

Master Syllabus

Cardiology

EMSP 2444

Synonym/Section #:

Course Description:

A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies.

Course Time & Location:

All EMSP classes & labs will be held at ACC Eastview Campus, 9000 Building

Instructor Information:

For instructor office hours, contact info and location refer to the instructor directory online

Course Prerequisites & Co-requisites:

Prerequisites:

1. BIOL 1261
2. HPRS 2300
3. HPRS 1206
4. EMSP 1355

SCANS Competencies taught in this class:

Resource Use — Identifies, organizes, plans, and allocates resources

Systems Skills — Understands complex interrelationships

Technology Skills — Works with a variety of technologies/computer literacy

SCANS Foundations:

1. Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules (Reading)
2. Receives, attends to, interprets, and responds to verbal messages and other cues (Listening)
3. Organizes ideas and communicates orally (Speaking)
4. Thinks creatively, makes decisions, solves problems, visualized, knows how to learn, and reasons (Thinking Skills)
5. Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty (Personal Qualities)

Required Texts & Materials:

Refer to the "Textbooks" link on the ACC website course schedule for required textbooks for the course.

Instructional Methodology:

This course is taught through lecture in the classroom and skills demonstration and practice in the lab.

Course Rationale:

The detailed study of cardiology and cardiac medical interventions is a cornerstone of the paramedic practice. Comprising a large portion of the patient census, the cardiac patient challenges the assessment and critical thinking skills of any health care provider. This area, above all, sets the paramedic apart from other allied health professionals.

Common Student Learning Objectives/Outcomes:

Course Student Learning Objectives/Outcomes:

Upon completion of the course the student will be able to:

1. integrate a complex depth and comprehensive breadth of knowledge of the anatomy and

- physiology of all human systems.
- 2. integrate comprehensive knowledge of pathophysiology of major human systems.
- 3. integrate knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient.
- 4. integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression, differential diagnosis and formulate a treatment plan.
- 5. integrate comprehensive knowledge of causes and pathophysiology into the management of cardiac arrest and peri-arrest states.
- 6. integrate a comprehensive knowledge of the causes and pathophysiology into the management of shock, respiratory failure or arrest with an emphasis on early intervention to prevent arrest.
- 7. safely and effectively perform all psychomotor skills within the scope of the Paramedic practice.

Discipline/Program Student Learning Objectives/Outcomes:

- 1. Integrates comprehensive knowledge of EMS systems, the safety/well-being of the paramedic, and medical/legal and ethical issues which is intended to improve the health of EMS personnel, patients, and the community.
- 2. Integrates a complex depth and comprehensive breadth of knowledge of the anatomy and physiology of all human systems.
- 3. Integrates comprehensive anatomical and medical terminology and abbreviations into the written and oral communication with colleagues and other health care professionals.
- 4. Integrates comprehensive knowledge of pathophysiology of major human systems.
- 5. Integrates comprehensive knowledge of life span development.
- 6. Applies fundamental knowledge of principles of public health and epidemiology including public health emergencies, health promotion, and illness and injury prevention.
- 7. Integrates comprehensive knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient.
- 8. Integrates complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patent airway, adequate mechanical ventilation, and respiration for patients of all ages.
- 9. Integrate scene and patient assessment findings with knowledge of pathophysiology to form a field impression. This includes development of a list of differential diagnoses through clinical reasoning to modify the assessment and formulate a treatment plan.
- 10. Integrates assessment findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient with a medical complaint.
- 11. Integrates comprehensive knowledge of causes and pathophysiology into the management of the cardiac arrest and peri-arrest states.
- 12. Integrates a comprehensive knowledge of the causes and pathophysiology into the management of shock, respiratory failure or arrest with an emphasis on early intervention to prevent arrest.
- 13. Integrates assessment findings with principles of epidemiology and pathophysiology to formulate a field impression to implement a comprehensive treatment/disposition plan for an acutely injured patient.
- 14. Integrates assessment findings with principles of pathophysiology and knowledge of psychosocial needs to formulate a field impression and implement a comprehensive treatment/disposition plan for patients with special needs.
- 15. Knowledge of operational roles and responsibilities to ensure patient, public and personnel safety.
- 16. Communicate in a culturally sensitive manner.
- 17. Demonstrate professional behavior including but not limited to; integrity, empathy, self-motivation, appearance and personal hygiene, self confidence, communications, time-management, teamwork, diplomacy and respect, patient advocacy and the safe delivery of care.
- 18. Safely and effectively perform all psychomotor skills within the National EMS Scope of Practice Model and state scope of practice at the Paramedic level
- 19. Perform basic and advanced interventions as a part of a treatment plan intended to mitigate the emergency, provide symptom relief, and improve the overall health of the patient and evaluate the effectiveness of interventions and modify the treatment plan accordingly.

