidemiology of an inhalation burn injury.
w. Describe the specific anatomy and physiology pertinent to an inhalation burn injury.
x. Describe the pathophysiology of an inhalation burn injury.
y. Differentiate between supraglottic and infraglottic inhalation injuries.
z. Describe the depth classifications of an inhalation burn injury.
aa. Describe the severity of an inhalation burn injury.
bb. Describe considerations that impact management and prognosis of the patient with an inhalation burn injury.
cc. Discuss mechanisms of burn injury and conditions associated with an inhalation burn injury.
dd. Describe the management of an inhalation burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/communication strategies.
ee. Describe the epidemiology of a chemical burn injury and a chemical burn injury to the eye.
ff. Describe the specific anatomy and physiology pertinent to a chemical burn injury and a chemical burn injury to the eye.
gg. Describe the pathophysiology of a chemical burn injury, including types of chemicals and their burning processes and a chemical burn injury to the eye.
hh. Describe the depth classifications of a chemical burn injury.
ii. Describe the severity of a chemical burn injury.
jj. Describe considerations that impact management and prognosis of the patient with a chemical burn injury and a chemical burn injury to the eye.
kk. Discuss mechanisms of burn injury and conditions associated with a chemical burn injury.
ll. Describe the management of a chemical burn injury and a chemical burn injury to the eye, including airway and ventilation, circulation, pharmacological, nonpharmacological, transport considerations, and psychological support/communication strategies.
mm. Describe the epidemiology of an electrical burn injury.
nn. Describe the specific anatomy and physiology pertinent to an electrical burn injury.
oo. Describe the pathophysiology of an electrical burn injury.
pp. Describe the depth classifications of an electrical burn injury.
qq. Describe the severity of an electrical burn injury.
rr. Describe considerations that impact management and prognosis of the patient with an electrical burn injury.
ss. Discuss mechanisms of burn injury and conditions associated with an electrical burn injury.
tt. Describe the management of an electrical burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/communication strategies.
uu. Describe the epidemiology of a radiation exposure.
vv. Describe the specific anatomy and physiology pertinent to a radiation exposure.
ww. Describe the pathophysiology of a radiation exposure, including the types and

characteristics of ionizing radiation.
xx. Describe the depth classifications of a radiation exposure.
yy. Describe the severity of a radiation exposure.
zz. Describe considerations that impact management and prognosis of the patient with a radiation exposure.
aaa. Discuss mechanisms of burn injury associated with a radiation exposure.
bbb. Discuss conditions associated with a radiation exposure.
ccc. Describe the management of a radiation exposure, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, and psychological support/communication strategies.
ddd. Integrate pathophysiological principles to the assessment of a patient with a thermal burn injury.
eee. Integrate pathophysiological principles to the assessment of a patient with an inhalation burn injury.
fff. Integrate pathophysiological principles to the assessment of a patient with a chemical burn injury.
ggg. Integrate pathophysiological principles to the assessment of a patient with an electrical burn injury.
hhh. Integrate pathophysiological principles to the assessment of a patient with a radiation exposure.
iii. Synthesize patient history information and assessment findings to form a field impression for the patient with a thermal burn injury.
jjj. Synthesize patient history information and assessment findings to form a field impression for the patient with an inhalation burn injury.

kkk. Synthesize patient history information and assessment findings to form a field impression for the patient with a chemical burn injury.
lll. Synthesize patient history information and assessment findings to form a field impression for the patient with an electrical burn injury.
mmm. Synthesize patient history information and assessment findings to form a field impression for the patient with a radiation exposure.
nnn. Formulate a management plan based on the field impression for the patient with a thermal burn injury.
ooo. Formulate a management plan based on the field impression for the patient with an inhalation burn injury.
ppp. Formulate a management plan based on the field impression for the patient with a chemical burn injury.
qqq. Formulate a management plan based on the field impression for the patient with an electrical burn injury.
rrr. Formulate a management plan based on the field impression for the patient with a radiation exposure.
sss. Explain the changes of a patient's self-image associated with a burn injury.
ttt. Explain the impact of managing a burn injured patient.
uuu. Demonstrate empathy for a burn injured patient.
vvv. Assess safety at a burn injury incident.
www. Predict mortality and morbidity based on the pathophysiology and assessment findings of a patient with a burn injury.
xxx. Discuss the sense of urgency in burn injuries.
yyy. Perform as a role-model for universal precautions and body substance isolation (BSI).
zzz. Demonstrate body substance isolation procedures during assessment and

