

PRINCETON RESCUE SQUAD
Critical Care Transport (CCT)



Course Syllabus
&
Student Handbook

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Signature Form

(To be remitted to Paula Johnson, Education Director)

Acknowledgement of Policies, Procedures and Requirements

I have received a copy of the Student Handbook for Princeton Rescue Squad's – Critical Care Transport (CCT) Training Program.

These policies, procedures and requirements have been completely explained to me by the Course Instructor and I fully understand them.

I realize that non-compliance may result in dismissal from the course.

I understand that should a question arise concerning any aspect of this Training Program I should contact Paula Johnson, Education Director, at the earliest appropriate time.

CCT Student Signature

CCT Student Name (Print)

Date ____/____/____

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Mission

To effectively and professionally provide a quality education to those students enrolled in educational programs.

To fulfill our mission, the administration, faculty, and educational staff are committed to and focused on the educational endeavors of our student participants.

PREFACE

This Course Syllabus & Student Handbook is designed to provide a source of information for the Critical Care Transport (CCT) Program. As a student, your actions are governed by numerous policies with various sources. **It is your responsibility to be aware of all of these policies.**

Policies and procedures that are program-specific (CCT Students only) are located within this Handbook.

Information related to institutional policies and procedures can be found in the ***Princeton Rescue Squad Education Catalog***.

Princeton Rescue Squad Education Catalog:

All policies and procedures included in the catalog apply to all students at Princeton Rescue Squad. In the Princeton Rescue Squad Education Catalog, you will find information about people on the campuses, information regarding services available to you, and a description of selected policies and procedures designed to create student success. You may access the Princeton Rescue Squad Education Catalog on the official website by clicking on Classes and clicking the pdf file "Princeton Rescue Squad Education Catalog".



Course:	Critical Care Transport
Medical Director/ Lead Instructor	Dr. Sherri Ross, DO Chris Pendleton, MCCP
Education Director:	Paula Johnson, M.Ed., NCEE, NRP
Office Hours:	0900-1700
Course Location:	Princeton Rescue Squad – Training Center
Times:	0900-1700
Dates:	Wednesdays Beginning: 3/4/2020 Ending: 6/3/2020
Course Delivery Method	Traditional
Required Text	“Critical Care Transport” (AAOS); Jones & Bartlett Publishing, 2e., ISBN: 978-1-284-04099-9
Pre-Requisite(s)	Please review the “ <i>Registration Information for Critical Care Transport Program</i> ” Packet for details

Course Description:

To provide experienced Paramedics and Registered Nurses with the knowledge and skills necessary to deliver outstanding advanced care for the critical patient during transfers between hospitals, specialty referral centers, and extended care facilities.

Learning Outcomes:

Upon successful completion of the CCT Education Program, the student will be able to:

1. Sit for the West Virginia OEMS CCT Certification Exam.
2. Utilize effective therapeutic communication and advanced assessment skills consistent with the role of the professional CCT to maintain and/or improve patient care in the interfacility setting under the guidance of physician provided orders.
3. Understand and appreciate the legal-ethical issues that influence critical decision-making in the interfacility transport environment.
4. Apply critical thinking and problem-solving skills to formulate and implement advanced emergency care based on assessment findings for a critically ill patient.

5. Identify and implement strategies to reduce morbidity and mortality during interfacility transports.

Instructional Procedures:

This program will meet once per week for 8 hours over a period of 14 weeks. Each week, the sessions will consist of lecture and/or laboratory components geared specifically to meet the foundational knowledge of the student interested in obtaining WV-CCT certification. Methods for instruction will not be limited to lecture but will include hands-on experience with typical equipment utilized in the field via scenario-based training and simulation level education to enhance critical thinking and decision-making skills.

Procedures for Evaluation:

Students must maintain an overall grade point average (GPA) of at least 76% in order to complete the course. The student’s academic standing will be discussed with him/her at regular intervals throughout the program. Any student who falls below 76% at the completion of the program will not be released to sit for the WV OEMS CCT examination.

Grading Components and Weights:

The CCT student’s grade will be the sum of the weighted scores comprising the parameters of course work outlined below.

Formative Assessments:	Summative Assessments:
Daily Quiz = 15%	Module Exam = 50%
Affective Evaluation = 5%	Case Simulation Exam = 30%

Grading Scale:

100-90 = A 89-83 = B 82-76 = C 75-69 = D <68 = F

All students must maintain a “C” average at the completion of each module to continue throughout the course.

Students are expected to complete all work as assigned. Students may only make up a missed exam with prior approval of the Program Director. Missed exams must be made up within one week and cannot be made up during scheduled class time. Written exams that are not made up within a week’s time frame a grade of “0%” will be recorded for that test.

Students will be provided a progress report at regular intervals(increments no longer than 25% of the program), at midterm, and at the end of the CCT course on cognitive, psychomotor and affective performance.

Clinical Internship:

In addition to classroom sessions, all students MUST complete **48 hours of clinical internship** in the following categories:

Unit:	Required Hours:
L&D	4
NICU/PICU	8
SICU	6
CCU	6
Field Internship	24

Failure to complete the above listed clinical requirements AND/OR failure to submit ALL mandatory supporting documentation prior to the completion of the course will result in an incomplete grade. Any student assigned an “incomplete” is ineligible for testing and would result in failure of the course.