20. Report and document assessment findings and interventions. Collect and report data to be used for epidemiological and research purposes.
21. Function as the team leader of a routine, single patient advanced life support emergency call.

Grading System:

The grade for this course is determined by a combination of major written examinations, homework, and quizzes.

Grading Scale: 91-100% =A
83-90% = B
75-82% = C
67-81% = D
Below 67 = F

Exams may consist of multiple choice, matching, fill-in-the-blank, short-answer, essay, labeling, and/or identification questions. Exams may be presented in written, video, lab practical, skills performance, and oral formats.

Homework/Quizzes

Homework assignments and daily quizzes may be given in each class. Each class may have a different format/weighting for these assignments. The specific details will be provided by the lead instructor for each class.

Didactic Exams

1. Students must pass all didactic exams with a minimum grade of 75%. Each didactic exam must be passed prior to taking the next scheduled exam in the course. All course final exams require a minimum passing grade of 80%.
2. In a given course, a student may be given a total of two retests to use on didactic exams. In order to achieve a passing score, both retests may be used on the same exam, or they may be used on two individual exams. Only one retest may be used on the final exam.
3. The maximum score on a retest for a module exam will be 75%, even if the score achieved on the retest exceeds this score. The maximum score on a retest for a final exam will be 80, even if the score achieved on the retest exceeds this score.
4. A student who receives a passing score on an exam may not use a retest in order to get a higher score.
5. Exams that a student does not take during the time period specified by the course instructor will be given a score of zero (0).
6. A student, who fails to pass an exam and has no allowed retests remaining for the course or fails a retest on a final exam, has not completed the requirements of the course and is required to immediately withdraw from the course.

Skills Exams

Skills may be tested in two different ways, as a **“Summative”** exam, and as a **“Formative”** exam. Skills may be tested at any time during the program. Individual skills to be tested will be identified in each course syllabi. Each summative skills exam in a course may be retested a single time. Only one single skills summative exam in a course may be retested a second time. A student who fails a second retest of a skills summative exam, or who fails initial retests on two skills summative exams in a course, has not completed the requirements of the course and is required to immediately withdraw from the course. For summative exams, each course will have a specific deadline by which a skill exam must be completed successfully. Failure to meet this deadline constitutes failure to complete the requirements of the course, and the student shall be required to immediately withdraw from the course. Formative skills exams may count as a part of a student’s grade for a course. Failure of formative skills exams will not by itself constitute failure of the course as a whole, but may lower a student’s grade below a passing level. If a student’s grade is lowered enough that it becomes impossible to regain a passing score, that constitutes failure to complete the requirements of the course, and shall require the student to immediately withdraw from the course. Skills may not be tested, either to a summative or formative level, on the same day as they are remediated or practiced. It is the student’s responsibility to consider this policy when scheduling remediation and practice sessions prior to testing a skill. Failure to adhere to testing deadlines due to inappropriate scheduling of a remediation or practice session may result in,

among other consequences, the skill exam being recorded as a failure, violation of a remediation / counseling plan, and failure to complete the requirements of the course. Summative skills failed in a skills class during a clinical rotation semester may cause the immediate removal/withdrawal of the student from both the skills class and the clinical class. Failure of summative skills indicates a safety issue for both the student and any prospective patient.

