EMERGENCY MEDICAL SERVICES

MIS03   07045

Students enrolling in this course will complete training in CPR for Health Care Providers and the Nationals Curriculum Emergency Medical Technician – Basic Course. The course prepares the student to respond to a wide range of emergencies such as heart attacks, auto accidents, and diabetic problems. Students participate in extensive "hands-on" practical sessions using modern prehospital care equipment under the instruction of paramedics from the local paramedic service. Students also receive exposure to a wide array of health careers through the use of professional guest speakers. Upon completion of the course, students are eligible for ND State licensure testing and they will have extensive knowledge and experience to aid them in choosing a health care career.

Credit   1 or 2 credit

Level   Grades 10-12

Standard 1	HEALTH SCIENCE ACADEMIC FOUNDATION
	-Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

Topic 1.1	**Human Anatomy and Physiology**

	Student Competencies

1.1.1	Identify basic levels of organization of the human body.
	     a. Chemical
	     b. Cellular
	     c. Tissue
	     d. Organs
	     e. Systems
	     f. Organism

1.1.2	Identify body planes, directional terms, cavities, and quadrants.
	     a. Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal)
	     b. Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep)
	     c. Cavities (dorsal, cranial, spinal, thoracic, abdominal, and pelvic)
	     d. Quadrants (upper right, lower right, upper left, and lower left)

	1.1.3	Analyze basic structures and functions of human body systems (skeletal, muscular, integumentary, cardiovascular, lymphatic, respiratory, nervous, special senses, endocrine, digestive, urinary, and reproductive).
		   a. Skeletal (bone anatomy, axial and appendicular skeletal bones, functions of bones, ligaments, types of joints)
		   b. Muscular (microscopic anatomy of muscle tissue, types of muscle, locations of skeletal muscles, functions of muscles, tendons, directional movements)
		   c. Integumentary (layers, structures and functions of skin)
		   d. Cardiovascular (components of blood, structures and functions of blood components, structures and functions of the cardiovascular system, conduction system of the heart, cardiac cycle)
		   e. Lymphatic (structures and functions of lymphatic system, movement of lymph fluid)
		   f. Respiratory (structures and functions of respiratory system, physiology of respiration)
		   g. Nervous (structures and functions of nervous tissue and system, organization of nervous system)
		   h. Special senses (structures and functions of eye, ear, nose and tongue; identify senses for sight, hearing, smell, taste, touch)
		   i. Endocrine (endocrine versus exocrine, structures and functions of endocrine system, hormones, regulation of hormones)
		   j. Digestive (structures and functions of gastrointestinal tract, chemical and mechanical digestion, structures and functions of accessory organs)
		   k. Urinary (structures and functions of urinary system, gross and microscopic anatomy, process of urine formation, urine composition, homeostatic balance)
		   l. Reproductive (structures and functions of male and female reproductive systems, formation of gametes, hormone production and effects, menstrual cycle, and conception)

Topic 1.2	**Diseases and Disorders**	
	Student Competencies	

	1.2.1	Describe common diseases and disorders of each body system (such as: cancer, diabetes, dementia, stroke, heart disease, tuberculosis, hepatitis, COPD, kidney disease, arthritis, ulcers).
		   a. Etiology
		   b. Pathology
		   c. Diagnosis
		   d. Treatment
		   e. Prevention

	1.2.2	Discuss research related to emerging diseases and disorders (such as: autism, VRSA, PTSD, Listeria, seasonal flu).

	1.2.3	Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
		   a. Gene testing
		   b. Gene therapy
		   c. Human proteomics

		d. Cloning
		e. Stem cell research
Topic 1.3	**Medical Mathematics**	
	Student Competencies	

	1.3.1	Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare.
		    a. Metric system (such as: centi, milli, kilo)
		    b. Mathematical (average, ratios, fractions, percentages, addition, subtraction, multiplication, division)
		    c. Conversions (height, weight/mass, length, volume, temperature, household measurements)

	1.3.2	Demonstrate the ability to analyze diagrams, charts, graphs, and tables to interpret healthcare results.
	1.3.3	Demonstrate use of the 24-hour clock/military time.

