

MASTER SYLLABUS

EMS 1314 Airway August, 2017

INSTRUCTOR: NELSON
OFFICE HOURS: As posted
CLASS TIME(S)/SECTIONS: M- R 8-4

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Course Description: Prepares paramedic students in managing a patient's airway using advanced life support techniques. Also provides instruction on troubleshooting and quickly identifying airway management problems; providing adequate respirations and oxygenation, and introduces the student to the importance of proper ventilation. (4 sch.)

Textbook(s) and Material(s): *Brady Paramedic Care: Principles and Practice-Volume 1 (2017)*
Chapter 15

Student Learning Outcomes:

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

1. Understand the importance of aggressive airway management.
2. Relate the concepts of oxygenation, respiration, ventilation to airway patency.

1. Apply and integrate comprehensive knowledge of anatomy, physiology, and pathophysiology into the care of a patient with airway or ventilation problems. (EMS2, EMS3, EMS4, EMS8, EMS9, EMS11)

2. Explain how to establish and maintain a patent airway. (EMS8, EMS9, EMS10, EMS11, EMS12, EMS13)
- a. Explain the primary objective of airway maintenance.
 - b. Identify commonly neglected pre-hospital skills related to airway.
 - c. Identify the anatomy of the upper and lower airway.
 - d. Describe the functions of the upper and lower airway.
 - e. Explain the differences between adult and pediatric airway anatomy.
 - f. Define gag reflex.
 - g. Explain the relationship between pulmonary circulation and respiration.
 - h. List the concentration of gases that comprise atmospheric air.
 - i. Describe the measurement of oxygen in the blood.
 - j. Describe the measurement of carbon dioxide in the blood.
 - k. Describe peak expiratory flow.
 - l. List the factors that cause decreased oxygen concentrations in the blood.
 - m. List the factors that increase and decrease carbon dioxide production in the body.

- n. Define atelectasis.
- o. Define FiO₂.
- p. Differentiate between hypoxia and hypoxemia.
- q. Describe the voluntary and involuntary regulation of respiration.
- r. Describe the modified forms of respiration.
- s. Define normal respiratory rates and tidal volumes for the adult, child, and infant.
- t. List the factors that affect respiratory rate and depth.
- u. Explain the risk of infection to EMS providers associated with ventilation.
- v. Define pulsus paradoxus.
- w. Explain the implications of partial airway obstruction with good and poor air exchange.
- x. Describe airway maintenance devices typically found in the home-care environment.
- y. Describe devices that provide or enhance alveolar ventilation in the home-care setting.
- z. List modes of artificial ventilation and an out-of-hospital situation where each might be employed.
- aa. Define complete airway obstruction.
- bb. Describe causes of upper airway obstruction.
- cc. Describe causes of respiratory distress.
- dd. Describe manual airway maneuvers.
- ee. Describe the Sellick (cricoid pressure) maneuver.
- ff. Describe complete airway obstruction maneuvers.
- gg. Explain the purpose for suctioning the upper airway.
- hh. Identify types of suction equipment.
- ii. Describe the indications for suctioning the upper airway.
- jj. Identify types of suction catheters, including hard or rigid catheters and soft catheters.
- kk. Identify techniques of suctioning the upper airway.
- ll. Identify special considerations of suctioning the upper airway.
- mm. Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique of tracheobronchial suctioning in the intubated patient.
- nn. Describe the use of an oral and nasal airway.
- oo. Identify special considerations of tracheobronchial suctioning in the intubated patient.
- pp. Define gastric distention.
- qq. Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for inserting a nasogastric tube and an orogastric tube.
- rr. Identify special considerations of gastric decompression.
- ss. Describe the indications, contraindications, advantages, disadvantages, complications, and technique for inserting an oropharyngeal and nasopharyngeal airway.
- tt. Describe the indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient by the following:

- (1) Mouth-to-mouth
 - (2) Mouth-to-nose
 - (3) Mouth-to-mask
 - (4) One person bag-valve-mask
 - (5) Two person bag-valve-mask
 - (6) Three person bag-valve-mask
 - (7) Flow-restricted, oxygen-powered ventilation device
- uu. Explain the advantage of the two-person method when ventilating with the bag-valve-mask.
- vv. Compare the ventilation techniques used for an adult patient to those used for pediatric patients.
- ww. Describe indications, contraindications, advantages, disadvantages, complications, and technique for ventilating a patient with an automatic transport ventilator (ATV).
- xx. Explain safety considerations of oxygen storage and delivery.
- yy. Identify types of oxygen cylinders and pressure regulators (including a high pressure regulator and a therapy regulator).
- zz. List the steps for delivering oxygen from a cylinder and regulator.
- aaa. Describe the use, advantages, and disadvantages of an oxygen humidifier.
- bbb. Describe the indications, contraindications, advantages, disadvantages, complications, liter flow range, and concentration of delivered oxygen for supplemental oxygen delivery devices.
- ccc. Discuss tracheostomy, stoma, and tracheostomy tube.
- ddd. Demonstrate the insertion of a new inner cannula and/or the use of an endotracheal tube to temporarily maintain an airway in a tracheostomy patient.
- eee. Summarize a laryngectomy.
- fff. Define how to ventilate with a patient with a stoma, including mouth-to-stoma and bag-valve-mask-to-stoma ventilation.
- ggg. Describe the special considerations in airway management and ventilation for patients with facial injuries.
- hhh. Describe the special considerations in airway management and ventilation for the pediatric patient.
- iii. Differentiate endotracheal intubation from other methods of advanced airway management.
- jjj. Describe the indications, contraindications, advantages, disadvantages, and complications of endotracheal intubation.
- kkk. Describe laryngoscopy for the removal of a foreign body airway obstruction.
- lll. Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for direct laryngoscopy.
- mmm. Describe visual landmarks for direct laryngoscopy.
- nnn. Describe use of cricoid pressure during intubation.
- ooo. Describe indications, contraindications, advantages, disadvantages, complications, equipment, and technique for digital endotracheal intubation.
- ppp. Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for using a dual lumen airway.
- qqq. Describe the indications, contraindications, advantages, disadvantages,

	<p>complications, and equipment for rapid sequence intubation with neuromuscular blockade.</p> <p>rrr. Identify neuromuscular blocking drugs and other agents used in rapid sequence intubation.</p> <p>sss. Describe the indications, contraindications, advantages, disadvantages, complications, and equipment for sedation during intubation.</p> <p>ttt. Identify sedative agents used in airway management.</p> <p>uuu. Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for nasotracheal intubation.</p> <p>vvv. Describe the indications, contraindications, advantages, disadvantages, and complications for performing an open cricothyrotomy.</p> <p>www. Describe the equipment and technique for performing an open cricothyrotomy.</p> <p>xxx. Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for transtlaryngeal catheter ventilation (needle cricothyrotomy).</p> <p>yyy. Describe methods of assessment for confirming correct placement of an endotracheal tube.</p> <p>zzz. Describe methods for securing an endotracheal tube.</p> <p>aaaa. Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for extubation.</p> <p>bbbb. Describe methods of endotracheal intubation in the pediatric patient.</p> <p>cccc. Discuss the need to oxygenate and ventilate a patient.</p> <p>dddd. Discuss the necessity of establishing and/or maintaining patency of a patient's airway.</p> <p>eeee. Demonstrate standard precautions to defend against infectious and communicable diseases.</p>
3.	<p>Demonstrate how to maintain a patent airway. (EMS8, EMS9, EMS10, EMS11, EMS12, EMS13)</p> <p>a. Perform body substance isolation (BSI) procedures during basic airway management, advanced airway management, and ventilation.</p> <p>b. Perform pulse oximetry.</p> <p>c. Perform end-tidal CO₂ detection.</p> <p>d. Perform peak expiratory flow testing.</p> <p>e. Perform manual airway maneuvers, including the following:</p> <ol style="list-style-type: none"> (1) Opening the mouth (2) Head-tilt/chin-lift maneuver (3) Jaw-thrust without head-tilt maneuver (4) Modified jaw-thrust maneuver <p>f. Perform manual airway maneuvers for pediatric patients, including the following:</p> <ol style="list-style-type: none"> (1) Opening the mouth (2) Head-tilt/chin-lift maneuver (3) Jaw-thrust without head-tilt maneuver (4) Modified jaw-thrust maneuver <p>g. Perform the Sellick maneuver (cricoid pressure).</p> <p>h. Perform complete airway obstruction maneuvers, including the following:</p> <ol style="list-style-type: none"> (1) Heimlich maneuver (2) Finger sweep