Attendance:

All material is important to your success; therefore, students absent more than 1 class session without a valid excuse will be dismissed from the course.

There are two types of absences recognized as a “valid excuse” by Princeton Rescue Squad’s Education Department: (1) absence resulting from participation in an activity where you are officially representing the Education Department; and (2) absence caused by unforeseeable and unavoidable circumstance which is beyond your control. All other absences are considered willful and will not count as excused. It is your responsibility to provide your instructor with a proper explanation and documentation of these valid absences. It is the responsibility of the student to make up any work or testing missed.

Tardiness will not be tolerated. Any student who shows up later than 15 minutes into the beginning of a course or leaving a class session 30 minutes or more before the end of the class day will result in the mark of tardy on his/her record. An accumulation of 5 tardies will result in an unexcused absence.

Academic Dishonesty:

As a student and pre-hospital professional, you are expected to adhere to a professional code of conduct and not engage in plagiarism, cheating, falsifying information or records, or any other such activity. Failure to adhere to this code of conduct will result in disciplinary action up to and including dismissal from the program.

Grounds for Dismissal:

A student may be dismissed from the program for the following reasons:

1. Absenteeism greater than 1 unexcused class session.
2. Receiving a “D” or “F” as a cumulative GPA.
3. Insubordination (in classroom or in clinical)
4. The conviction and/or known use of, distribution of, or possession of illegal drugs, or controlled substances.
5. Failure to accomplish clinical assignments and objectives
6. Unprofessional or unethical conduct
7. Cheating in related or professional EMS courses or in clinical documentation.

Appeal Procedures

Any student who is dismissed from the program has a right to file an appeal on the decision. Appeal forms can be obtained from the Program Director. Once an appeal form has been filed with the Program Director, all supporting documentation and evidence from the Faculty and student will be submitted to the Medical Director and Advisory Committee for review. The case may be resolved at this level, or if thought warranted by the Advisory Board or requested in writing by the student the case shall be forwarded to the CEO, COO, and Board of Directors.

The CEO, COO, and Board of Directors shall present to the accused student and the person making the accusation written notification of the charges which shall include:

- A statement that a hearing will be held before the Board of Directors, together with the notice of the date, time, and place of the hearing.
- A clear statement of the facts and evidence to be presented in support of the charges made.

A recommendation by the Board of Directors for imposition of sanctions is final. The Board of Directors may also recommend that the imposition of sanctions be held in abeyance where appropriate.

A student may request readmission after one calendar year. It shall be the responsibility of the student to provide the Education Director, CEO, and COO with reasons why he/she should be given special consideration for readmission. He/she may do this by letter, by scheduled appearance before the group, or both.

Privacy Policy

As progress reports and course completion material are maintained by the Princeton Rescue Squad’s Education Department; CCT Program, we are required to follow the Family Educational Rights and Privacy Act of 1974, or FERPA.

FERPA protects the privacy of student records. The act governs the release of educational records and the student's right to view your educational records and request corrections of any inaccuracies. FERPA also covers the procedures for release of such directory information as your name, address, social security number, date of birth, and phone number; as well as, maintaining policy that requests for access to such information be limited.

Student Advisory & Evaluations

If the CCT Instructor should feel the need to have a mandatory meeting with a student to discuss an item(s) or subject(s) of concern, to include, but not limited to:

Excessive absences and tardiness, failure to turn in assignments / clinical rotations on time, classroom / clinical behavior concerns, plagiarism, cheating, struggling or failure to maintain a GPA of 70%, etc.

A Student Advisory Form will be filled out and signed by both the Faculty member addressing the concern, and the student. Once the concern has been documented, the CCT Program Instructor and student will discuss possible resolutions to the problem and a proposed action plan will be written on the Advisory Form. The student may use the Advisory Form to record a rebuttal against the initial concern or proposed action plan. The instructor will then mark the form "unresolved" and forward it to the CCT Program Director who will make a determination on a second Advisory Form. Copies of these completed Advisory Forms are available to the student; however, originals must and will be retained by the CCT Program.

Health & Safety:

It is expected that the student's physical examination indicates that he/she is physically and emotionally capable of performing the objectives of the program. Maintenance of health is the responsibility of the student. It is requested that the student report any change in their health status to the Program Instructor. A physician's report of a student's current health status may be requested by the Program Instructor as indicated by the student's behavior and/or physical appearance at any time during the program.

If a student is or becomes pregnant during this course, she must file a statement from her physician including medical instructions that will allow or disallow her participation in the required clinical exposures and activities. It shall be the responsibility of the student to inform, and keep informed, her physician as to what these exposures and activities will be during this program.

There must be adequate safeguard for the health, safety and privacy of patients, faculty and students. All incidents of conflict, injury, etc. are to be reported to the Program Instructor immediately.

Any student who, while enrolled in this training program, violates any federal, state or local law or procedure, or hospital guideline or policy relating to Emergency Medical Services operation or their safety sensitive position may be subject to suspension or administrative dismissal from the CCT program.

In Case of Injury:

All students participating in the Princeton Rescue Squad's Education Department CCT Program are required to report any injury, near miss or unsafe activity that occurs in conjunction with activities performed during classroom, laboratory, or clinical sessions.

