NorthWest Arkansas Community College
Standard Course Outline / Health Division

COURSE NAME AND NUMBER:

EMTP 1012 Human Systems and Patient Assessment

COURSE DESCRIPTION:

The primary focus on this course is basic anatomy and physicology for commonly encounters emergency situations. Body organs, systems, and physiologal dynamics of each body system will be taught.

This course also includes presentation of needs of the patient, skills and knowledge necessary to address these needs, and idientificaiton of priorities. Included are a breif introduction, scene survey,, resuscitation, secondary surgey, definitive field management and re-evaluation.

Prerequisite:

EMTA	1013	First Responder
EMTA	1008	EMT-Basic

Admission into the Paramedic Program by the Division of Health Professions

Although not required prerequisites, it is of great benefit to the student to have completed the following courses prior to entering the paramedic program:

BIOL	2214	Anatomy & Physiology I
BIOL	2224	Anatomy & Physiology II
AHSC	1001	Medical Terminology

Credit Hours / Contact hours / Load Hours:

This course is two credit hours. Contact hours are approximately 34 hours. Study time for this course will exceed 102 hours on average.

Target Audience & Transferability:

This course is for paramedic students only. Students must be actively enrolled in the paramedic program in order to be eligible to take this course. This course does not typically transfer.

Common Objectives/Student Outcomes:

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

1. Describe the basic functions of living organisms
2. Define anatomuy and physiology, and describe the various specialties within each discipline
3. Identify the organ systems of the numan body and the major components of each system
4. Explain the significance of homeostasis
5. Describe how positive and negative feedback ae involved inhomersatic regulation
6. Use anatomical terms to describe body sections, body regions, and relative position
7. Identity the major body cavities and their subdivisions
8. Describe an atom and an element
9. Descibe the different ways in shich atoms combine to form moecules and compounds
10. Use chemical notation to symbolize chemical reactions
11. Distinguich among the three major types of chemical reactions that are improtant to sudying phuysioogy
12. Describe the pH scale and the role of buffers in body fluids
13. Distinguish between organic and inorganic compounds
14. Explain how the chmical properties of water make life possible
15. Describe the physiological roles of inorganic compounds

16. Discuss the structure and funtions of carbohydrates, lips, proteins, nucleic acids, and hig-energy compounds
17. Describe the role of enzymes in metabolism
18. Discuss basic comcepts of the cell theory
19. List the functions of the cell membrane and the structures that enable it to peform those functions
20. Describe the various mechanisms that cells use to transport substances across the cell membrain
21. Describe the organelles of a typical cell, and indicate their specific functions
22. Explain the functions of the cell nucleus
23. Describe the process of mitosis, and axplain it significance.
24. Define differentiation, and explain its importance.
25. Identify the body's four major tissue types and their role
26. Discuss the types and functions of epithelial cells
27. Describe the relationship beween form and functon of each epitherlial type
28. Compare the structures and functions of the various types of connective tissues
29. Describe the three types of muscle tissue and the special structural features of each type
30. Describe the gereal functoins of the intergumentary system
31. Describe the main structural features of the epidermis, and explain their funcitonial significance
32. Explain what accounts for individual and racial differences in skin, such as skin color
33. Describe how the intergumentary system helps regulate body temperature
34. Describe the ufuncitons of the skeletal system
35. Compare the structures and function sof compact and spongy bones
36. Discuss bone growth and development, and account for variations in the internal structure of specific bones
37. Describe the remodeling and repair of the skeleton, and discuss moeostatie mechanisms responbile for regulating mineral deposition and turnover
38. Name the components and functions of the axial and appendicular skeletons
39. Identity the bones of the skull
40. Discuss the differences in structure and function o fthe various vertebrae.
41. Relate the structural differences between the pectoral and pelvic girdles to their various functional roles
42. Distinguich among different gypes of joints, and link sturctural features to joint functions
43. Describe the dynamic movememnts of the skeleton and the structure of representative articulations
44. Explain the reationship between foint structure and mobility, using examples of specificsDescribe the funcitons o the skeletal muscle tissue
45. Identify the sturctural components of a sarcomere
46. Explin the key steps involved in the contraction of a skeletal muscle fiber
47. Compare the different types of muscle contractions
48. Describe the mechanisms by which muscles obtain and use energy to power contractions
49. Relate the types of muscle fibers to muscular performance
50. Distinguish between aerobic and anaerobic endurance, and explain their implicatons for musculart performance
51. Contrast skeletal, caridac, and smoothmuscles in terms of sturcture and function
52. Identify the principal axial muscle s of the body, together with their origins and insertions
53. Identify the principal appendicular muscles of the body together with their origins and insertions
54. Describe the anatomical organization and general functions of the nervous system
55. Distinguish between neurons and neurolgia and compare their stuctures and functions
56. Discuss the events that generate action ptentials in the membranes of nerve cells
57. Explain the mechanism of nerve impulse transmission at the synapse
58. Describe three menigeal layers that surround the CNS
59. Discuss the structure and functions of the spinal cord
60. Name the major regions of the brain and describe their functions

61. Identify crainial nerves and relate each pair of cranial nerves to its principal functions
62. Relate the distribution pattern of spinal nerves to the regions they innervate
63. Distinguish between the motor responses produced by simple and complex reflexes
64. Compare autonomic nervous system with the other divisions of the nervous system
65. Discuss the relationship between the sypathetic and parasypathetic divisions, and explain the implication so f dual innervation.
66. Identify parts of the eye and their functions
67. Identify the receptors and processes involved in the sense of smell
68. Compare the major chemical classes of hormones
69. Explain the general mechanisms of hormonal action
70. Identify the hormones that are especially important to normal growth, and discuss their roles
71. Describe important components and major functions of blood
72. Explain the factors that determine a person's blood type and why blood types are important
73. Describe the location and general features of the heart
74. Trace the flow of blood through thte heart, identifying the major blood vessels, chambers, and heart valves.
75. Idnetify the layers of the heart wall
76. Identify major arteries and viens and the areas they serveIDentify major componants of the lymphatic system, and explain their functions
77. Discuss the diffent types of T cells and the role playes by each in the immune response
78. Describe the primary and secondary immune responses to antigen exposure
79. Relate allergic reations and autoimmune disorders to immune mechanisms
80. Describe the primary functions of the respiratory system
81. Explain how the respiratroy system funcitons
82. Identity the major componants of the respiratory system
83. Identify the organs of the digestive tract and the accessory organs of digestion
84. List the functions of the digestive tract.
85. Identify the components of the urinary system and their functions
86. Describe the structures and functions of the ureters, urinary bladder, kidney, and urethra.
87. Identify and explain how the reporductive system functions.

REQUIRED TEXTS: See current course syllabus or contact instructor

Topics:
You will be assigned specific topics and will be given a course outline the first day of class.

Required assessment:
Students will be given quizes and exams of material covered.