Standard 2	**COMMUNICATION** *-Demonstrate methods of delivering and obtaining information, while communicating effectively.*

Topic 2.1	**Concepts of Effective Communication**	
	Student Competencies	
	2.1.1	Model verbal and nonverbal communication.

	2.1.2	Identify common barriers to communication.
		    a. Physical disabilities (aphasia, hearing loss, impaired vision)
		    b. Psychological barriers (attitudes, bias, prejudice, stereotyping)

	2.1.3	Identify the differences between subjective and objective information.
	2.1.4	Interpret elements of communication using basic sender-receiver-message-feedback model.
	2.1.5	Practice speaking and active listening skills.
	2.1.6	Modify communication to meet the needs of the patient/client and be appropriate to the situation.
Topic 2.2	**Medical Terminology**	
	Student Competencies	
	2.2.1	Use common roots, prefixes, and suffixes to communicate information.

	2.2.2	Interpret medical abbreviations to communicate information.
		    a. Common abbreviations
		    b. Joint Commission official "Do Not Use List"

Topic 2.3	**Written Communication Skills**	
	Student Competencies	
	2.3.1	Utilize proper elements of written and electronic communication (spelling, grammar, and formatting).
	2.3.2	Prepare examples of technical, informative, and creative writing.

Standard 3	SYSTEMS
	-Identify how key systems affect services performed and quality of care.

Topic 3.1	Healthcare Delivery Systems

	Student Competencies

	3.1.1	Compare healthcare delivery systems.
		     a. Non-profit and for profit (such as: hospitals, ambulatory facilities, long-term care facilities, home health, medical and dental offices, mental health services)
		     b. Government (such as: CDC, FDA, WHO, OSHA, Public Health systems/Health Departments, Veteran's Administration)
		     c. Non-profit (such as: March of Dimes, American Heart Association)

	3.1.2	Describe the responsibilities of consumers within the healthcare system (such as: self-advocacy, patient compliance, provider and consumer obligations).
	3.1.3	Assess the impact of emerging issues on healthcare delivery systems (such as: technology, epidemiology, bioethics, socioeconomics).

	3.1.4	Discuss healthcare economics and common methods of payment for healthcare.
		     a. Private health insurance (such as: Blue Cross, Affordable Care Act - ACA)
		     b. Managed care (such as: HMOs, PPOs, medical home)
		     c. Government programs (Medicare, Medicaid, Tricare, and Workers' Compensation)

Standard 4	EMPLOYABILITY SKILLS
	-Utilize employability skills to enhance employment opportunities and job satisfaction.

Topic 4.1	Personal Traits of the Health Professional

	Student Competencies

	4.1.1	Identify personal traits and attitudes desirable in a member of the career ready healthcare team.
		     a. Acceptance of criticism
		     b. Competence
		     c. Dependability
		     d. Discretion
		     e. Empathy
		     f. Enthusiasm

		g. Honesty
		h. Initiative
		i. Patience
		j. Responsibility
		k. Self-motivation
		l. Tact
		m. Team player
		n. Willingness to learn
	4.1.2	Summarize professional standards as they apply to hygiene, dress, language, confidentiality and behavior.

Topic 4.2 — Employability Skills

Student Competencies

	4.2.1	Apply employability skills in healthcare.
		a. Chain of command
		b. Correct grammar
		c. Decision making
		d. Flexible
		e. Initiative
		f. Integrity
		g. Loyalty
		h. Positive attitude
		i. Professional characteristics
		j. Prompt and prepared
		k. Responsibility
		l. Scope of practice
		m. Teamwork
		n. Willing to learn

Topic 4.3 — Career Decision-making

Student Competencies

	4.3.1	Research levels of education, credentialing requirements, and employment trends in health professions.
	4.3.2	Distinguish differences among careers within health science pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

Topic 4.4 — Employability Preparation

Student Competencies

	4.4.1	Develop components of a personal portfolio.
		a. Letter of introduction
		b. Resume

		c. Sample Projects
		d. Writing Sample
		e. Work-based Learning Documentation
		f. Oral Report
		g. Service Learning/Community Service
		h. Credentials
		i. Technology Skills
		j. Leadership Examples
	4.4.2	Identify strategies for pursuing employment (social media, personal networking, job sites, internships).