Incident Forms can be obtained from the faculty and are to be presented to the Education Director within 24 hours. Examples of reportable incidents include:

1. Motor Vehicle Accident involving a student during clinical rotation.
2. Student injuries or near misses occurring in the classroom, practical lab or clinical sites.
3. Potential or actual patient injury involving or witnessed by a clinical student.
4. A student witnessing another individual involved in questionable, Potentially unsafe or illegal activity in conjunction with the Education Program.
5. Any instance when a student wants a written report.

Social Justice Statement:

Consistent with its comprehensive mission and recognizing that the development of human potential is a fundamental goal in a democratic society, Princeton Rescue Squad's Education Department promotes a system that values cultural and ethnic diversity and understanding; that provides for the preparation of students for full and meaningful participation in a changing world; and that promotes equitable and fair treatment in every aspect of campus life and employment for all persons regardless of race, national origin, gender, sexual preference, sexual orientation, age, religion, veteran status or disability.

Clinical Objectives:

The main objective of clinical rotations is to allow the student to observe and apply learned knowledge and skills they have obtain during classroom and lab activities. The student will have a set number of clinical hours as well as specific goals that they must meet during their clinical rotations. A review of the Clinical Objectives, required documentation, and completion competencies will be discussed with the students by the designated Clinical Coordinator or Faculty member prior to the start of clinical rotations.

During clinical rotation's the student is operating under the medical license and guidance of this program's medical director and no other physician is responsible for the students' activity during their internship. You have one week from the date of the clinical rotation to submit your

paperwork for that date. If documentation is not received in that time frame, you will receive negative deductions on your affective evaluation report.

Pre-clinical Requirements:

Before any student is permitted to attend internship, he/she must:

1. Submit all required immunity records
 - a. MMR
 - b. TDAP
 - c. Hep B
 - d. TB Skin Testing (PPD)
 - e. Seasonal flu shot (*if attending clinical between 10/1 and 4/30*)
2. Must have completed and passed a criminal background check as directed by the WVOEMS.
3. Submit the signed "Student Clinical Responsibilities" Document to the Instructional Faculty.
4. Submit requests detailing the following criteria to the designated faculty **with a minimum of 2 weeks advanced notice:**
 - a. Date of Internship Rotation
 - b. Location of Internship (hospital unit/EMS agency)
 - c. Time of Internship Rotation

Student Expectations While Attending Clinical Internship:

1. Appropriate dress for the clinical rotation will include:
 - a. Dark blue or black work-type pants.
 - b. Official Princeton Rescue Squad's Education Department polo indicating the EMS program of study with the appropriate PRS Educational Institute logo.
 - c. Black shoes. Boots are preferred in the field and black soft-shoes are preferred in the hospital setting.
 - d. Students must wear ID badges for all clinical rotations and the ID badge needs to be surrendered to the Instructor at the end of the program.
 - e. The student cannot wear any non-Princeton Rescue Squad's Education Department symbols or lapel pins on uniform shirt or cap.
 - f. The student should not wear a cap during clinical rotations inside the hospital and the only allowable cap/hat during field rotations is a Princeton Rescue Squad cap or plain dark blue/black cap.
 - g. Long hair should be pulled up and away from the face.
 - h. No visible piercings unless it is a female student wearing post earrings only.
2. While performing clinical rotations, students are to follow the EMS Code of Ethics (Integrity, Compassion, Accountability, Respect, Empathy):

- a. Whether the student is interacting with staff, families, or patients, any deviation in behavior noted by the preceptor is grounds for dismissal and termination of that day's clinical rotation.
3. While performing clinical rotations, students are to:
 - a. Perform **ONLY** the skills they are signed off to perform on live patients.
 - b. Make good use of time.
 - c. Assist staff with their needs.
 - d. Ask questions as they arise in response to patient care plans, skills review, and other appropriate questions specific to their paramedic education.
4. While performing clinical rotations, the student will keep with them at all times:
 - a. The CCT Syllabi and Course Handbook
 - b. A copy of the Preceptor Orientation Manual
 - c. Copies of the Clinical/Field Shift Evaluation Worksheet

Transportation to/from Clinical:

- Transportation to and from all clinical assignments is the responsibility of the student.
- If the student is unable to make clinical site due to car trouble, it is the student's responsibility to notify that clinical area at least one (1) hour before schedule starting time.
- Some clinical areas are a distance from course site or home and students may wish to combine clinical areas with other students to carpool to the site.

Employment during Clinical:

- The student may complete his/her clinical internship time at location of employment but the student **MAY NOT** complete clinical hours during regular scheduled paid time.
- The student missing class or clinical due to a conflicting working schedule will be marked with an unexcused absence.
- The tardiness in class related to work would be added as an absence as any other tardy times will.
- Special squad education sessions required for a student's employment that interferes with scheduled class time will be excused, if a copy or letter of attendance is submitted to the program coordinator. This student is required to make up time (hours) missed. Arrangements can be made with program coordinator.

Clinical Attendance:

- The student should be at each clinical site at least 15 minutes before scheduled time.
- If the student is unable to make clinical site for any reason, See Transportation (above).

- The student is supposed to complete all clinical rotations as scheduled. If the student needs to reschedule a rotation, it is the student's responsibility to notify the clinical coordinator.
- It is the student's responsibility to complete clinical sheets and to hand deliver these forms to the instructor. The recommendation is to turn in completed forms at least once per week.
- Attendance is required. Missing two (2) clinical rotations without a valid excuse will cause the student to be dismissed from the program. Tardiness of 15 minutes or more, or early departure of 30 minutes or greater from an assigned clinical internship will result in a mark of tardy on the student's record. Accumulating 5 tardies will result in 1 unexcused absence.

