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Office of Institutional Effectiveness

MASTER SYLLABUS

EMS 2855
Medical Patients
January, 2017

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CLASS TIME(S)/SECTIONS: M-R 8A-4P EMAIL: RNELSON@COAHOMACC.EDU

Course Description: This course will provide a detailed understanding of the anatomic structures, physiology, and pathophysiology encountered when providing care in medical emergencies involving pulmonary, allergy and anaphylaxis, gastroenterology, renal urology, and hematology. This course was previously called Pre-hospital Medical Care (EMT 2855). (5 sch: 2-hr lecture, 6-hr lab)

Textbook(s) and Material(s): Brady Paramedic Care: Principles and Practice: Medical Emergencies 5th ed. Volume 3 (2017)

Student Learning Outcomes:

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

Discuss the pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with respiratory problems. (EMS2, EMS4, EMS9, EMS10)

a. Discuss the epidemiology of pulmonary diseases and conditions.
b. Identify and describe the function of the structures located in the upper and lower airway.
c. Discuss the physiology of ventilation and respiration.
d. Identify common pathological events that affect the pulmonary system.
e. Discuss abnormal assessment findings associated with pulmonary diseases and conditions.
f. Compare various airway and ventilation techniques used in the management of pulmonary diseases.
g. Review the pharmacological preparations that paramedics use for management of respiratory diseases and conditions.
h. Review the pharmacological preparations used in managing patients with respiratory diseases that may be prescribed by physicians.
i. Review the use of equipment used during the physical examination of patients with complaints associated with respiratory diseases and conditions.
j. Identify the epidemiology, anatomy, physiology, pathophysiology, assessment

findings, and management for the following respiratory diseases and conditions:
(1) Adult respiratory distress syndrome
(2) Bronchial asthma
(3) Chronic bronchitis
(4) Emphysema
(5) Pneumonia
(6) Pulmonary edema
(7) Pulmonary thromboembolism
(8) Neoplasms of the lung
(9) Upper respiratory infections
(10) Spontaneous pneumothorax
(11) Hyperventilation syndrome

k. Demonstrate the assessment and treatment of patients with respiratory diseases.
l. Recognize the critical nature of accurate field impressions of patients with respiratory diseases and conditions.
m. Demonstrate proper use of airway and ventilation devices.
n. Conduct a history and patient assessment for patients with pulmonary diseases and conditions.
o. Demonstrate the application of a CPAP/BiPAP unit.
2. Discuss the pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with an allergic, anaphylactic, or anaphylactoid reaction. (EMS2, EMS4, EMS9, EMS10)
a. Define allergic reaction.
b. Define anaphylaxis.
c. Describe the incidence, morbidity, and mortality of anaphylaxis.
d. Identify the risk factors most predisposing to anaphylaxis.
e. Discuss the anatomy and physiology of the organs and structures related to anaphylaxis.
f. Describe the prevention of anaphylaxis and appropriate patient education.
g. Discuss the pathophysiology of allergy and anaphylaxis.
h. Describe the common methods of entry of substances into the body.
i. Define natural and acquired immunity.
j. Define antigens and antibodies.
k. List common antigens most frequently associated with anaphylaxis.
l. Discuss the formation of antibodies in the body.
m. Describe physical manifestations in anaphylaxis.
n. Differentiate manifestations of an allergic reaction from anaphylaxis.
o. Recognize the signs and symptoms related to anaphylaxis.
p. Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis.
q. Integrate the pathophysiological principles of the patient with anaphylaxis.
r. Correlate abnormal findings in assessment with the clinical significance in the patient with anaphylaxis.
s. Develop a treatment plan based on field impression in the patient with allergic reaction and anaphylaxis.
t. Describe the factors that precipitate disease in the human body.
u. Discuss analyzing disease risk.
v. Describe aging as a risk factor for disease.

w. Discuss familial diseases and associated risk factors.
x. Define the characteristics of the immune response.
y. Discuss induction of the immune system.
z. Discuss transplant-related problems and collagen vascular disease.
aa. Describe the inflammation response.
bb. Discuss the role of mast cells as part of the inflammation response.
cc. Discuss the cellular components of inflammation.
dd. Describe the systemic manifestations of the inflammation response.
ee. Describe the resolution and repair from inflammation.
ff. Discuss hypersensitivity.