Course/Class Policies:

Children in the Classroom and Lab

It is understood that occasionally, childcare falls through or students have difficulty arranging childcare, however, **due to safety concerns, children are never allowed in labs, even in the company of adults.** In addition, the college does not allow children in classrooms. Please arrange for children to be away from these areas if you must bring them to campus.

Dress Code

Students must display appropriate level judgment with regard to personal hygiene, grooming and dress. It is the responsibility of the student to be neat, clean and dressed in a manner respectful to professors and classmates. EMS uniforms other than the approved ACC uniform are not acceptable for wear in the classroom and lab. Shoes should be comfortable and must have a closed toe. Clothing and hygiene must be appropriate for the working atmosphere of the classroom and lab. Clothing that is too low, too short; pants worn below the waistline must not be worn. Attire that restricts required movements in the lab and / or causes a distraction must be avoided. Attire that disrupts the classroom or is offensive in nature will not be tolerated. Violations of this Dress Code will cause the student to be removed from the classroom or lab.

General Behavior

Professionalism in the classroom is an attitude of mutual respect for the course, other students, and instructors. Modeling professional behavior in the academic atmosphere is required of all EMSP students. Disruptive behavior results in lost curriculum time and creates a classroom/lab environment that is not conducive to learning. "Disruption", as applied to classroom and lab settings means behavior that a faculty member would view as interfering with normal academic functions. Examples include, but are not limited to: persistently speaking without being recognized or interrupting other speakers; behavior that distracts the class from the subject matter or discussion; or in extreme cases, physical threats, harassing behavior or personal insults, disrespectful language or refusal to comply with faculty direction.

Absence Policy:

Students may only miss 10% of the total clock minutes within a lecture or lab section. Attendance is taken at the start of every lecture and lab session. Time is deducted for every minute that a student is late to class or late returning from breaks, or when a student leaves early. Once the maximum allowable time is exceeded, the student must immediately withdraw from the class.

Tardy Policy:

Arrival at class after instruction has begun is disruptive and disrespectful of your peers. Habitual tardiness is unprofessional, and not a behavior that EMSP students should cultivate. Therefore, after three late arrivals the student will receive a Tardiness report, much like the absence report, from the instructors of the course. This will be signed and placed in the students file. Upon the seventh instance of tardiness the student will be removed from the course.

Withdrawal Policy:

It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

Students who enroll for the third or subsequent time in a course taken since Fall, 2002, may be charged a higher tuition rate, for that course.

State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

Incompletes:

An instructor may award a grade of "I" (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

Cell Phones and Pagers

Cell phones or pagers should be kept in silent mode during lab and lecture classroom time. Students may carry a cell phone and or pager when in the clinical environment. The clinical experience will not be interrupted to check and or respond to pages and calls.

Criminal Background

Successful completion of a criminal background check is required for admission and continuation in all Health Sciences Programs. Background checks will be honored for the duration of the student's enrollment in the clinical program if the participating student has not had a break in the enrollment at the college/school. A break in enrollment is defined as nonattendance of one full semester or more.

Statement on Students with Disabilities:

Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Office for Students with Disabilities (OSD). Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.

Students who have received approval for accommodations from OSD for this course must provide the instructor with the 'Notice of Approved Accommodations' from OSD before accommodations will be provided. Arrangements for academic accommodations can only be made after the instructor receives the "Notice of Approved Accommodations' from the student.

Students with approved accommodations are encouraged to submit the 'Notice of Approved Accommodations' to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations.

Additional information about the Office for Students with Disabilities is available at <http://www.austincc.edu/support/osd>.

Safety Statement:

Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at <http://www.austincc.edu/ehs>. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at <http://www.austincc.edu/emergency>.

Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day's activity, may be withdrawn from the class, and/or barred from attending future activities.

Student Rights and Responsibilities:

Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational

process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

Statement on Scholastic Dishonesty:

A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an “F” in the course and/or expulsion from the college, See the Student Standards of Conduct and Disciplinary Process and other policies at <http://www.austincc.edu/current/needtoknow>.