Successful Completion of Internship:

For a student to meet the criteria of successful completion for the internship component of the program, he/she MUST provide the following:

1. Complete all hours designated below:

Unit:	Required Hours:
L&D	4
NICU/PICU	8
SICU	6
CCU	6
Field Internship	24

2. Provide the following documentation for EACH Internship Rotation:

Hospital Unit:	EMS (Field) Internship:
<ul style="list-style-type: none"> • "Clinical" Shift Evaluation Worksheet 	<ul style="list-style-type: none"> • "Field" Internship Shift Evaluation Worksheet
<ul style="list-style-type: none"> • Student Evaluation of Clinical Preceptor 	<ul style="list-style-type: none"> • "CCT – PCR" on ALL documented patient assessment encounters
	<ul style="list-style-type: none"> • Skills Checklist for CCT
	<ul style="list-style-type: none"> • Student Evaluation of Clinical Preceptor

Recommended Timeline for Internship Completion:

Clinical Experiences should occur after the student has demonstrated competence in skills and knowledge in the didactic and laboratory components of the course.

SICU/CCU:	On or After 4/9/2020
L&D:	On or After 4/29/2020
PICU/NICU:	On or After 5/20/2020
Field Internship:	On or After 4/9/2020

Preceptor Clinical Training Guidelines:

The following pages give you guidance on the actions that EMS students are allowed to perform in each individual clinical setting/unit to which he/she is assigned. REMINDER: Only skills that have been signed off by the Instructor can be performed in the clinical setting. At any time a preceptor or department manager can request the student's documentation to identify/verify appropriate skills.

1. Observe and obtain patients history and complete physical exam.
2. Review chart thoroughly including labs, radiology reports and physicians progress notes.
3. Review any radiology films available
4. Observe and participate with the maintenance of basic and advanced airway management.
 - a. Suctioning
 - i. Orally
 - ii. Nasally
 - iii. Endotracheally
 - iv. Tracheally
 - b. Oxygen administration by various devices
 - c. Incentive Spirometer
 - d. Chest PT
 - e. Administration of Breathing Treatments
5. Observe and assist with peripheral or central IV placement and maintenance, including Swan Ganz Catheters, and focusing on:
 - a. Sterile techniques
 - b. Cardiac output
 - c. Pulmonary artery wedge pressure
 - d. All swan pressure readings and wave forms
6. Observe and assist with administration of medications as well as calculating drug doses on their own and showing work on the skill sheet. Participants must calculate all IV infusions that the patient would be receiving.
7. Observation and assist with Pulse Ox, ETCO₂, pressure reading on ventilators, Accucheck, etc.
8. Read 12 Lead EKG's of patient and compares finding with preceptor and document finding on clinical skills sheets.
9. Observe IABP mechanics, inflation/deflation waveforms, timing ratio, and troubleshooting.
10. Observe ICP pressure monitoring devices, waveforms, maintenance and releasing of pressure.

CCT COURSE

VERIFICATION OF SKILL COMPETENCIES

STUDENT NAME: _____

The above-named student is qualified to perform any BLS or ALS procedures within the scope of the WVOEMS protocol. Additionally, the student is qualified to perform any of the following procedures while under the direct supervision of the Clinical Preceptor or his Designated Representative. **The Student is only allowed to perform the skills with the Instructor's signature in the appropriate box designated for that skill.**

NAME OF SKILL	DATE COMPETENCY MET:	INSTRUCTOR VERIFICATION:
Medication Administration		
Drug Calculations		
Endotracheal Tube Insertion		
King/Combi-tube Insertion		
LMA Insertion		
Ventilator Operations		
Rapid Sequence Intubation		
Chest Decompression		
Cricothyrotomy		
12 Lead ECG Interpretation		
Hemodynamic Monitoring Devices		

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Clinical Internship Expectations:

The following agreement is between the Princeton Rescue Squad's Education Department–CCT Program and the student of said school.