gg. Describe deficiencies in immunity and inflammation.
hh. Define anaphylactic shock
3. Discuss the pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with a gastroenterologic problem. (EMS2, EMS4, EMS9, EMS10)
a. Describe the incidence, morbidity, and mortality of gastrointestinal emergencies.
b. Identify the risk factors most predisposing to gastrointestinal emergencies.
c. Discuss the anatomy and physiology of the organs and structures related to gastrointestinal diseases.
d. Discuss the pathophysiology of inflammation and its relationship to acute abdominal pain.
e. Define somatic pain as it relates to gastroenterology.
f. Define visceral pain as it relates to gastroenterology.
g. Define referred pain as it relates to gastroenterology.
h. Differentiate between hemorrhagic and non-hemorrhagic abdominal pain.
i. Discuss the signs and symptoms of local inflammation relative to acute abdominal pain.
j. Discuss the signs and symptoms of peritoneal inflammation relative to acute abdominal pain.
k. List the signs and symptoms of general inflammation relative to acute abdominal pain.
l. Based on assessment findings, differentiate between local, peritoneal, and general inflammation as they relate to acute abdominal pain.
m. Describe the questioning technique and specific questions the paramedic should ask when gathering a focused history in a patient with abdominal pain.
n. Describe the technique for performing a comprehensive physical examination on a patient complaining of abdominal pain.
o. Define upper gastrointestinal bleeding.
p. Discuss the pathophysiology of upper gastrointestinal bleeding.
q. Recognize the signs and symptoms related to upper gastrointestinal bleeding.
r. Describe the management for upper gastrointestinal bleeding.
s. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with upper GI bleeding.
t. Define lower gastrointestinal bleeding.
u. Discuss the pathophysiology of lower gastrointestinal bleeding.
v. Recognize the signs and symptoms related to lower gastrointestinal bleeding.
w. Describe the management for lower gastrointestinal bleeding.
x. Integrate pathophysiological principles and assessment findings to formulate a field

impression and implement a treatment plan for the patient with lower GI bleeding.
y. Define acute gastroenteritis.
z. Discuss the pathophysiology of acute gastroenteritis.
aa. Recognize the signs and symptoms related to acute gastroenteritis.
bb. Describe the management for acute gastroenteritis.
cc. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with acute gastroenteritis.

dd. Define colitis.
ee. Discuss the pathophysiology of colitis.
ff. Recognize the signs and symptoms related to colitis.
gg. Describe the management for colitis.
hh. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with colitis.
ii. Define gastroenteritis.
jj. Discuss the pathophysiology of gastroenteritis.
kk. Recognize the signs and symptoms related to gastroenteritis.
ll. Describe the management for gastroenteritis.
mm. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with gastroenteritis.
nn. Define diverticulitis.
oo. Discuss the pathophysiology of diverticulitis.
pp. Recognize the signs and symptoms related to diverticulitis.
qq. Describe the management for diverticulitis.
rr. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with diverticulitis.
ss. Define appendicitis.
tt. Discuss the pathophysiology of appendicitis.
uu. Recognize the signs and symptoms related to appendicitis.
vv. Describe the management for appendicitis.
ww. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with appendicitis.
xx. Define peptic ulcer disease.
yy. Discuss the pathophysiology of peptic ulcer disease.
zz. Recognize the signs and symptoms related to peptic ulcer disease.
aaa. Describe the management for peptic ulcer disease.
bbb. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with peptic ulcer disease.
ccc. Define bowel obstruction.
ddd. Discuss the pathophysiology of bowel obstruction.
eee. Recognize the signs and symptoms related to bowel obstruction.
fff. Describe the management for bowel obstruction.
ggg. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with bowel obstruction.
hhh. Define Crohn’s disease.
iii. Discuss the pathophysiology of Crohn’s disease.
jjj. Recognize the signs and symptoms related to Crohn’s disease.
kkk. Describe the management for Crohn’s disease.

lll. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with Crohn's disease.
mmm. Define pancreatitis.
nnn. Discuss the pathophysiology of pancreatitis.
ooo. Recognize the signs and symptoms related to pancreatitis.
ppp. Describe the management for pancreatitis.

qqq. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with pancreatitis.
rrr. Define esophageal varices.
sss. Discuss the pathophysiology of esophageal varices.
ttt. Recognize the signs and symptoms related to esophageal varices.
uuu. Describe the management for esophageal varices.
vvv. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with esophageal varices.
www. Define hemorrhoids.
xxx. Discuss the pathophysiology of hemorrhoids.
yyy. Recognize the signs and symptoms related to hemorrhoids.
zzz. Describe the management for hemorrhoids.
aaaa. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with hemorrhoids.
bbbb. Discuss the pathophysiology of the following:
• Rectal abscess
• Rectal foreign body obstruction
• Mesenteric ischemia
cccc. Define cholecystitis.
dddd. Discuss the pathophysiology of cholecystitis.
eeee. Recognize the signs and symptoms related to cholecystitis.
ffff. Describe the management for cholecystitis.
gggg. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with cholecystitis.
hhhh. Define acute hepatitis.
iiii. Discuss the pathophysiology of acute hepatitis.
jjjj. Recognize the signs and symptoms related to acute hepatitis.
kkkk. Describe the management for acute hepatitis.
llll. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with acute hepatitis.
mmmm. Integrate pathophysiological principles of the patient with a gastrointestinal emergency.
nnnn. Differentiate between gastrointestinal emergencies based on assessment findings.
oooo. Correlate abnormal findings in the assessment with the clinical significance in the patient with abdominal pain.
pppp. Develop a patient management plan based on field impression in the patient with abdominal pain.
4. Discuss the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with a renal or urologic problem. (EMS2, EMS4, EMS9, EMS10)
a. Describe the incidence, morbidity, mortality, and risk factors predisposing to urological emergencies.

