



Course Prefix/Number/Title: EMS 220 – Cardiac Emergencies

Number of Credits: 5 Credits

Course Description: This course prepares to student to distinguish between the electrical and mechanical function of the heart and understand how cardiac impulses are formed. Also, understand the heart's electrical conduction system and what influences the rate of the cardiac impulse formation. Identify single and multi-lead cardiac rhythms.

This course prepares the student to identify single and multi-lead cardiac rhythms (12 lead interpretation) and treat those rhythms considered to be life threatening.

This course covers all aspects of treating cardiac patients at the advanced level. Completion of this course will result in the awarding of Advanced Cardiac Life Support Certification of Completion valid for the period of two years from the American Heart Association.

This course covers all aspects of treating a pediatric cardiac patient at the advanced level. This course results in the awarding of a Pediatric Advanced Life Support certification from the American Academy of Pediatrics and the American Heart Association.

Teaching-learning methods in this course may include, but are not limited to, assigned readings, independent studies, presentations, discussion, critical thinking exercises, labs and class activities.

Pre-/Co-requisites: EMS 214

Course Objectives: To integrate anatomy, pathophysiology, electrophysiology and rhythm recognition into the patient assessment.

To integrate patient assessment findings, patient history, knowledge of anatomy, physiology, pathophysiology, electrophysiology and basic and advanced life support interventions to recognize and manage patient with cardiac disorders.

To integrate knowledge of the AHA ACLS primary and secondary surveys, algorithms and systematic team approach into the assessment and treatments of patients with almost any cardiac conditions and electrical disturbance.

To integrate knowledge of the AHA PALS pediatric patient assessment, algorithms and systematic team approach into the assessment and treatments of pediatric patients with almost any pediatric cardiac conditions and electrical disturbance.

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Lecture/Lab Schedule: Monday and Thursday from 6:15-10:15 PM and Friday from 9:00 AM to 4:00 PM. See class schedule.

Textbook(s): Aehlert, Barabara J. (2018). ECGs Made Easy, 6th Edition. St. Louis, Missouri, Elsevier, Paramedic Care Principles and Practice, 5th Edition, American Heart Association ACLS and PALS Provider Manual (Current) and Pharmacology for Paramedic Students – an open resource document. Other materials provided by instructors.

Course Requirements: For the AHA courses, students are required to complete a course pre-test prior to the beginning of class. This website and password are found in the front cover of the AHA manual. Attendance is required for the complete course; student must pass the written exam with a score of 84% or better and pass mega mode practical testing.

For the remainder of the course, students will be required to attend class and complete exams in EMStesting on time. Final exams will be worth 40%, additional tests 20%, quizzes 20%, homework 10% and affective behavior 10%. All final course grades will be calculated on a weighted grading system. Assignments, quizzes and other tests will be graded based on the scale below:

A	90- 100
B	80- 89
C	70- 79
D	60- 69
F	< 59

Lab will be graded on a pass/fail system with a passing grade received when all required skills are completed with appropriate, supervised technique. Students will also be required to pass skill sheets and scenario skills sessions per portfolio requirements (where applicable).

Please see DCB Paramedic Handbook for full grading and course requirements.

Tentative Course Outline: ECGs Made Easy, 56th Edition, Chapters 1-10. Pharmacology for Paramedic Students – open resource, Ch. 7.

TOPIC – CLASSROOM

ECGs Made Easy, 6th Edition, Chapters 1- 10

Anatomy and Physiology	Ch. 1
Basic Electrophysiology	Ch. 2
Sinus Mechanisms	Ch. 3
Atrial Rhythms	Ch. 4
Junctional Rhythms	Ch. 5
Ventricular Rhythms	Ch. 6
Atrioventricular Blocks	Ch. 7
Pacemaker Rhythms	Ch. 8
Introduction to the 12-Lead ECG	Ch. 9
Post Test	Ch. 10

Paramedic Care Principles and Practice, 5th Edition. Vol.3, Ch. 2

Cardiology
12 Lead Class

Ch. 2, Part 2

Pharmacology for Paramedic Students

Medications used for Cardiovascular Emergencies

Ch. 7

TOPIC – LAB

Perform Chest Compressions – Skill Lab
12 Lead ECG – Skill Lab
Acquisition, interpretation & transmission
Defibrillation (Unwitnessed Arrest) – Skill Lab
Synchronized Cardioversion – Skill Lab
Transcutaneous Pacing – Skill Lab
Cardiac Arrest – SIM
Cardiac Pathologies & Complaints Scenario Assessment – SIM

Course objectives details to be covered according to the AHA’s instructional guidelines.

Course objectives details to be covered according to the EMS National Standards instructional guidelines.

General Education Competency/Learning Outcome(s) OR CTE Competency/Department Learning Outcome(s): Students will apply knowledge gained in the didactic component of the program to achieve a minimum of 70% proficiency in all of the following curricular levels of EMS Testing exams: 1) airway management, 2) medicine, 3) EMS operations, 4) assessment, 5) preparatory, 6) special patient populations and 7) shock/resuscitation/trauma.

Students will demonstrate proficiency in basic, individual, and pathological laboratory skills, competencies and scenarios.

Relationship to Campus Theme: The goal of the Paramedic Program is to prepare professionals to work in the emergency medical services industry. The Paramedic Program is committed to a hands-on learning environment and uses field experiences and emerging technologies in emergency medical services as common instructional techniques.

Classroom Policies: Dakota College at Bottineau Paramedic Program guides.

Student Email Policy: Dakota College at Bottineau is increasingly dependent upon email as an official form of communication. A student’s campus-assigned email address will be the only one recognized by the Campus for official mailings. The liability for missing or not acting upon important information conveyed via campus email rests with the student.

Academic Integrity: According to the DCB Student Handbook, students are responsible for submitting their own work. Students who cooperate on oral or written examinations or work without authorization share the responsibility for violation of academic principles, and the students are subject to disciplinary action even when one of the students is not enrolled in the course where the violation occurred. The Code detailed in the Academic Honesty/Dishonesty section of the Student Handbook will serve as the guideline for cases where cheating, plagiarism or other academic improprieties have occurred.

Disabilities or Special Needs: Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor and Disability Support Services within the first two weeks of the semester to line up accommodations.

Title IX: Dakota College at Bottineau (DCB) faculty are committed to helping create a safe learning environment for all students and for the College as a whole. Please be aware that all DCB employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers) are required to report information about such discrimination and harassment to the College Title IX Coordinator. This means that if a student tells a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the College's Title IX Coordinator. Students wishing to speak to a confidential employee who does not have this reporting responsibility can find a list of resources on the DCB Title IX Webpage.