Use of ACC e-mail:

All College e-mail communication to students will be sent solely to the student’s ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive e-mail communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at <http://austincc.edu/accmail/index.php>.

Testing Center Policy:

Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have:

- ACC Photo ID
- Course Abbreviation (e.g., ENGL)
- Course Number (e.g., 1301)
- Course Synonym (e.g, 10123)
- Course Section (e.g., 005)
- Instructor’s Name

Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, regardless of whether it is on or off, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at <http://www.austincc.edu/testctr>.

Course Outline/Calendar:

Lecture 1	Welcome and Class Overview Epidemiology and Anatomy review
Lab	Intro to lab, policies Heart Dissection
Lecture 2	Cardiac properties/terms; Electrophysiology of the heart
Lab	CPR review
Lecture 3	Relationship of ECG to electrical events in the heart Vectors; ECG paper measurements; 12 lead overview Naming the waveforms

Lab	Waveform recognition, Measuring intervals Heart rate calculation, Introduction to LP 12 (overview of machine, paper, etc.) Electrode placement (frontal leads only)
Lecture 4	Calculation of Axis on 12 leads
Lab	Axis Calculation Waveform recognition practice
Lecture 5	Systematic Analysis of Rhythms; defining terms
Lab	Systematic analysis of ECGs
Lecture 6	Introduction to Sinus Rhythms
Lab	Systematic rhythm practice
Lecture 7	Atrial rhythms
Lab	Rhythm recognition practice
Lecture 8	Junctional rhythms; rhythm review
Lab	Systematic rhythm practice
Lecture 9	Narrow complex tachycardias and Reentry pathways
Lab	Systematic rhythm practice
Lecture 10	Ventricular rhythms
Lab	Rhythm recognition practice
Lecture 11	AV blocks
Lab	Systematic rhythm practice
Lecture 12	Asystolic/ (PEA) and Paced rhythms
Lab	Systematic rhythm practice
Lecture 13	Practice math Competency; intro to dynamic competency
Lab	Review all rhythms; piggyback practice
Lecture 14	Focused physical exam and history taking; differential diagnosis; documentation
Lab	Scenario practice; Intro to mannequins; heart tones
Lecture 15	Introduction to the 12 lead ECG Piggyback and Common cardiac drugs
Lab	12 lead interpretation practice Scenario Practice; 12 lead placement
Lecture 16	Bundle Branch blocks/ hemiblocks on 12 leads

Lab	12 lead interpretation practice Math Competency Test 1
Lecture 17	Recognition of acute coronary syndromes
Lab	12 lead ECG interpretation practice Cardiac assessment practice scenarios
Lecture 18	Reciprocal changes, RVI, PWMI
Lab	12 lead ECG interpretation practice; scenario practice
Lecture 19	ACS assessment and interventions Introduction to static competency
Lab	Scenario practice; documentation activity
Lecture 20	Tachycardia interventions
Lab	Introduction to cardioversion Math Competency 2
Lecture 21	Bradycardia interventions; dynamic competency practice
Lab	Introduction to pacing; scenario practice
Lecture 22	Interventions for pulseless patients
Lab	Defibrillation skill, scenario practice
Lecture 23	Practice static and dynamic competency
Lab	All skills practice
Lecture 24	ACS confusers: 12 lead imposters
Lab	12 lead review and practice; scenario practice
Lecture 25	Heart failure, cardiogenic shock: assessment and interventions, and Static Competency Practice
Lab	All skills practice: Math Competency 3
Lecture 26	Continuing the code: what to do when resuscitation works and when it doesn't; LVAD, defib vests and other devices; static competency practice
Lab	Piggyback Skills Testing All Skills Practice
Lecture 27	Dynamic and static competency practice
Lab	Scenario Testing Other skills practice
Lecture 28	Dynamic and static competency testing
Lab	Skills testing

Lecture 29	Dynamic and static competency reassessments Written final exam retest
Lab	Skills Retests
Lecture 30	All Retests (competency and skills)