b. Discuss the anatomy and physiology of the organs and structures related to urogenital diseases.
c. Define referred pain and visceral pain as it relates to urology.
d. Describe the questioning technique and specific questions the paramedic should utilize when gathering a focused history in a patient with abdominal pain.
e. Describe the technique for performing a comprehensive physical examination of a patient complaining of abdominal pain.
f. Define acute renal failure.
g. Discuss the pathophysiology of acute renal failure.
h. Recognize the signs and symptoms related to acute renal failure.
i. Describe the management for acute renal failure.
j. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with acute renal failure.
k. Define chronic renal failure.
l. Discuss the pathophysiology of chronic renal failure.
m. Recognize the signs and symptoms related to chronic renal failure.
n. Describe the management for chronic renal failure.
o. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with chronic renal failure.
p. Define renal dialysis.
q. Discuss the common complication of renal dialysis.
r. Define renal calculi.
s. Discuss the pathophysiology of renal calculi.
t. Recognize the signs and symptoms related to renal calculi.
u. Describe the management for renal calculi.
v. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with renal calculi.
w. Define urinary tract infection.
x. Discuss the pathophysiology of urinary tract infection.
y. Recognize the signs and symptoms related to urinary tract infection.
z. Describe the management for a urinary tract infection.
aa. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with a urinary tract infection.
bb. Apply the epidemiology to develop prevention strategies for urological emergencies.
cc. Integrate pathophysiological principles to the assessment of a patient with abdominal pain.
dd. Synthesize assessment findings and patient history information to accurately differentiate between pain of a urogenital emergency and that of other origins.
ee. Formulate a treatment plan based on the field impression made in the assessment.
ff. Describe the pathophysiology of rhabdomyolysis including its causes.
gg. Recognize signs and symptoms of rhabdomyolysis.
hh. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with rhabdomyolosis.
5. Discuss the pathophysiological principles of the hematopoietic system to formulate a field impression and implement a treatment plan. (EMS2, EMS4, EMS9, EMS10)

a. Identify the anatomy of the hematopoietic system.
b. Describe volume and volume-control related to the hematopoietic system.

c. Describe the blood-forming organs.
d. Describe normal red blood cell (RBC) production, function, and destruction.
e. Explain the significance of the hematocrit with respect to red cell size and number.
f. Explain the correlation of the RBC count, hematocrit, and hemoglobin values.
g. Define anemia.
h. Describe normal white blood cell (WBC) production, function, and destruction.
i. Identify the characteristics of the inflammatory process.
j. Identify the difference between cellular and humoral immunity.
k. Identify alterations in immunologic response.
l. Describe the number, normal function, types, and life span of leukocytes.
m. List the leukocyte disorders.
n. Describe platelets with respect to normal function, life span, and numbers.
o. Describe the components of the hemostatic mechanism.
p. Describe the function of coagulation factors, platelets, and blood vessels necessary for normal coagulation.
q. Describe the intrinsic and extrinsic clotting systems with respect to identification of factor deficiencies in each stage.
r. Identify blood groups.
s. Define and describe the management of transfusion reactions.
t. Describe how acquired factor deficiencies may occur.
u. Define fibrinolysis.
v. Identify the components of physical assessment as they relate to the hematologic system.
w. Describe the pathology and clinical manifestations and prognosis associated with the following:
(1) Anemia
(2) Leukemia
(3) Lymphomas
(4) Polycythemia
(5) Disseminated intravascular coagulopathy
(6) Hemophilia
(7) Sickle cell disease
(8) Multiple myeloma
x. Integrate pathophysiological principles into the assessment of a patient with hematologic disease.
y. Recognize the sense of urgency for initial assessment and interventions for patients with hematologic crises.
z. Perform an assessment of the patient with hematologic disorder.
aa. Define septic shock.
bb. Utilize the pathophysiology behind septic shock, and formulate a treatment plan for the patient with septic shock.
6. Discuss the pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with a neurological problem. (EMS2, EMS4, EMS9, EMS10)
a. Describe the incidence, morbidity, and mortality of neurological emergencies.
b. Identify the risk factors most predisposing to the nervous system.

c. Discuss the anatomy and physiology of the organs and structures related to nervous system.
d. Discuss the pathophysiology of nontraumatic neurologic emergencies.
e. Discuss the assessment findings associated with nontraumatic neurologic emergencies.
f. Identify the need for rapid intervention and the transport of the patient with nontraumatic emergencies.
g. Discuss the management of nontraumatic neurological emergencies.
h. Discuss the pathophysiology of coma and altered mental status.
i. Discuss the assessment findings associated with coma and altered mental status.
j. Discuss the management/treatment plan of coma and altered mental status.
k. Describe the epidemiology, including the morbidity/mortality and prevention strategies, for seizures.
l. Discuss the pathophysiology of seizures.
m. Discuss the assessment findings associated with seizures.
n. Define seizure.
o. Differentiate the major types of seizures.
p. List the most common causes of seizures.
q. Describe the phases of a generalized seizure.
r. Discuss the pathophysiology of syncope.
s. Discuss the assessment findings associated with syncope.
t. Discuss the management/treatment plan of syncope.
u. Discuss the pathophysiology of headache.
v. Discuss the assessment findings associated with a headache.
w. Discuss the management/treatment plan of a headache.
x. Describe the epidemiology, including the morbidity/mortality and prevention strategies, for neoplasms.
y. Discuss the pathophysiology of neoplasms.
z. Describe the types of neoplasms.
aa. Discuss the assessment findings associated with neoplasms.
bb. Discuss the management/treatment plan of neoplasms.
cc. Define neoplasms.
dd. Recognize the signs and symptoms related to neoplasms.
ee. Correlate abnormal assessment findings with clinical significance in the patient with neoplasms.
ff. Differentiate among the various treatment and pharmacological interventions used in the management of neoplasms.
gg. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with neoplasms.
hh. Describe the epidemiology, including the morbidity/mortality and prevention strategies, for abscess.
ii. Discuss the pathophysiology of abscess.
jj. Discuss the assessment findings associated with abscess.
kk. Discuss the management/treatment plan of abscess.
ll. Define abscess.
mm. Recognize the signs and symptoms related to abscess.