management of patients with a burn injury.
aaaa. Perform assessment of a patient with a burn injury.
bbbb. Perform management of a thermal burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/communication strategies, and other management described by local protocol.
cccc. Perform management of an inhalation burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/communication strategies, and other management described by local protocol.
dddd. Perform management of a chemical burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/communication strategies, and other management described by local protocol.
eeee. Perform management of an electrical burn injury, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/communication strategies, and other management described by local protocol.
ffff. Perform management of a radiation exposure, including airway and ventilation, circulation, pharmacological, non-pharmacological, transport considerations, psychological support/communication strategies, and other management described by local protocol.
5. Discuss the 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. (EMS2, EMS4, EMS9, EMS12)
a. Describe the incidence, morbidity, and mortality of facial injuries.
b. Explain facial anatomy and relate physiology to facial injuries.
c. Predict facial injuries based on mechanism of injury.
d. Predict other injuries commonly associated with facial injuries based on mechanism of injury.
e. Differentiate between the following types of facial injuries, highlighting the defining characteristics of each:
(1) Eye
(2) Ear
(3) Nose
(4) Throat
(5) Mouth
f. Integrate pathophysiological principles to the assessment of a patient with facial injury.
g. Differentiate between facial injuries based on the assessment and history.
h. Formulate a field impression for a patient with a facial injury based on the assessment findings.
i. Develop a patient management plan for a patient with a facial injury based on the field impression
j. Explain the pathophysiology of eye injuries.
k. Relate assessment findings associated with eye injuries to pathophysiology.
l. Integrate pathophysiological principles to the assessment of a patient with an eye injury.
m. Formulate a field impression for a patient with an eye injury based on the assessment findings.
n. Develop a patient management plan for a patient with an eye injury based on the field impression.

o. Describe and demonstrate eye irrigation with a Morgan lens.
p. Explain the pathophysiology of ear injuries.
q. Relate assessment findings associated with ear injuries to pathophysiology.
r. Integrate pathophysiological principles to the assessment of a patient with an ear injury.
s. Formulate a field impression for a patient with an ear injury based on the assessment findings.
t. Develop a patient management plan for a patient with an ear injury based on the field impression.
u. Explain the pathophysiology of nose injuries.
v. Relate assessment findings associated with nose injuries to pathophysiology.
w. Integrate pathophysiological principles to the assessment of a patient with a nose injury.
x. Formulate a field impression for a patient with a nose injury based on the

assessment findings.
y. Develop a patient management plan for a patient with a nose injury based on the field impression.
z. Explain the pathophysiology of throat injuries.
aa. Relate assessment findings associated with throat injuries to pathophysiology.
bb. Integrate pathophysiological principles to the assessment of a patient with a throat injury.
cc. Formulate a field impression for a patient with a throat injury based on the assessment findings.
dd. Develop a patient management plan for a patient with a throat injury based on the field impression.
ee. Explain the pathophysiology of mouth injuries.
ff. Relate assessment findings associated with mouth injuries to pathophysiology.
gg. Integrate pathophysiological principles to the assessment of a patient with a mouth injury.
hh. Formulate a field impression for a patient with a mouth injury based on the assessment findings.
ii. Develop a patient management plan for a patient with a mouth injury based on the field impression.
jj. Describe the incidence, morbidity, and mortality of head injuries.
kk. Explain anatomy, and relate physiology of the CNS to head injuries.
ll. Predict head injuries based on mechanism of injury.
mm. Distinguish between head injury and brain injury.
nn. Explain the pathophysiology of head/brain injuries.
oo. Explain the concept of increasing intracranial pressure (ICP).
pp. Explain the effect of increased and decreased carbon dioxide on ICP.
qq. Explain the process involved with each of the levels of increasing ICP.
rr. Relate assessment findings associated with head/brain injuries to the pathophysiologic process.
ss. Classify head injuries (mild, moderate, severe) according to assessment findings.
tt. Identify the need for rapid intervention and transport of the patient with a head/brain injury.
uu. Describe and explain the general management of the head/brain injury patient, including pharmacological and non-pharmacological treatment.
vv. Analyze the relationship between carbon dioxide concentration in the blood and management of the airway in the head/brain injured patient.