- (3) Chest thrusts
- (4) Removal with Magill forceps
- i. Demonstrate suctioning the upper airway by selecting a suction device, catheter, and technique.
- j. Perform tracheobronchial suctioning in the intubated patient by selecting a suction device, catheter, and technique.
- k. Demonstrate insertion of a nasogastric tube.
- l. Demonstrate insertion of an orogastric tube.
- m. Perform gastric decompression by selecting a suction device, catheter, and technique.
- n. Demonstrate insertion of an oropharyngeal airway.
- o. Demonstrate insertion of a nasopharyngeal airway.
- p. Demonstrate ventilating a patient by the following techniques:
 - (1) Mouth-to-mask ventilation
 - (2) One-person bag-valve-mask
 - (3) Two-person bag-valve-mask
 - (4) Three person bag-valve-mask
 - (5) Flow-restricted, oxygen-powered ventilation device
 - (6) Automatic transport ventilator
 - (7) Mouth-to-stoma
 - (8) Bag-valve-mask-to-stoma ventilation
- q. Ventilate a pediatric patient using the one- and two-person techniques.
- r. Perform ventilation with a bag-valve-mask with an in-line small-volume nebulizer.
- s. Perform oxygen delivery from a cylinder and regulator with an oxygen delivery device.
- t. Perform oxygen delivery with an oxygen humidifier.
- u. Deliver supplemental oxygen to a breathing patient using the following devices:
 - (1) Nasal cannula
 - (2) Simple face mask
 - (3) Partial rebreather mask
 - (4) Nonrebreather mask
 - (5) Venturi mask
 - (6) BiPAP/CPAP
- v. Perform stoma suctioning.
- w. Perform retrieval of foreign bodies from the upper airway.
- x. Perform assessment to confirm correct placement of the endotracheal tube.
- y. Intubate the trachea by the following methods:
 - (1) Orotracheal intubation
 - (2) Nasotracheal intubation
- z. Perform airway care utilizing multi-lumen, single lumen, and supraglottic airways.
- aa. Discuss the implications of digital intubation, transillumination, and open cricothyrotomy.
- aa. Secure an endotracheal tube.
- bb. Perform endotracheal intubation in the pediatric patient.
- cc. Perform transtracheal catheter ventilation (needle cricothyrotomy).
- dd. Perform extubation.

ee.	Perform replacement of a tracheostomy tube through a stoma.
ff.	Perform and interpret waveform capnography.
4.	Integrate a comprehensive knowledge of the causes and pathophysiology into the management of shock or respiratory failure or arrest with an emphasis on early intervention to prevent arrest. <small>EMS2, EMS4, EMS8, EMS9, EMS11</small>

Attendance: The student will follow both school and program-specific attendance requirements as outlined in the CCC and Health Science handbooks.

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) make-up exam for any major exam missed in a given semester. No additional make-up exam 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.

Revised Fall of 2009 Office of Institutional Effectiveness

COURSE OUTLINE
EMS 1314
Airway
August, 2017

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.

“No Airway, No Patient”

****NOTE:**

Due to the variable nature of the paramedic courses, this course may be integrated within other courses and lab exercises.

The duration of this class and other classes within the curriculum will vary based upon student needs and ensuring that cognitive, psychomotor and affective learning domains are met throughout the paramedic program.

*** You will integrate the cognitive information learned into practical applications in lab to include use of high/low fidelity manikins. Additional opportunities to practice will occur in clinical and field exercises***