nn. Correlate abnormal assessment findings with clinical significance in the patient with abscess.
oo. Differentiate among the various treatment and pharmacological interventions used in the management of abscess.
pp. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with abscess.
qq. Describe the epidemiology, including the morbidity/mortality and prevention strategies, for stroke and intracranial hemorrhage.
rr. Discuss the pathophysiology of stroke and intracranial hemorrhage.
ss. Describe the types of stroke and intracranial hemorrhage.
tt. Discuss the assessment findings associated with stroke and intracranial hemorrhage.
uu. Discuss the management/treatment plan of stroke and intracranial hemorrhage.
vv. Define stroke and intracranial hemorrhage.
ww. Recognize the signs and symptoms related to stroke and intracranial hemorrhage.
xx. Correlate abnormal assessment findings with clinical significance in the patient with stroke and intracranial hemorrhage.
yy. Differentiate among the various treatment and pharmacological interventions used in the management of stroke and intracranial hemorrhage.
zz. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with stroke and intracranial hemorrhage.
aaa. Describe the epidemiology, including the morbidity/mortality and prevention strategies, for transient ischemic attack.
bbb. Discuss the pathophysiology of transient ischemic attack.
ccc. Discuss the assessment findings associated with transient ischemic attack.
ddd. Discuss the management/treatment plan of transient ischemic attack.
eee. Define transient ischemic attack.
fff. Recognize the signs and symptoms related to transient ischemic attack.
ggg. Correlate abnormal assessment findings with clinical significance in the patient with transient ischemic attack.
hhh. Differentiate among the various treatment and pharmacological interventions used in the management of transient ischemic attack.
iii. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with transient ischemic attack.
jjj. Describe the epidemiology, including the morbidity/mortality and prevention strategies, for degenerative neurological diseases.
kkk. Discuss the pathophysiology of degenerative neurological diseases.
lll. Discuss the assessment findings associated with degenerative neurological diseases.
mmm. Discuss the management/treatment plan of degenerative neurological diseases.
nnn. Define the following:
(1) Muscular dystrophy
(2) Multiple sclerosis
(3) Dystonia
(4) Parkinson’s disease
(5) Trigeminal neuralgia

(6) Bell’s palsy
(7) Amyotrophic lateral sclerosis
(8) Peripheral neuropathy

(9) Myoclonus
(10 Spina bifida
(11) Poliomyelitis
ooo. Recognize the signs and symptoms related to degenerative neurological diseases.
ppp. Correlate abnormal assessment findings with clinical significance in the patient with degenerative neurological diseases.
qqq. Differentiate among the various treatment and pharmacological interventions used in the management of degenerative neurological iseases.
rrr. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with degenerative neurological diseases.
sss. Integrate the pathophysiological principles of the patient with a neurological emergency.
ttt. Differentiate between neurological emergencies based on assessment findings.
uuu. Correlate abnormal assessment findings with the clinical significance in the patient with neurological complaints.
vvv. Develop a patient management plan based on field impression in the patient with neurological emergencies.
www. Recognize the feelings of a patient who regains consciousness among strangers.
xxx. Formulate means of conveying empathy to patients whose ability to communicate is limited by their condition.
yyy. Perform an appropriate assessment of a patient with coma or altered mental status.
zzz. Perform a complete neurological examination as part of the comprehensive physical examination of a patient with coma or altered mental status.
aaaa. Manage a patient with a coma or an altered mental status, including the administration of oxygen, oral glucose, 50% dextrose, and narcotic reversal agents.
bbbb. Perform an appropriate assessment of a patient with syncope.
cccc. Manage a patient with syncope.
dddd. Perform an appropriate assessment of a patient with seizures.
eeee. Manage a patient with seizures, including the administration of diazepam or lorazepam.
ffff. Perform an appropriate assessment of a patient with stroke and intracranial hemorrhage or TIA.
gggg. Manage a patient with stroke and intracranial hemorrhage or TIA.
hhhh. Demonstrate an appropriate assessment of a patient with a chief complaint of weakness.
7. Discuss the pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with an endocrine problem. (EMS2, EMS4, EMS9, EMS10)
a. Describe the incidence, morbidity, and mortality of endocrinologic emergencies.
b. Identify the risk factors most predisposing to endocrinologic disease.
c. Discuss the anatomy and physiology of organs and structures related to endocrinologic diseases.