Standard 5	# LEGAL RESPONSIBILITIES *-Describe legal responsibilities, limitations, and implications on healthcare worker actions.*

Topic 5.1	**Legal Responsibilities and Implications**	
	Student Competencies	
	5.1.1	Analyze legal responsibilities and implications of criminal and civil law. a. Malpractice b. Negligence c. Assault d. Battery e. Invasion of privacy f. Abuse g. Libel h. Slander
Topic 5.2	**Legal Practices**	
	Student Competencies	
	5.2.1	Apply standards for the safety, privacy and confidentiality of health information (HIPAA, privileged communication).
	5.2.2	Describe advance directives.
	5.2.3	Summarize the essential characteristics of a patient's basic rights within a healthcare setting.
	5.2.4	Define informed consent.
	5.2.5	Explain laws governing harassment and scope of practice.

Standard 6	**ETHICS** *-Understand accepted ethical practices with respect to cultural, social, and ethnic differences within the healthcare environment.*	
Topic 6.1	**Ethical Practice**	
	Student Competencies	
	6.1.1	Differentiate between ethical and legal issues impacting healthcare.
	6.1.2	Identify ethical issues and their implications related to healthcare (such as: organ donation, *in vitro* fertilization, euthanasia, scope of practice, ethics committee).
	6.1.3	Utilize procedures for reporting activities and behaviors that affect the health, safety, and welfare of others (such as: incident report).
Topic 6.2	**Cultural, Social, and Ethnic Diversity**	
	Student Competencies	
	6.2.1	Discuss religious and cultural values as they impact healthcare (such as: ethnicity, race, religion, gender).
	6.2.2	Demonstrate respectful and empathetic treatment of ALL patients/clients (such as: customer service, patient satisfaction, civility).

Standard 7	**SAFETY PRACTICES** *-Identify existing and potential hazards to clients, co-workers, and self. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.*	
Topic 7.1	**Infection Control**	
	Student Competencies	
	7.1.1	Explain principles of infection control. a. Chain of infection b. Mode of transmission (direct, indirect, vectors, common vehicle [air, food, water], healthcare-associated infections [nosocomial], opportunistic) c. Microorganisms (non-pathogenic, pathogenic, aerobic, anaerobic) d. Classifications (bacteria, protozoa, fungi, viruses, parasites)

	7.1.2	Differentiate methods of controlling the spread and growth of microorganisms.
		    a. Aseptic control (antisepsis, disinfection, sterilization, sterile technique)
		    b. Standard precautions
		    c. Isolation precautions
		    d. Blood borne pathogen precautions
		    e. Vaccinations

Topic 7.2	**Personal Safety**	
	Student Competencies	
	7.2.1	Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
	7.2.2	Demonstrate principles of body mechanics.
Topic 7.3	**Environmental Safety**	
	Student Competencies	

	7.3.1	Apply safety techniques in the work environment.
		    a. Ergonomics
		    b. Safe operation of equipment
		    c. Patient/client safety measures (check area for safety)

Topic 7.4	**Common Safety Hazards**	
	Student Competencies	
	7.4.1	Observe all safety standards related to the Occupational Exposure to Hazardous Chemicals Standard (Safety Data Sheets (SDSs)). (www.osha.gov)
	7.4.2	Comply with safety signs, symbols, and labels.
Topic 7.5	**Emergency Procedures and Protocols**	
	Student Competencies	
	7.5.1	Practice fire safety in a healthcare setting.
	7.5.2	Apply principles of basic emergency response in natural disasters and other emergencies (safe location, contact emergency personnel, follow facility protocols).
Standard 8	**TEAMWORK** *-Identify roles and responsibilities of individual members as part of the healthcare team.*	
Topic 8.1	**Healthcare Teams**	
	Student Competencies	
	8.1.1	Evaluate roles and responsibilities of team members.

		a. Examples of healthcare teams
		b. Responsibilities of team members
		c. Benefits of teamwork

	8.1.2	Identify characteristics of effective teams.
		    a. Active participation
		    b. Commitment
		    c. Common goals
		    d. Cultural sensitivity
		    e. Flexibility
		    f. Open to feedback
		    g. Positive attitude
		    h. Reliability
		    i. Trust
		    j. Value individual contributions

Topic 8.2	**Team Member Participation**	
	Student Competencies	
	8.2.1	Recognize methods for building positive team relationships (such as: mentorships and teambuilding).