1. Recognize that I am responsible for my own pre-hospital professional behavior and am required to be able to perform all activities taught in the CCT course.
2. Secure consultation and/or assistance of the clinical preceptor in those clinical areas if I am unsure and/or inexperienced. I will make specific time arrangement with the instructors/coordinator when indicated.
3. Recognize that CCT clinical hours are a **LEARNING** experience rather than a work experience. I will be responsible to learn as much as possible from each clinical experience and document as required.
4. As a student I am not allowed to be paid as an employee while attending internship rotations and/or perform CCT level skills and assessments during employment hours.
5. Evaluate my own learning experiences and progress. I will determine if I need special kind of learning experiences, inform the clinical lab instructor or coordinator, and keep the required record of experiences gained and needed.
6. Schedule any non-emergency appointments (doctor, dental, etc.) after class or clinical times.
7. Assume responsibility for transportation to and from assigned areas. I will not expect any special considerations of hours worked or school days off in order to meet this responsibility.
8. Notify Princeton Rescue Squad's Education Director if ill and unable to attend class or notify the clinical site at the hospital/ambulance service if unable to attend clinical. I will notify these persons each day in case of an extended illness. Notification will be before the scheduled class or clinical time not during or after the class or clinical time.
9. Be aware of the fact that any situation that indicates cheating or lying or that I have plagiarized for any purpose (tests, papers, etc.) will be reviewed by all faculty members and myself. I recognize that the faculty will then act, which can result in an "F" for the course and dismissal from the program.
10. Recognized that the clinical component of the CCT program is extremely important and that all students are expected to complete all clinical required hours. I recognized that failure to complete semester clinical would result in an "Incomplete" and the inability to sit for the WVOEMS certification examination.
11. Observation by faculty/ clinical preceptor in a clinical setting is a mandatory requirement in order to pass a practicum course.
12. Please recognize that avoidable tardiness is both rude and inconsiderate to both the instructors and peers. Tardiness definition is any period of up to 15 minutes after class has begun. If I am tardy five (5) times during the CCT internship or class sessions, then I recognize that this will then become an absence from a class period. I should recognize that after six (6) tardy episodes I would expect to have a conference with instructors or coordinator regarding dismissal from the program.
13. Assume accountability for professional conduct and appropriate moral and ethical behaviors that include truthfulness, confidentiality, and an awareness of patient's rights.

Student Name: _____

Student Signature: _____ Date: _____

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MODULE 1

INTRODUCTION TO CRITICAL CARE TRANSPORT (CCT)

Goal:

Student will identify, relate and apply the roles and responsibilities involved in being a member of the Critical Care Transport (CCT) team.

Objectives:

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

- 1.1 Describe and define a CCT.
- 1.2 Understand the proper sequence of events that must transpire to initiate and complete a CCT.
- 1.3 Identify personnel requirements for the interfacility transport team.
- 1.4 Define and understand the composition of a critical care transport team, communicator, and medical direction program.
- 1.5 Have the understanding of each team member's scope of practice and responsibilities in the critical care environment.
- 1.6 Recognize and understand terminology used in the critical care environment and define.
- 1.7 Will be able to use the appropriate communication skills before, during, and after the CCT, and have basic knowledge of communication devices.
- 1.8 Will be able to describe and complete the process of obtaining the critical care transfer from the sending facility.
- 1.9 Accurately and concisely describe and complete the necessary documentation involved in a CCT.
- 1.10 Identify the differences and process involved in quality management and continuous quality improvement.

MODULE 2

LAB VALUES AND DATA INTERPRETATION

Goal:

Student will gain knowledge of commonly used lab values such as interpretation, signs and symptoms associated with abnormal values, treatment, and therapy involved improving patient outcome.

Objectives:

At the conclusion of this module, the student will be able to:

- 2.1 Define and state the normal lab values and ranges routinely encountered in the critical care setting.
- 2.2 Identify causes of abnormal lab values and how they affect the management of CCT patients.

- 2.3 Interpret arterial blood gas (ABG) levels and the differentiation and implications of:
- 2.4 Identify treatment options for patients with abnormal ABG levels.
- 2.5 List compensatory mechanisms for acid-base disturbances.
- 2.6 Determining the causes of imbalances by utilizing the anion gap

MODULE 3

PHARMACOLOGY

Goal:

The student will be able to integrate pathophysiological principles of pharmacology and the assessment findings to formulate an impression and implement and/or continue a pharmacological management plans for the CCT patient. They should also be able to calculate medications appropriately and safely for all patients.

Objectives:

At the conclusion of this module, the CCT applicant will be able to:

- 3.1 Discuss and explain the given drug terminology that are necessary to safely interpret information in drug references.
- 3.2 Identify the administration routes and techniques for drug calculation
- 3.3 Identify and explain the CCT Drugs according to their classification, mechanism of action, indications, contraindications, side effects, dosages, and considerations.
- 3.4 Demonstrate proper procedures and techniques used to administer medications.
- 3.5 Perform appropriate drug dosage calculations and conversions accurately and efficiently
- 3.6 Demonstrate knowledge of the abbreviations commonly used
- 3.7 Convert between systems of metric and apothecary without error
- 3.8 Interpret medication orders and perform mathematical calculations and conversions required, correctly
- 3.9 Calculate, without error, drug dosages
- 3.10 Reduce or enlarge formulas to meet specific requirements of medication orders
- 3.11 Display proficiency in calculations of dilution and concentration
- 3.12 Prepare medications for safe administration using selected routes of administration
- 3.13 Manipulate medication delivery systems safely, including intravenous tubing and infusion pumps

MODULE 4

RESPIRATORY MANAGEMENT

Goal:

Students will understand respiratory system and be able to appropriately manage respiratory complications.