d. Review the pathophysiology of endocrinologic emergencies.
e. Discuss the general assessment findings associated with endocrinologic emergencies.
f. Identify the need for rapid intervention of the patient with endocrinologic emergencies.
g. Discuss the management of endocrinologic emergencies.

h. Describe osmotic diuresis and its relationship to diabetes.
i. Describe the pathophysiology of adult onset diabetes mellitus.
j. Describe the pathophysiology of juvenile onset diabetes mellitus.
k. Describe the effects of decreased levels of insulin on the body.
l. Correlate abnormal findings in assessment with clinical significance in the patient with a diabetic emergency.
m. Discuss the management of diabetic emergencies.
n. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with a diabetic emergency.
o. Differentiate between the pathophysiology of normal glucose metabolism and diabetic glucose metabolism.
p. Describe the mechanism of ketone body formation and its relationship to ketoacidosis.
q. Discuss the physiology of the excretion of potassium and ketone bodies by the kidneys.
r. Describe the relationship of insulin to serum glucose levels.
s. Describe the effects of decreased levels of insulin on the body.
t. Describe the effects of increased serum glucose levels on the body.
u. Discuss the pathophysiology of hypoglycemia.
v. Discuss the utilization of glycogen by the human body as it relates to the pathophysiology of hypoglycemia.
w. Describe the actions of epinephrine as it relates to the pathophysiology of hypoglycemia.
x. Recognize the signs and symptoms of the patient with hypoglycemia.
y. Describe the compensatory mechanisms utilized by the body to promote homeostasis relative to hypoglycemia.
z. Describe the management of a responsive hypoglycemic patient.
aa. Correlate abnormal findings in assessment with clinical significance in the patient with hypoglycemia.
bb. Discuss the management of the hypoglycemic patient.
cc. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with hypoglycemia.
dd. Discuss the pathophysiology of hyperglycemia.
ee. Recognize the signs and symptoms of the patient with hyperglycemia.
ff. Describe the management of hyperglycemia.
gg. Correlate abnormal findings in assessment with clinical significance in the patient with hyperglycemia.
hh. Discuss the management of the patient with hyperglycemia.

ii. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with hyperglycemia.
jj. Discuss the pathophysiology of nonketotic hyperosmolar coma.
kk. Recognize the signs and symptoms of the patient with nonketotic hyperosmolar coma.
ll. Describe the management of nonketotic hyperosmolar coma.
mm. Correlate abnormal findings in assessment with clinical significance in the patient with nonketotic hyperosmolar coma.

nn. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with nonketotic hyperosmolar coma.
oo. Discuss the management of the patient with hyperglycemia.
pp. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with hyperglycemia.
qq. Discuss the pathophysiology of diabetic ketoacidosis.
rr. Recognize the signs and symptoms of the patient with diabetic ketoacidosis.
ss. Describe the management of diabetic ketoacidosis.
tt. Correlate abnormal findings in assessment with clinical significance in the patient with diabetic ketoacidosis.
uu. Discuss the management of the patient with diabetic ketoacidosis.
vv. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with diabetic ketoacidosis.
ww. Discuss the pathophysiology of thyrotoxicosis.
xx. Recognize signs and symptoms of the patient with thyrotoxicosis.
yy. Describe the management of thyrotoxicosis.
zz. Correlate abnormal findings in assessment with clinical significance in the patient with thyrotoxicosis.
aaa. Discuss the management of the patient with thyrotoxicosis.
bbb. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with thyrotoxicosis.
ccc. Discuss the pathophysiology of myxedema.
ddd. Recognize signs and symptoms of the patient with myxedema.
eee. Describe the management of myxedema.
fff. Correlate abnormal findings in assessment with clinical significance in the patient with myxedema.
ggg. Discuss the management of the patient with myxedema.
hhh. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with myxedema.
iii. Discuss the pathophysiology of Cushing's syndrome.
jjj. Recognize signs and symptoms of the patient with Cushing's syndrome.
kkk. Describe the management of Cushing's syndrome.
lll. Correlate abnormal findings in assessment with clinical significance in the patient

with Cushing's syndrome.
mmm. Discuss the management of the patient with Cushing's syndrome.
nnn. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with Cushing's syndrome.
ooo. Discuss the pathophysiology of adrenal insufficiency.
ppp. Recognize signs and symptoms of the patient with adrenal insufficiency.
qqq. Describe the management of adrenal insufficiency.
rrr. Correlate abnormal findings in assessment with clinical significance in the patient with adrenal insufficiency.
sss. Discuss the management of the patient with adrenal insufficiency.
ttt. Integrate the pathophysiological principles and the assessment findings to formulate