ww. Explain the pathophysiology of diffuse axonal injury.
xx. Relate assessment findings associated with concussion and moderate and severe diffuse axonal injury to pathophysiology.
yy. Develop a management plan for a patient with a moderate and severe diffuse axonal injury.
zz. Explain the pathophysiology of skull fracture.
aaa. Relate assessment findings associated with skull fracture to pathophysiology.
bbb. Develop a management plan for a patient with a skull fracture.
ccc. Explain the pathophysiology of cerebral contusion.
ddd. Relate assessment findings associated with cerebral contusion to pathophysiology.

eee. Develop a management plan for a patient with a cerebral contusion.
fff. Explain the pathophysiology, assessment findings, and management plan for a patient with an intracranial hemorrhage, including the following:
(1) Epidural
(2) Subdural
(3) Intracerebral
(4) Subarachnoid
ggg. Describe the various types of helmets and their purposes.
hhh. Relate priorities of care to factors determining the need for helmet removal in various field situations including sports related incidents.
iii. Develop a management plan for the removal of a helmet for a head injured patient.
jjj. Integrate the pathophysiological principles to the assessment of a patient with head/brain injury.
kkk. Differentiate between the types of head/brain injuries based on the assessment and history.
lll. Formulate a field impression for a patient with a head/brain injury based on the assessment findings.
mmm. Develop a patient management plan for a patient with a head/brain injury based on the field impression.
6. Explain the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with a suspected spinal injury. (EMS2, EMS4, EMS9, EMS12)
a. Describe the incidence, morbidity, and mortality of spinal injuries in the trauma patient.
b. Describe the following anatomy and physiology of structures related to spinal injuries:
(1) Cervical
(2) Thoracic
(3) Lumbar
(4) Sacrum
(5) Coccyx
(6) Head
(7) Brain
(8) Spinal cord
(9) Nerve tract(s)
(10) Dermatomes
c. Predict spinal injuries based on mechanism of injury.
d. Describe the pathophysiology of spinal injuries.
e. Explain traumatic and nontraumatic spinal injuries.
f. Describe the assessment findings associated with spinal injuries.

g. Describe the management of spinal injuries.
h. Identify the need for rapid intervention and transport of the patient with spinal injuries.
i. Integrate the pathophysiological principles to the assessment of a patient with a spinal injury.
j. Differentiate between spinal injuries based on the assessment and history.
k. Formulate a field impression based on the assessment findings.
l. Develop a patient management plan based on the field impression.
m. Describe the pathophysiology of traumatic spinal injury related to the following:
(1) Spinal shock
(2) Spinal neurogenic shock
(3) Quadriplegia/paraplegia
(4) Incomplete cord injury/cord syndromes
(a) Central cord syndrome
(b) Anterior cord syndrome
(c) Brown-Sequard syndrome
(d) Cauda equina syndrome
n. Describe the assessment findings associated with traumatic spinal injuries.
o. Describe the management of traumatic spinal injuries.
p. Integrate pathophysiological principles to the assessment of a patient with a traumatic spinal injury.
q. Differentiate between traumatic and nontraumatic spinal injuries based on the assessment and history.
r. Formulate a field impression for traumatic spinal injury based on the assessment findings.
s. Develop a patient management plan for traumatic spinal injury based on the field impression.
t. Describe the pathophysiology of nontraumatic spinal injury, including the following:
(1) Low back pain
(2) Herniated intervertebral disk
(3) Spinal cord tumors
u. Describe the assessment findings associated with nontraumatic spinal injuries.
v. Describe the management of nontraumatic spinal injuries.
w. Integrate pathophysiological principles to the assessment of a patient with nontraumatic spinal injury.
x. Differentiate between traumatic and nontraumatic spinal injuries based on the assessment and history.
y. Formulate a field impression for nontraumatic spinal injury based on the assessment findings.
z. Develop a patient management plan for nontraumatic spinal injury based on the field impression.
aa. Recognize the need for a thorough assessment when determining the proper management modality for spine injuries.
bb. Recognize the implications of failing to properly immobilize a spine injured patient.
cc. Demonstrate a clinical assessment to determine the proper management modality for a patient with a suspected traumatic spinal injury.
dd. Demonstrate a clinical assessment to determine the proper management modality for a patient with a suspected nontraumatic spinal injury.
ee. Demonstrate immobilization of the urgent and non-urgent patient with assessment findings of spinal injury from the following presentations:
(1) Supine