Objectives:

Upon completion of this module, students will be able to:

- 4.1 Have a better understanding of the functional anatomy of the respiratory system.
- 4.2 Perform an adequate assessment of the respiratory system
- 4.3 Auscultate various normal and abnormal breath sounds
- 4.4 Understand and use respiratory diagnostic and monitoring tools
- 4.5 List the steps in the gas exchange process
- 4.6 Describe the pulmonary blood flow.
- 4.7 Identify various pulmonary complications / obstructive disease processes and the treatment interventions.
- 4.8 Be proficient in Ventilator & Pharmacological Management.
- 4.9 Adequately recognize and treat the compromised respiratory patient.
- 4.10 Understand and state the rationale for the use of RSI
- 4.11 Understand and state the drugs commonly used for RSI
- 4.12 Understand and demonstrate the importance of
 - Proper selection of drugs
 - Proper sequence
 - Proper dosage
 - Proper time
- 4.13 State the appropriate selection of drugs based on the patient's overall condition
- 4.14 Safely administer all drugs
- 4.15 Know the indications and contraindications of all the drugs used for RSI
- 4.16 Discuss the concept of the difficult airway.
- 4.17 Describe which factors may make a patient more difficult to bag
- 4.18 Describe which anatomical factors and which disease states may make laryngoscopy more difficult. Describe the brief pre-intubation examination to identify the difficult laryngoscopy including the Mallampoti classification
- 4.19 Outline indications and contraindications of various routes of tracheal intubation including Rapid Sequence Intubation: Knowledge of the principles, indications, contraindications, and medications.
- 4.20 Describe and define Rapid Sequence Intubation.
- 4.21 Discuss its advantages and disadvantages as compared to awake intubation, use of IV sedation only, and blind nasotracheal intubation.
- 4.22 Discuss the choice of neuromuscular blockers. Describe the contraindications to Succinylcholine. Discuss the use of the following induction agents and their

- respective advantages and disadvantages; Thiopental, Midazolam, Fentanyl, Etomidate, Ketamine
- 4.23 Describe alternate methods for establishing an airway when endotracheal intubation cannot be accomplished.
 - 4.24 Discuss the management of the failed airway (Inability to intubate or bag ventilate)
 - 4.25 Describe the difficult airway kit and its contents including the procedure for Surgical Cricothyrotomy
 - LMA
 - PLA

MODULE 5

CARDIAC MANAGEMENT

Goal:

Students will be able to appropriately manage the cardiovascular patient through physical assessment, interpretation, and utilization of adjunct modalities, including but not limited to, 12-lead ECG monitoring, invasive electrical therapy, balloon pump support, and pharmacological therapies.

Objectives:

After completion of this module, the student will be able to:

- 5.1 Understand cardiac A & P
- 5.2 Identify variables affecting left ventricular function
- 5.3 Recognition of MI utilizing ECG:
- 5.4 Myocardial Infarctions-Assessment Finding's
- 5.5 Identify Cardiac Arrhythmias
- 5.6 Identify other possible complications encountered with cardiac patients
- 5.7 Identify the purpose and use of other devices that assist the compromised cardiac patient

MODULE 6

SHOCK MANAGEMENT

Goal:

The student will be familiar with the different types of shock, treatment modalities, pharmacologic resources, and hemodynamic monitoring used for the patient with circulatory compromise.

Objectives:

After completion of this Module, the student will be able discuss and define the following:

- 6.1 Shock
- 6.2 Three (3) Major Phases Shock is Divided Into
- 6.3 Pathophysiology
- 6.4 Oxygen Transport
- 6.5 Waste Removal
- 6.6 Shock (Hypoperfusion)
- 6.7 Shock is a Complex Phenomenon and the Causes Vary
- 6.8 Forms of Shock
- 6.9 Hypovolemic Shock
- 6.10 Distributive Shock
- 6.11 Anaphylactic Shock
- 6.12 Neurogenic Shock
- 6.13 Septic Shock

MODULE 7

NEUROLOGICAL MANAGEMENT

Goal:

The student will be able to identify the patient's status and understand appropriate management.

Objectives:

After completion of this Module, the student will be able to discuss and define the following:

- 7.1 A&P of Neurological System
- 7.2 Neurological Assessment
- 7.3 Neurological Injuries
- 7.4 Stroke
- 7.5 Skull Fracture
- 7.6 Other Neurological Problems
- 7.7 Neurological Diseases

MODULE 8

OBSTETRICAL MANAGEMENT

Goal:

Participants will recognize and manage normal and complicated pregnancies and deliveries through proper assessment of OB patients.

Objectives:

After completion of this module, the student will be able to:

- 8.1 Define basic anatomy and physiology of the reproductive structures
- 8.2 List the anatomical and physiological changes affecting the Obstetric patient
- 8.3 Describe the assessment method for gynecologic and obstetric patients
- 8.4 Describe the general management of the obstetric patient
- 8.5 Explain the specific complications of pregnancy
- 8.6 Describe a normal childbirth and delivery
- 8.7 Describe deliveries: abnormal presentations
- 8.8 Initiate appropriate interventions of normal care following newborns delivery
- 8.9 Describe appropriate interventions for mother's treatment after birth

MODULE 9

GI/GU/RENAL MANAGEMENT

Goal:

The student will be able to assess and manage a critical patient with genitourinary, gastrointestinal and renal complications.

Objective:

After completion of this module, the student will be able to:

- 9.1 Renal Objectives
 - 9.1.1 Identify the anatomic structures of the urinary tract.
 - 9.1.2 Describe the gross anatomy of the kidney.
 - 9.1.3 Trace the blood flow entering and exiting the kidney.
 - 9.1.4 Describe the structure of the nephron.
 - 9.1.5 Describe the function of the juxtaglomerular apparatus in relation to renal blood flow.
 - 9.1.6 Describe the process of glomerular filtration including the processes that affect filtration.
 - 9.1.7 Differentiate between the processes of reabsorption and secretion.
 - 9.1.8 Describe the major functions of the kidney.