a field impression and implement a treatment plan for the patient with adrenal insufficiency.
uuu. Integrate the pathophysiological principles to the assessment of a patient with an endocrinological emergency.
vvv. Differentiate between endocrine emergencies based on assessment and history.
www. Correlate abnormal findings in the assessment with clinical significance in the patient with endocrinologic emergencies.
xxx. Develop a patient management plan based on field impression in the patient with an endocrinologic emergency.
8. Discuss the pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with a toxic exposure. (EMS2, EMS4, EMS9, EMS10)
a. Describe the incidence, morbidity, and mortality of toxic emergencies.
b. Identify the risk factors most predisposing to toxic emergencies.
c. Discuss the anatomy and physiology of the organs and structures related to toxic emergencies.
d. Describe the routes of entry of toxic substances into the body.
e. Discuss the role of the Poison Control Center in the United States.
f. List the toxic substances that are specific to your region.
g. Discuss the pathophysiology of the entry of toxic substances into the body.
h. Discuss the assessment findings associated with various toxidromes.
i. Identify the need for rapid intervention and transport of the patient with a toxic substance emergency.
j. Discuss the management of toxic substances.
k. Define poisoning by ingestion.
l. List the most common poisonings by ingestion.
m. Recognize the signs and symptoms related to the most common poisonings by ingestion.
n. Correlate the abnormal findings in assessment with the clinical significance in the patient with the most common poisonings by ingestion.
o. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by ingestion.
p. Discuss the factors affecting the decision to induce vomiting in a patient with ingested poison.

q. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with the most common poisonings by ingestion.
r. Define poisoning by inhalation.
s. List the most common poisonings by inhalation.
t. Describe the pathophysiology of poisoning by inhalation.
u. Recognize the signs and symptoms related to the most common poisonings by inhalation.
v. Correlate the abnormal findings in assessment with the clinical significance in patients with the most common poisonings by inhalation.
w. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by inhalation.
x. Integrate pathophysiological principles and the assessment findings to formulate a field impression for the patient with the most common poisonings by inhalation.
y. Integrate pathophysiological principles and the assessment findings to formulate a

field impression and implement a treatment plan for the patient with the most common poisonings by inhalation.
z. Define poisoning by injection.
aa. List the most common poisonings by injection.
bb. Describe the pathophysiology of poisoning by injection.
cc. Recognize the signs and symptoms related to the most common poisonings by injection.
dd. Correlate the abnormal findings in assessment with the clinical significance in the patient with the most common poisonings by injection.
ee. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by injection.
ff. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with the most common poisonings by injection.
gg. Define poisoning by surface absorption.
hh. List the most common poisonings by surface absorption.
ii. Describe the pathophysiology of poisoning by surface absorption.
jj. Recognize the signs and symptoms related to the most common poisonings by surface absorption.
kk. Correlate the abnormal findings in assessment with the clinical significance in patients with the most common poisonings by surface absorption.
ll. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by surface absorption.
mm. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients with the most common poisonings by surface absorption.
nn. Define poisoning by overdose.
oo. List the most common poisonings by overdose.
pp. Describe the pathophysiology of poisoning by overdose.
qq. Recognize the signs and symptoms related to the most common poisonings by overdose.

rr. Correlate the abnormal findings in assessment with the clinical significance in patients with the most common poisonings by overdose.
ss. Differentiate among the various treatments and pharmacological interventions in the management of the most common poisonings by overdose.
tt. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients with the most common poisonings by overdose.
uu. Define drug abuse.
vv. Discuss the incidence of drug abuse in the United States.
ww. Define the following terms:
(1) Substance or drug abuse
(2) Substance or drug dependence
(3) Tolerance
(4) Withdrawal
(5) Addiction
xx. List the most commonly abused drugs (both by chemical names and street names).
yy. Describe the pathophysiology of commonly used drugs.
zz. Recognize the signs and symptoms related to the most commonly abused drugs.

aaa. Correlate the abnormal findings in assessment with the clinical significance in patients using the most commonly abused drugs.
bbb. Differentiate among the various treatments and pharmacological interventions in the management of the most commonly abused drugs.
ccc. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for patients using the most commonly abused drugs.
ddd. List the clinical uses, street names, pharmacology, assessment finding, and management for patients who have taken the following drugs or been exposed to the following substances:
(1) Cocaine
(2) Marijuana and cannabis compounds
(3) Amphetamines and amphetamine-like drugs
(4) Barbiturates
(5) Sedative-hypnotics (including rave drugs)
(6) Cyanide
(7) Narcotics/opiates
(8) Cardiac medications
(9) Caustics
(10) Common household substances
(11) Drugs abused for sexual purposes/sexual gratification
(12) Carbon monoxide
(13) Alcohols
(14) Hydrocarbons
(15) Psychiatric medications
(16) Newer antidepressants and serotonin syndromes
(17) Lithium
(18) MAO inhibitors