(2) Prone
(3) Semi-prone
(4) Sitting
(5) Standing
ff. Demonstrate documentation of suspected spinal cord injury to include the following:
(1) General area of spinal cord involved
(2) Sensation
(3) Dermatomes
(4) Motor function
(5) Area(s) of weakness
gg. Demonstrate preferred methods for stabilization of a helmet from a potentially spine injured patient.
hh. Demonstrate helmet removal techniques.
ii. Demonstrate alternative methods for stabilization of a helmet from a potentially spine injured patient.
jj. Demonstrate documentation of assessment before spinal immobilization.
kk. Demonstrate documentation of assessment during spinal immobilization.
ll. Demonstrate documentation of assessment after spinal immobilization.
7. Discuss the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for a patient with a thoracic injury. (EMS2, EMS4, EMS9, EMS12)
a. Describe the incidence, morbidity, and mortality of thoracic injuries in the trauma patient.
b. Discuss the anatomy and physiology of the organs and structures related to thoracic injuries.
c. Predict thoracic injuries based on mechanism of injury.
d. Discuss the types of thoracic injuries.
e. Discuss the pathophysiology of thoracic injuries.
f. Discuss the assessment findings associated with thoracic injuries.
g. Discuss the management of thoracic injuries.
h. Identify the need for rapid intervention and transport of the patient with thoracic injuries.
i. Discuss the pathophysiology of specific chest wall injuries, including the following:
(1) Rib fracture
(2) Flail segment
(3) Sternal fracture
j. Discuss the assessment findings associated with chest wall injuries.
k. Identify the need for rapid intervention and transport of the patient with chest wall injuries.
l. Discuss the management of chest wall injuries.
m. Discuss the pathophysiology of injury to the lung, including the following:
(1) Simple pneumothorax
(2) Open pneumothorax
(3) Tension pneumothorax
(4) Hemothorax
(5) Hemopneumothorax
(6) Pulmonary contusion
n. Discuss the assessment findings associated with lung injuries.
o. Discuss the management of lung injuries, to include assisting in the insertion of a

chest tube as well as monitoring and management of a chest tube.
p. Identify the need for rapid intervention and transport of the patient with lung injuries.
q. Discuss the pathophysiology of myocardial injuries, including the following:
(1) Pericardial tamponade
(2) Myocardial contusion
(3) Myocardial rupture
(4) Commotio cordis
r. Discuss the assessment findings associated with myocardial injuries.
s. Discuss the management of myocardial injuries.
t. Identify the need for rapid intervention and transport of the patient with myocardial injuries.
u. Discuss the pathophysiology of vascular injuries, including injuries to the following:
(1) Aorta
(2) Vena cava
(3) Pulmonary arteries/veins
v. Discuss the assessment findings associated with vascular injuries.
w. Discuss the management of vascular injuries.
x. Identify the need for rapid intervention and transport of the patient with vascular injuries.
y. Discuss the pathophysiology of diaphragmatic injuries.
z. Discuss the assessment findings associated with diaphragmatic injuries.
aa. Discuss the management of diaphragmatic injuries.
bb. Identify the need for rapid intervention and transport of the patient with diaphragmatic injuries.
cc. Discuss the pathophysiology of esophageal injuries.
dd. Discuss the assessment findings associated with esophageal injuries.
ee. Discuss the management of esophageal injuries.
ff. Identify the need for rapid intervention and transport of the patient with esophageal injuries.
gg. Discuss the pathophysiology of tracheo-bronchial injuries.
hh. Discuss the assessment findings associated with tracheo-bronchial injuries.
ii. Discuss the management of tracheo-bronchial injuries.
jj. Identify the need for rapid intervention and transport of the patient with tracheobronchial injuries.
kk. Discuss the pathophysiology of traumatic asphyxia.
ll. Discuss the assessment findings associated with traumatic asphyxia.
mm. Discuss the management of traumatic asphyxia.
nn. Identify the need for rapid intervention and transport of the patient with traumatic asphyxia.
oo. Integrate the pathophysiological principles to the assessment of a patient with