- 9.1.9 Compare and contrast acute and chronic renal failure, including the definition, presenting signs and symptoms, course, and complications.
- 9.1.10 Identify the etiologies of prerenal, intrarenal, and postrenal failure.
- 9.1.11 Describe the processes of urine formation (glomerular filtration, tubular reabsorption and tubular secretion).
- 9.1.12 List three (3) general mechanisms by which the kidneys maintain homeostasis

- 9.2 Gastrointestinal objectives
 - 9.2.1 Identify the anatomic structures of the GI tract
 - 9.2.2 Understand the anatomy and physiology of the GI system
 - 9.2.3 Understand disorders and treatments of the GI system
 - 9.2.4 Understand and perform an adequate assessment of the GI system
 - 9.2.5 Know the proper procedure for insertion of a nasogastric/orogastric tube
 - 9.2.6 Understand the signs and symptoms associated with disorders of the GI system

- 9.3 Genitourinary Objectives
 - 9.3.1 Identify and understand the structures which comprise the genitourinary system
 - 9.3.2 Understand the anatomy and physiology of the GU system
 - 9.3.3 Understand disorders and treatments of the GU system
 - 9.3.4 Understand and perform an adequate assessment of the GU system
 - 9.3.5 Know the proper insertion technique of a Foley catheter for a male and female patient
 - 9.3.6 Understand signs and symptoms associated with disorders of the GU system

MODULE 10

PEDIATRIC MANAGEMENT

Goal:

Student will be able to integrate pathophysiological principles and assessment findings to manage, treat, and transport the critical care pediatric patient with multi-system trauma, end-stage disease presentation, acute presentations of chronic conditions and single- or multi-disease etiologies.

Objectives:

At the completion of the Module, the student will be able to discuss:

- 10.1 Definitions
- 10.2 Growth and Development Review
- 10.3 Anatomy and Physiology Review
- 10.4 Physical Exam
- 10.5 General Management
- 10.6 Routes of Administering Medications
- 10.7 Respiratory Compromise

- 10.8 Medical Emergencies
- 10.9 Shock

MODULE 11

SPECIAL TOPICS

Goal:

At the end of this class the participant should understand the basic concepts and skills required to correlate pathological and clinical data with radiographic findings on chest films.

TOPIC - RADIOLOGY

Objectives:

At the conclusion of this module, the student will be able to:

- 11.1 Identify normal anatomy of the chest as it is seen on the radiograph
- 11.2 Demonstrate a basic knowledge of radiologic interpretation
- 11.3 Gather clinical and radiological data on patients with disease processes
- 11.4 Recognize normal chest and C-spine anatomy and appropriate positions for tubes, catheters and other medical devices on chest and C-spine films
- 11.5 Demonstrate ability to recognize common conditions (e.g. collapsed lobes) and life threatening conditions (e.g. pneumothorax) on chest radiographs
- 11.6 Demonstrate a clinically appropriate diagnostic treatment plan
- 11.7 Understand cardiac and aortic arch great vessel anatomy and the physiologic basis for common diseases (e.g. CHF and pulmonary hypertension, pericardial effusions) and understand the plain film findings in common diseases of the heart and great vessels

TOPIC – BURN MANAGEMENT

Objectives:

At the end of this class the participant should be able to:

- 11.8.1 Recognize when responding to burn emergencies airway and C-spine management, oxygenation, and circulatory support as being the highest priority.
- 11.8.2 Recall the anatomy & physiology of the skin
- 11.8.3 Develop an understanding of burn injuries from thermal (heat) sources and (depending upon presentation length) burns from electrical, chemical, and radiation sources
- 11.8.4 Perform appropriate initial and focused assessments of burn injuries, including realistically accurate burn depth and extent estimations

- 11.8.5 Provide appropriate medical and psychological treatment for burn injuries, including decontamination and IV fluid administration using the Parkland formula
- 11.8.6 Make appropriate destination decisions based upon the burn mechanism, injury extent, and patient condition.
- 11.8.7 Understand the importance of evaluation for extremity/chest escharotomy

TOPIC – HEMODYNAMIC MONITORING

Objectives:

At the end of this class the student should be able to interpret hemodynamic parameters and recognize treatment of life-threatening conditions. The student should also be able to:

- 11.9.1 Discuss possible contraindications of the pulmonary artery catheter
- 11.9.2 Describe complications associated with the PA catheter
- 11.9.3 Describe and understand hemodynamic physiology including:
 - Cardiac cycle
 - Define preload, afterload and contractility
 - Stroke volume
 - Discuss normal pressures
 - Discuss mechanical ventilation and PA pressure readings
 - Demonstrate measuring cardiac output
- 11.9.4 Waveform recognition and analysis
 - Identify and discuss venous pressures (CVP)
 - Describe right vs. left atrial waveforms
 - Identify and measure pulmonary artery waveforms
 - Identify pulmonary artery wedge pressure and discuss factors that alter the PAWP
 - Describe and discuss arterial pressure waveforms
 - Perform waveform recognition and analysis exercises
 - Discuss arrhythmias and their hemodynamic effects
 - Describe problems in obtaining accurate pressure readings
 - Troubleshoot waveform abnormalities
- 11.9.5 Effects of Pharmacologic Agents on Hemodynamics
 - Positive Inotropes & vasoactive drugs
 - Describe factors affecting contractility
 - Beta Adrenergic Agonists
- 11.9.6 Diagnosing Life-Threatening Complications
 - Diagnose life-threatening complications using PAP, CVP, PAWP readings
- 11.9.7 Treatment and Clinical Picture of Conditions Requiring Hemodynamic monitoring
 - Discuss clinical findings and treatment of cardiac tamponade
 - Discuss clinical findings and treatment of cardiac failure, cardiogenic shock and RV infarction
 - Discuss clinical findings and treatment of sepsis and septic shock