(19) Nonprescription pain medications
(a) Nonsteroidal anitinflammatory agents
(b) Salicylates
(c) Acetaminophen
(20) Theophylline
(21) Metals
(22) Plants and mushrooms
eee. Discuss common causative agents, pharmacology, assessment findings, and management for a patient with food poisoning.
fff. Discuss common offending organisms, pharmacology, assessment findings, and management for a patient with a bite or sting.
ggg. Integrate pathophysiological principles of the patient with a toxic substance exposure.
hhh. Differentiate between toxic substance emergencies based on assessment findings.
iii. Correlate abnormal findings in the assessment with the clinical significance in the patient exposed to a toxic substance.
jjj. Develop a patient management plan based on field impression in the patient exposed to a toxic substance.
9. Discuss the pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with an environmentally

induced or exacerbated medical or traumatic condition. (EMS2, EMS4, EMS9, EMS10, EMS12)
a. Define “environmental emergency.”
b. Describe the incidence, morbidity, and mortality associated with environmental emergencies.
c. Identify risk factors most predisposing to environmental emergencies.
d. Identify environmental factors that may cause illness or exacerbate a pre-existing illness.
e. Identify environmental factors that may complicate treatment or transport decisions.
f. List the principal types of environmental illnesses.
g. Define “homeostasis,” and relate the concept to environmental influences.
h. Identify normal, critically high, and critically low body temperatures.
i. Describe several methods of temperature monitoring.
j. Identify the components of the body’s thermoregulatory mechanism.
k. Describe the general process of thermal regulation, including substances used and wastes generated.
l. Describe the body’s compensatory process for overheating.
m. Describe the body’s compensatory process for excess heat loss.
n. List the common forms of heat and cold disorders.
o. List the common predisposing factors associated with heat and cold disorders.
p. List the common preventative measures associated with heat and cold disorders.
q. Integrate the pathophysiological principles and complicating factors common to environmental emergencies, and discuss differentiating features between emergent and urgent presentations.
r. Define heat illness.
s. Describe the pathophysiology of heat illness.
t. Identify signs and symptoms of heat illness.

u. List the predisposing factors for heat illness.
v. List measures to prevent heat illness.
w. Discuss the symptomatic variations presented in progressive heat disorders.
x. Relate symptomatic findings to the commonly used terms heat cramps, heat exhaustion, and heatstroke.
y. Correlate the abnormal findings in assessment with their clinical significance in the patient with heat illness.
z. Describe the contribution of dehydration to the development of heat disorders.
aa. Describe the differences between classical and exertional heatstroke.
bb. Define fever, and discuss its pathophysiologic mechanism.
cc. Identify the fundamental thermoregulatory difference between fever and heatstroke.
dd. Discuss how one may differentiate between fever and heatstroke.
ee. Discuss the role of fluid therapy in the treatment of heat disorders.
ff. Differentiate among the various treatments and interventions in the management of heat disorders.
gg. Integrate the pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient who has dehydration, heat exhaustion, or heatstroke.
hh. Define hypothermia.
ii. Describe the pathophysiology of hypothermia.
jj. List predisposing factors for hypothermia.
kk. List measures to prevent hypothermia.

ll. Identify differences between mild and severe hypothermia.
mm. Describe differences between chronic and acute hypothermia.
nn. List signs and symptoms of hypothermia.
oo. Correlate abnormal findings in assessment with their clinical significance in the patient with hypothermia.
pp. Discuss the impact of severe hypothermia on standard BCLS and ACLS algorithms and transport considerations.
qq. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient who has either mild or severe hypothermia.
rr. Define frostbite.
ss. Define superficial frostbite (frostnip).
tt. Differentiate between superficial frostbite and deep frostbite.
uu. List predisposing factors for frostbite.
vv. List measures to prevent frostbite.
ww. Correlate abnormal findings in assessment with their clinical significance in the patient with frostbite.
xx. Differentiate among the various treatments and interventions in the management of frostbite.
yy. Integrate pathophysiological principles and the assessment findings to formulate a field impression and implement a treatment plan for the patient with superficial or deep frostbite.
zz. Define near drowning.
aaa. Describe the pathophysiology of near drowning.

bbb. List signs and symptoms of near drowning.
ccc. Describe the lack of significance of fresh versus saltwater immersion, as it relates to near drowning.
ddd. Discuss the incidence of “wet” versus “dry” drownings and the differences in their management.
eee. Discuss the complications and protective role of hypothermia in the context of near drowning.
fff. Correlate the abnormal findings in assessment with the clinical significance in the patient with near drowning.
ggg. Differentiate among the various treatments and interventions in the management of near drowning.
hhh. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the near drowning patient.
iii. Define self-contained underwater breathing apparatus (SCUBA).
jjj. Describe the laws of gasses, and relate them to diving emergencies.
kkk. Describe the pathophysiology of diving emergencies.
lll. Define decompression illness (DCI).
mmm. Identify the various forms of DCI.
nnn. Identify the various conditions that may result from pulmonary over-pressure accidents.
ooo. Differentiate among the various diving emergencies.
ppp. List signs and symptoms of diving emergencies.
qqq. Correlate abnormal findings in assessment with their clinical significance in the patient with a diving-related illness.

rrr. Describe the function of the Divers Alert Network (DAN) and how its members may aid in the management of diving-related illnesses.
sss. Differentiate among the various treatments and interventions for the management of diving accidents.
ttt. Describe the specific function and benefit of hyperbaric oxygen therapy for the management of diving accidents.
uuu. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a management plan for the patient who has had a diving accident.
vvv. Define altitude illness.
www. Describe the application of gas laws to altitude illness.
xxx. Describe the etiology and epidemiology of altitude illness.
yyy. List predisposing factors for altitude illness.
zzz. List measures to prevent altitude illness.
aaaa. Define acute mountain sickness (AMS).
bbbb. Define high altitude pulmonary edema (HAPE).
cccc. Define high altitude cerebral edema (HACE).
dddd. Discuss the symptomatic variations presented in progressive altitude illnesses.
eeee. List signs and symptoms of altitude illnesses.
ffff. Correlate abnormal findings in assessment with their clinical significance in the patient with altitude illness.
gggg. Discuss the pharmacology appropriate for the treatment of altitude illnesses.