	8.2.2	Analyze attributes and attitudes of an effective leader.
		    a. Characteristics (interpersonal skills, focused on results, positive)
		    b. Types (autocratic, democratic, laissez faire)
		    c. Roles (sets vision, leads change, manages accountability)

	8.2.3	Apply effective techniques for managing team conflict (negotiation, assertive communication, gather the facts, clear expectations, mediation).

Standard 9	HEALTH MAINTENANCE PRACTICES *-Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.*

Topic 9.1	**Healthy Behaviors**	
	Student Competencies	
	9.1.1	Promote behaviors of health and wellness (such as: nutrition, weight control, exercise, sleep habits).

	9.1.2	Describe strategies for prevention of disease.
		    a. Routine physical exams
		    b. Medical, dental, and mental health screenings
		    c. Community health education outreach programs
		    d. Immunizations

		e. Stress management
		f. Avoid risky behaviors
	9.1.3	Investigate complementary and alternative health practices as they relate to wellness and disease prevention (such as: Eastern medicine, holistic medicine, homeopathy, manipulative and natural therapies).

Standard 10	**TECHNICAL SKILLS**
	-Apply technical skills required for all career specialties and demonstrate skills and knowledge as appropriate.

Topic 10.1	**Technical Skills**

Student Competencies	
10.1.1	Apply procedures for measuring and recording vital signs including the normal ranges (temperature, pulse, respirations, blood pressure, pain).
10.1.2	Obtain training or certification in cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO) and first aid.

Standard 11	**INFORMATION TECHNOLOGY APPLICATIONS**
	-Utilize and understand information technology applications common across health professions.

Topic 11.1	**Key Principles of Health Information Systems**

Student Competencies	
11.1.1	Identify types of data collected in Electronic Health Records/Electronic Medical Records (EHR or EMR) (such as: history and physical, medications, diagnostic tests, patient demographics).
11.1.2	Explore different types of health record data collection tools (such as: patient monitoring equipment, telemedicine, phone application, and medical wearable devices).
11.1.3	Identify the types and content of an EHR/EMR (such as: pharmacy, laboratory, radiology).
11.1.4	Create documentation in EHR/EMRs that reflect timeliness, completeness, and accuracy.
11.1.5	Adhere to information systems policies, procedures, and regulations as required by national, state, and local entities.

Topic 11.2	**Privacy and Confidentiality of Health Information**

Student Competencies	
11.2.1	Apply fundamentals of privacy and confidentiality policies and procedures (HIPAA).
11.2.2	Identify legal and regulatory requirements related to the use of personal health information (such as: Health Information Technology Act—HITECH Act, American Recovery and Reinvestment Act—ARRA).

	11.2.3	Identify common policies and procedures for proper access, disclosure and protection of personal health information (such as: passwords, administrative safeguards, database security).
	11.2.4	Describe consequences of inappropriate use of health data in terms of disciplinary action.
	11.2.5	Understand the principle to correct inaccurate information/errors entered into an EHR/EMR (such as: adding, clarifying, and correcting information).
Topic 11.3	**Basic Computer Skills**	
	Student Competencies	
	11.3.1	Apply basic computer concepts and terminology necessary to use computers and other mobile devices.
	11.3.2	Demonstrate basic computer troubleshooting procedures (such as: restart, check power supply, refresh browser, check settings).
	11.3.3	Demonstrate use of file organization and information storage.
	11.3.4	Identify uses of basic word processing, spreadsheet, and database applications.
	11.3.5	Evaluate validity of web-based resources.
	11.3.6	Demonstrate appropriate usage of email and social media in a work environment (such as: work-related communications, personal texting on own time, appropriate language and content, use full language sentences).