- Discuss clinical findings and treatment of hypovolemic and hemorrhagic shock
- 11.9.8 Pulmonary Artery Catheter (Swan-Ganz Catheter)
- Demonstrate set-up and insertion of the PA catheter
 - Describe and demonstrate zeroing and leveling the transducer

MODULE 12

CLINICAL CASES – ASSESSMENT BASED MANAGEMENT

Goal:

Given simulated critical care transport scenarios, the student will be able to demonstrate the correct management of a patient using advanced knowledge, skills and equipment acquired in this Critical Care Transport Course.

Objectives:

At the conclusion of this module, the participant will be able to:

- 12.1 Demonstrate advanced airway and ventilation management
 - Oral and nasal Intubations
 - Combitube
 - LMA
 - RSI
 - Ventilator therapy
 - ETCO₂ monitoring
- 12.2 Demonstrate proficiency with equipment
 - Invasive monitoring (Swan-Ganz, CVP, arterial line)
 - Cardiac monitoring (12 lead EKG's, fax transmission)
 - Pacing (Transvenous and transcutaneous)
 - IVAC Mini-med pumps
- 12.3 Demonstrate advanced surgical intervention
 - Cricothyrotomy (needle/surgical)
 - Chest tube insertion (Cook Catheter)
 - Arterial line insertion with pressure monitoring
- 12.4 Demonstrate an understanding of any and all medications routinely encountered in the critical care environment. This will include
 - Routes of administration
 - Indication and contraindication
 - Side effects
 - Dosages and Drug calculations

Patient Confidentiality Agreement

Given the nature of EMS, it is imperative that we maintain the confidentiality of patient information that we receive during the job. Princeton Rescue Squad (PRS) prohibits the release of any patient information to anyone outside PRS unless required for the purpose of treatment, payment, or healthcare operations and discussions of Protected Health Information (PHI) within PRS should be limited. Acceptable uses of PHI within PRS include, but are not limited to, exchange of patient information needed for treatment of the patient, billing, and other essential healthcare operations, per review, internal audits, and quality assurance activities

I understand that Princeton Rescue Squad provides services to patients that are private and confidential. I also understand that as a participant in the Princeton Rescue Squad Education Program I must respect and protect the privacy of all patients. I understand that it is necessary in the rendering of services, that patients provide personal information and that such information may exist in a variety of forms such as electronic, oral or written. I also understand that all such information is strictly confidential and protected by federal and state laws.

I agree that I will respect and protect the privacy of all patients that I may have contact with while participating in the Education Program. If at any time, I knowingly or inadvertently breach the confidentiality of a patient I will notify Princeton Rescue Squad's Privacy Officer immediately. I also understand that a breach of patient confidentiality may result in criminal or civil actions being filed against me.

(Print Student Name)

(Student Signature)

Date

STATEMENT OF STUDENT'S RESPONSIBILITY

I have received a copy of the CCT Syllabus & Student Handbook providing required Policies and Procedures related to Princeton Rescue Squad's CCT Course. I have read the policies and I fully understand the information contained therein. I acknowledge that this information packet contains policies, regulations, and procedures established to meet the overall education of the CCT Student. Princeton Rescue Squad reserves the right to make changes at any to time to reflect any state or federal policies and regulation that may affect the implementation of the CCT Education Program.

Specifically, I understand the following:

1. Successful completion of Princeton Rescue Squad's CCT Education Program does not guarantee a West Virginia certification.
2. I must maintain an overall grade point average of 76 percent or higher to be eligible to take the WVOEMS CCT Certification Exam.
3. I will not be eligible to begin clinical rotations until I have submitted proof of required immunizations.
4. I understand that a random drug-screening test may be asked for at any time during clinical rotations.
5. I understand that failure of a random drug screening test during clinical rotation, or the refusal to take the random drug screening test may result in dismissal from the CCT Educational Program at Princeton Rescue Squad.
6. I understand that the purpose of this program is to prepare me to be eligible to take the exam administered by the WVOEMS. Upon successfully passing the certification exam, I must complete the application process through the West Virginia Offices of Emergency Medical Services or any intended state you plan to work in for certification/licensure as an EMS provider.
7. I understand if I choose to take the WVOEMS Exam I am responsible for the payment of any WVOEMS mandated fee(s).
8. I understand that it is my responsibility to read the required reading assignments, complete the required homework and skills assignments to learn the information and become proficient in all skills.
9. I understand that I must meet all financial obligations to Princeton Rescue Squad or I will be placed in default and restricted from taking the State WVOEMS or NREMT certification exam until such time as my account is paid in full.

By signing below, I am signifying that I have received, read, and understood the above and I agree to abide by these rules while a student in the Princeton Rescue Squad's CCT Education Program.

_____.
Print Name Here

Sign Name Here

Date