hhhh. Differentiate among the various treatments and interventions for the management of altitude illness.
iiii. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient who has altitude illness.
jjjj. Integrate the pathophysiological principles of the patient affected by an environmental emergency.
kkkk. Differentiate between environmental emergencies based on assessment findings.
llll. Correlate abnormal findings in the assessment with their clinical significance in the patient affected by an environmental emergency.
mmmm. Develop a patient management plan based on the field impression of the patient affected by an environmental emergency.
10. Explain gynecological principles and assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency. (EMS2, EMS4, EMS9, EMS10)
a. Review the anatomic structures and physiology of the female reproductive system.
b. Identify the normal events of the menstrual cycle.
c. Describe how to assess a patient with a gynecological complaint.
d. Explain how to recognize a gynecological emergency.
e. Describe the general care for any patient experiencing a gynecological emergency.
f. Describe the pathophysiology, assessment, and management of specific gynecological emergencies.
g. Recognize the importance of maintaining a patient’s modesty and privacy while still being able to obtain necessary information.
h. Discuss the need to provide care for a patient of sexual assault, while still preventing destruction of crime scene information.
i. Demonstrate serving as a role model for other EMS providers when discussing or

caring for patients with gynecological emergencies.
j. Demonstrate how to assess a patient with a gynecological complaint.
k. Demonstrate how to provide care for a patient with the following:
(1) Excessive vaginal bleeding
(2) Abdominal pain
(3) Sexual assault
11. Discuss safe, empathetic competence in caring for patients with behavioral emergencies.
a. Define behavior and distinguish between normal and abnormal behavior. (EMS2, EMS4, EMS9, EMS10)
b. Define behavioral emergency.
c. Discuss the prevalence of behavior and psychiatric disorders.
d. Discuss the factors that may alter the behavior or emotional status of an ill or injured individual.
e. Describe the medical legal considerations for management of emotionally disturbed patients.
f. Discuss the pathophysiology of behavioral and psychiatric disorders.
g. Describe the overt behaviors associated with behavioral and psychiatric disorders.
h. Define the following terms:
(1) Affect
(2) Anger

(3) Anxiety
(4) Confusion
(5) Depression
(6) Fear
(7) Mental status
(8) Open-ended question
(9) Posture
i. Describe the verbal techniques useful in managing the emotionally disturbed patient.
j. List the reasons for taking appropriate measures to ensure the safety of the patient, paramedic, and others.
k. Describe the circumstances when relatives, by-standers, and others should be removed from the scene.
l. Describe the techniques that facilitate the systematic gathering of information from the disturbed patient.
m. List situations in which the paramedic is expected to transport a patient forcibly and against his or her will.
n. Identify techniques for physical assessment in a patient with behavioral problems.
o. Describe the pathophysiology and management of excited delirium.
p. Describe methods of restraint that may be necessary in managing the emotionally disturbed patient.
q. List the risk factors for suicide.
r. List the behaviors that may be seen indicating that the patient may be at risk for suicide.
s. Integrate the pathophysiological principles with the assessment of the patient with behavioral and psychiatric disorders.
t. Differentiate between the various behavioral and psychiatric disorders based on the assessment and history.

u. Formulate a field impression based on the assessment findings.
v. Develop a patient management plan based on the field impressions.
w. Recognize the need for empathetic and respectful treatment for individuals experiencing behavioral emergencies.
x. Demonstrate safe techniques for managing and restraining a violent patient.
y. Explain causes and plight of homelessness.
z. Explain the common medical issues that homeless patients face.
aa. Identify local resources needed by the homeless and indigent patients.
12. Apply and integrate anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of common or major nontraumatic musculoskeletal disorders. (EMS2, EMS4, EMS9, EMS10)
• Disorders of the spine
• Joint abnormalities
• Muscle abnormalities
• Overuse syndromes
13. Apply and integrate knowledge of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, management of common or major diseases of the eyes, ears, nose, and throat, including nose bleed. (EMS2, EMS4, EMS9, EMS10)

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:
The student will be allowed one (1) makeup exam for any major exam missed in a given semester. No additional make-up exams shall be given beyond this.

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	94-100	4.0
B – Good	87-93	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 2855
Medical Patients
January, 2016

1	**Pulmonology**	
3	**Neurology**	
4	**Endocrinology**	
5	**Immunology**	
6	**Gastroenterology**	
7	**Urology and Nephrology**	
	MID-TERM EXAM	**3/7/2017**
8	**Toxicology and Substance Abuse**	
9	**Hematology**	
10	**Infectious Disease and Sepsis**	
11	**Psychiatric and Behavioral**	
12	**EENT Diseases**	
13	**Musculoskeletal Disorders**	

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.