thoracic injury.
pp. Differentiate between thoracic injuries based on the assessment and history.
qq. Formulate a field impression based on the assessment findings.
rr. Develop a patient management plan based on the field impression.
ss. Recognize the need for the use of a thorough assessment to determine a differential diagnosis and treatment plan for thoracic trauma.
tt. Recognize the need for a thorough scene survey to determine the forces involved in thoracic trauma.

uu. Recognize the implications of failing to properly diagnose thoracic trauma.
vv. Recognize the implications of failing to initiate timely interventions to patients with thoracic trauma.
ww. Demonstrate a clinical assessment for a patient with suspected thoracic trauma.
xx. Demonstrate the following techniques of management for thoracic injuries:
(1) Needle decompression
(2) Fracture stabilization
(3) Elective intubation
(4) ECG monitoring
(5) Oxygenation and ventilation
8. Explain the pathophysiologic principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with suspected abdominal trauma. (EMS2, EMS4, EMS9, EMS12)
a. Describe the epidemiology, including the morbidity/mortality and prevention strategies for a patient with abdominal trauma.
b. Describe the anatomy and physiology of organs and structures related to abdominal injuries.
c. Predict abdominal injuries based on blunt and penetrating mechanisms of injury.
d. Describe open and closed abdominal injuries.
e. Explain the pathophysiology of abdominal injuries.
f. Describe the assessment findings associated with abdominal injuries.
g. Identify the need for rapid intervention and transport of the patient with abdominal injuries based on assessment findings.
h. Describe the management of abdominal injuries.
i. Integrate the pathophysiological principles to the assessment of a patient with abdominal injury.
j. Differentiate between abdominal injuries based on the assessment and history.
k. Formulate a field impression for patients with abdominal trauma based on the assessment findings.
l. Develop a patient management plan for patients with abdominal trauma based on the field impression.
m. Describe the epidemiology, including the morbidity/mortality and prevention strategies for solid organ injuries.
n. Explain the pathophysiology of solid organ injuries.
o. Describe the assessment findings associated with solid organ injuries.
p. Describe the treatment plan and management of solid organ injuries.
q. Describe the epidemiology, including the morbidity/mortality and prevention strategies for hollow organ injuries.

r. Explain the pathophysiology of hollow organ injuries.
s. Describe the assessment findings associated with hollow organ injuries.
t. Describe the treatment plan and management of hollow organ injuries.
u. Describe the epidemiology, including the morbidity/mortality and prevention strategies for abdominal vascular injuries.
v. Explain the pathophysiology of abdominal vascular injuries.
w. Describe the assessment findings associated with abdominal vascular injuries.
x. Describe the treatment plan and management of abdominal vascular injuries.
y. Describe the epidemiology, including the morbidity/mortality and prevention strategies for pelvic fractures.
z. Explain the pathophysiology of pelvic fractures.
aa. Describe the assessment findings associated with pelvic fractures.

