HUMAN ANATOMY and PHYSIOLOGY for RADIOGRAPHY I

Course Syllabus

Course Number: RADT-0454A
OCAS Code: None
Course Length: 48 Hours
Career Cluster: Health Science
Career Pathway: Diagnostic Services
Career Major(s): Radiologic Technologist

Pre-requisite(s): Programs can choose to allow students to challenge this course, use transfer credit or teach course within the framework of their program.

Course Description: Content establishes a knowledge base in anatomy and physiology. Components of the cells, tissues, organs and body systems are described and discussed. The fundamentals of sectional anatomy relative to routine radiography are addressed.

Textbooks: 

Online Resources
Blackboard

Course Objectives:

1. Discuss the basics of anatomical nomenclature.
2. Describe the chemical composition of the human body.
3. Identify cell structure and elements of genetic control.
4. Explain the essentials of human metabolism.
5. Classify tissue types, describe the functional characteristics of each and give examples of their location within the human body.
6. Describe the composition and characteristics of bone.
7. Identify and locate the bones of the human skeleton.
8. Identify bony processes and depressions found on the human skeleton.
9. Describe articulations of the axial and appendicular skeleton.
10. Differentiate the primary and secondary curves of the spine.
11. Summarize the functions of the skeleton system.
12. Label different types of articulartions.
13. Compare the types, locations and movements permitted by the different types of articulations.
14. Examine how muscle is organized at the gross and microscopic levels.
15. Differentiate between the structures of each type of muscle tissue.
16. State the function of each type of muscle tissue.
17. Name and locate the major muscles of the skeleton.
18. Differentiate between the structure and function of different types of nerve cells.
19. State the structure of the brain and the relationship of its component parts.
20. Describe brain functions.
21. List the meninges and describe the function of each.
22. Outline how cerebrospinal fluid forms, circulates and functions.
23. Describe the structure and function of the spinal cord.
24. Determine the distribution and function of cranial and spinal nerves.
25. Summarize the structure and function of components that comprise the autonomic nervous system.
26. Describe the structures and functions of the components that comprise the human eye and ear.
27. List the component body parts involved in the senses of smell and taste.
28. List the somatic senses.
29. Define endocrine.
30. Describe the characteristics and functions of the components that comprise the endocrine system.
31. Describe the hard and soft palates.
32. Describe the structure and function of the tongue.
33. Identify the structure, function and locations of the salivary glands.
34. Describe the composition and characteristics of the primary organs of the digestive system.
35. Describe the function(s) of each primary organ of the digestive system.
36. Differentiate between the layers of tissue that comprise the esophagus, stomach, small intestine, large intestine, and rectum.
37. Differentiate between peritoneum, omentum and mesentery.
38. List and label the accessory organs of the digestive system and describe their function.
39. Identify the secretions and function of each accessory organ of the digestive system.
40. Explain the purpose of digestion.
41. List the digestive processes that occur in the body.
42. Describe the composition and characteristics of blood.
43. List the types of blood cells and state their functions.
44. Differentiate between blood plasma and serum.
45. Outline the clotting mechanism.
46. List the blood types.
47. Explain the term Rh factor.
48. Explain the antigen/antibody relationship and its use in blood typing.
49. Label the parts of the human heart.
50. Describe the flow of blood through the body and identify the main vessels.
51. Describe the structure and function of arteries, veins and capillaries.
52. Differentiate between arterial blood in systemic circulation and arterial blood in pulmonary circulation.
53. Outline the major pathways of lymphatic circulation.
54. Correlate cardiac electrophysiology to a normal ECG tracing.
55. Differentiate between nonspecific defenses and specific immunity.
56. Explain antibody production and function.
57. List the different types and functions of T- and B-cells and explain their functions.
58. Label the components of the respiratory system.
59. Describe the physiology and regulation of respiration.
60. Label the parts of the kidneys, ureters, bladder and urethra.
61. Describe the function of each organ of the urinary system.
62. Describe the composition and formation of urine.
63. Explain micturition.
64. Label the anatomy of the male and female reproductive organs.
65. Analyze the function of each of the male and female reproductive organs.
66. Identify major sectional anatomical structures found within the head and neck, thorax, and abdomen.

All objectives are taken from the ASRT (American Society of Radiologic Technologists) curriculum © 2017
Teaching Methods: The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

Grading Procedures: 1. Students are graded on theory and lab practice and performance.
   2. Each course must be passed with eighty (80%) percent or better.
   3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.
   4. Students wanting to take advantage of college credit/alliance agreements must maintain an 80% in their coursework.
   5. Career Major grades established during coursework are a major criteria in successfully obtaining certification.

Description of Classroom, Laboratories, and Equipment: Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit: The student may be eligible to take state, national or industry exam after completion of the program. Tulsa Tech students may be able to earn college credit based on their knowledge gained at Tech. The process of earning credit through Prior Learning Assessment (PLA) will be determined after completion with Tech and based on certification, credential or knowledge of the subject. See program counselor for additional information.

College Credit Eligibility: All Tulsa Tech students (high school and adult) may have the opportunity to receive college credit upon completion of their program. Our College Relations office will work with students regarding the benefits of Prior Learning Assessments (PLA) toward an Associate of Applied Science (AAS) degree or a technical college certificate at area colleges. For more details call the College Relations office at 918.828.5000.