bb. Describe the treatment plan and management of pelvic fractures.
cc. Describe the epidemiology, including the morbidity/mortality and prevention strategies for other related abdominal injuries.
dd. Explain the pathophysiology of other related abdominal injuries.
ee. Describe the assessment findings associated with other related abdominal injuries.
ff. Describe the treatment plan and management of other related abdominal injuries.
gg. Apply the epidemiologic principles to develop prevention strategies for abdominal injuries.
hh. Integrate the pathophysiological principles to the assessment of a patient with abdominal injuries.
ii. Differentiate between abdominal injuries based on the assessment and history.
jj. Formulate a field impression based upon the assessment findings for a patient with abdominal injuries.
kk. Develop a patient management plan for a patient with abdominal injuries, based upon field impression.
ll. Recognize the need for the use of a thorough assessment to determine a differential diagnosis and treatment plan for abdominal trauma.
mm. Recognize the need for the use of a thorough scene survey to determine the forces involved in abdominal trauma.
nn. Recognize the implications of failing to properly diagnose abdominal trauma and initiate timely interventions to patients with abdominal trauma.
oo. Demonstrate a clinical assessment to determine the proper treatment plan for a patient with suspected abdominal trauma.
pp. Demonstrate the proper use of PASG in a patient with suspected abdominal trauma.
qq. Demonstrate the proper use of PASG in a patient with suspected pelvic fracture.
9. Discuss the pathophysiological principles and the assessment findings to formulate a field impression and implement the treatment plan for the patient with a musculoskeletal injury. (EMS2, EMS4, EMS9, EMS12)
a. Describe the incidence, morbidity, and mortality of musculoskeletal injuries.
b. Discuss the anatomy and physiology of the musculoskeletal system.
c. Predict injuries based on the mechanism of injury, including the following:
(1) Direct
(2) Indirect
(3) Pathologic

d. Discuss the types of musculoskeletal injuries:
(1) Fracture (open and closed)
(2) Dislocation/ fracture
(3) Sprain
(4) Strain
e. Discuss the pathophysiology of musculoskeletal injuries.
f. Discuss the assessment findings associated with musculoskeletal injuries.
g. List the six “Ps” of musculoskeletal injury assessment.
h. List the primary signs and symptoms of extremity trauma.
i. List other signs and symptoms that can indicate less obvious extremity injury.
j. Discuss the need for assessment of pulses, motor, and sensation before and after splinting.
k. Identify the need for rapid intervention and transport when dealing with musculoskeletal injuries.
l. Discuss the management of musculoskeletal injuries.
m. Discuss the general guidelines for splinting.

n. Explain the benefits of cold application for musculoskeletal injury.
o. Explain the benefits of heat application for musculoskeletal injury.
p. Describe age-associated changes in the bones.
q. Discuss the pathophysiology of open and closed fractures.
r. Discuss the relationship between volume of hemorrhage and open or closed fractures.
s. Discuss the assessment findings associated with fractures.
t. Discuss the management of fractures.
u. Discuss the usefulness of the pneumatic anti-shock garment (PASG) in the management of fractures.
v. Describe the special considerations involved in femur fracture management.
w. Discuss the pathophysiology of dislocations.
x. Discuss the assessment findings of dislocations.
y. Discuss the out-of-hospital management of dislocation/fractures, including splinting and realignment.
z. Explain the importance of manipulating a knee dislocation/fracture with an absent distal pulse.
aa. Describe the procedure for reduction of a shoulder, finger, or ankle dislocation/fracture.
bb. Discuss the pathophysiology of sprains.
cc. Discuss the assessment findings of sprains.
dd. Discuss the management of sprains.
ee. Discuss the pathophysiology of strains.
ff. Discuss the assessment findings of strains.
gg. Discuss the management of strains.
hh. Discuss the pathophysiology of a tendon injury.
ii. Discuss the assessment findings of tendon injury.
jj. Discuss the management of a tendon injury.
kk. Integrate the pathophysiological principles to the assessment of a patient with a musculoskeletal injury.

ll. Differentiate between musculoskeletal injuries based on the assessment findings and history.
mm. Formulate a field impression of a musculoskeletal injury based on the assessment findings.
nn. Develop a patient management plan for the musculoskeletal injury based on the field impression.
oo. Recognize the use of a thorough assessment to determine a working diagnosis and treatment plan for musculoskeletal injuries.
pp. Recognize the use of pain management in the treatment of musculoskeletal injuries.
qq. Demonstrate a clinical assessment to determine the proper treatment plan for a patient with a suspected musculoskeletal injury.
rr. Demonstrate the proper use of fixation, soft, and traction splints for a patient with a suspected fracture.

Attendance:

Absence from Class for School Sanctioned Activities

The nature of the educational programs at Coahoma Community College is such that it is necessary for every student to attend class regularly. Instructors will keep accurate class

attendance records, and those records will become part of the student's official record. Regular class attendance and punctuality are expected. All arrangements for completing missed work are to be made with the instructor. It is the student's responsibility to initiate these arrangements. *Excessive absences may result in loss of credit for the course concerned as well as loss of grant refunds and/or financial aid eligibility.* For more information, see the Attendance Policy section in the College Catalog.

Make-up Policy:

As defined in academic handbook for Paramedic

Academic Dishonesty:

Cheating and plagiarism (the representation of someone else's work as your own, usually by directly copying or paraphrasing without a reference to the original source) will not be tolerated. The penalty will be receiving a (0) for that assignment, without any possibility of make-up work or alternative assignments. Additionally, according to the Student Handbook, *such acts will be considered a severe infraction and carry a possible sanction of suspension in semester (s) length or expulsion.* For a more in-depth explanation of academic dishonesty, see the Student Handbook.

Electronic Devices in Class

The use of cellular phones, pagers, CD players, radios, and similar devices is prohibited in the classroom and laboratory facilities.

Non-Discrimination/Disability Policy:

Notice of Non-discrimination. Coahoma Community College does not discriminate on the basis of race, color, national origin, sex, disability, or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Michael Houston; Coordinator for Section 504/ADA, Title IX; Vivian M. Presley Administration Bldg, 3240 Friars Point Road; Clarksdale, MS 38614; Telephone # (662) 621-4853; Email: mhouston@coahomacc.edu

Accommodations for Students with Disabilities.

Disability Support Services Coordinator has established open hours when students, staff and faculty may drop in without an appointment. Appointments can be made by call (662) 621-4853 or by email to mhouston@coahomacc.edu

Michael Houston
Disability Support Services Coordinator
Vivian M. Presley Administration Building
(662) 621-4853
mhouston@coahomacc.edu

Instructional Techniques:

Instructors may use many different methods of instruction, to include power-point, video presentations, hands-on participation in the skills lab and any other training aid the instructor feels would benefit the student, given the material being presented at that time, provided there is no unnecessary exposure of the student to risk.

Method(s) of Evaluation:

Didactic and psychomotor examinations at regular intervals throughout each semester. Such evaluations will be a direct measurement of the students' level of retention of the material.

(Method(s) of evaluation must measure the student learning outcomes listed above.)

Grade Scale:
Coahoma Community College changed from the 3.0 system to the 4.0 system effective, September, 1974. College students' academic progress is evaluated according to the following grading system.

Grading Scale for Paramedic		
Grade	Scale	Quality Points
A – Excellent	95-100	4.0
B – Good	87-94	3.0
C – Average	**80**-86	2.0
D – Poor	70-79	1.0
F - Failure	69 or below	0.0
I – Incomplete		0.0
W – Withdrawal		0.0
Z – Unassigned Grade		0.0
Failure to attain a course grade of "C" or 80% will prevent the student from progressing to the next scheduled semester in the Paramedic Program. 80% will be considered the "cut score" for all major assignments.		

To be in good academic standing, students are required to maintain a cumulative 2.0 average on the 4.0 system. Each grade reported as having been earned by the student at the end of a semester or summer term will be included in computing the cumulative grade point average. The student should observe that the grade "F" carries zero quality points and will be included in the computation. For more information on the Coahoma Community College Grade Scale, students should see the College Catalog.

COURSE OUTLINE
EMS 2714
Trauma
January, 2017

1	**Trauma and Trauma Systems**	
2	**Mechanism of Injury**	
3	**Hemorrhage & Shock**	
4	**Soft Tissue Trauma**	
	Opportunity for test	
5	**Burns**	
6	**Head, Neck & Spinal Trauma**	
7	**Chest Trauma**	
	Opportunity for test	
8	**Abdominal & Pelvic Trauma**	
	MID-TERM EXAM	**3/7/2017**
9	**Orthopedic Trauma**	
10	**Environmental Trauma**	
	***Opportunity for test**	
11	**Special Considerations**	
	***Opportunity for test**	
	Environmental Trauma	
	Special Considerations in Trauma	
	*** You will integrate the cognitive information learned into practical applications in lab to include use of low/high fidelity manikins. Additional opportunities to practice will occur in clinical and field exercises***	

This outline is intended as a guideline for the course. The institution and the instructor reserve the right to make modifications in content, schedule, and requirements as necessary to enhance each student's educational experience and student learning outcomes.