DATE OF LAST REVIEW: 02/2013

CIP CODE: 51.0806

SEMESTER: DEPARTMENTAL SYLLABUS

COURSE TITLE: Introduction to Pathophysiology

COURSE NUMBER: BIOL-0285

CREDIT HOURS: 4

INSTRUCTOR: DEPARTMENTAL SYLLABUS

OFFICE LOCATION: DEPARTMENTAL SYLLABUS

OFFICE HOURS: DEPARTMENTAL SYLLABUS

TELEPHONE: DEPARTMENTAL SYLLABUS

EMAIL: DEPARTMENTAL SYLLABUS

KCKCC- issued email accounts are the official means for electronically communicating with our students.

PREREQUISITES: Human Anatomy and Laboratory, BIOL-0141, Physiology, BIOL-0271, and Physiology Laboratory, BIOL-0272.

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, http://www.kckccbookstore.com for the required text in this area.

COURSE DESCRIPTION: Introduction to Pathophysiology consists of a review of pathophysiological mechanisms with an emphasis upon mechanical, nutritional, infectious, and neoplastic stressors. Stressor induced responses are discussed with emphasis upon inflammation, immunity, and the generalized stress response. Stressor-stress induced response mechanisms are applied to diseases of each of the body systems.

METHOD OF INSTRUCTION: A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.
COURSE OUTLINE:

I. Cellular Pathology
   A. Normal cell function
   B. Cell injury, adaptations, and death
II. Inflammation and Wound Healing
   A. Pathogenesis
   B. Classification
   C. Principles of wound healing
III. Immune function
   A. Immune cells
   B. Immune responses
   C. Hypersensitivities and immune dysfunctions
IV. Neoplasia
   A. Classification of neoplasia
   B. Symptomology
   C. Biochemistry of cancer cells
V. Genetic and Developmental Defects
VI. Blood and Hemodynamics
   A. Blood physiology
   B. Hemostasis
   C. Edema and hyperemia
   D. Hemorrhage and shock
   E. Thrombosis and infarction
VII. Cardiovascular Pathology
   A. Heart diseases
   B. Cardiomyopathy
   C. Vessel disorders
VIII. Neuroanatomy and Neurophysiology
   A. Neuronal physiology
   B. Spinal nerves and reflexes
   C. Autonomic Nervous System
   D. Lesions of the peripheral nervous system and descending pathways
   E. Cranial nerves and brainstem
   F. Cerebellum
   G. Hypothalamus and basal nuclei
   H. Cerebral cortex, cerebrovascular accident, and epilepsy
   I. Neurologic tests and other pathologies
IX. Musculoskeletal pathology
   A. Skeletal developmental and bone diseases
   B. Classification and pathophysiology of fractures
   C. Joint diseases
   D. Muscle physiology
   E. Muscular atrophy and dystrophy
   F. Myositis and other muscular diseases
X. Respiratory Pathology
   A. Ventilatory disturbances
   B. Pathology of the lungs

EXPECTED LEARNER OUTCOMES:
The student will be able to:
A. Explain cellular pathology.
B. Describe the processes of inflammation and wound healing.
C. Explain normal and abnormal immune functions.
D. Relate neoplasia to normal cell growth and pathology.
E. Define and describe developmental and genetic disorders.
F. Explain hemostasis and hemodynamic disorders.
G. Explain pathologies of various organ systems.

COURSE COMPETENCIES:
A. Explain cellular pathology.
1. The learner will be able to compare and contrast normal cell function with abnormal cell function.
2. The learner will be able to describe various types of cell injury, adaptations, and cell death.

B. Describe the processes of inflammation and wound healing.
3. The learner will be able to explain the pathogenesis of inflammation.
4. The learner will be able to identify various types of inflammations.
5. The learner will be able to identify and explain principles of wound healing.

C. Explain normal and abnormal immune functions.
6. The learner will be able to distinguish the various cells which participate in immune responses.
7. The learner will be able to compare and contrast physical and chemical immune responses, and specific and non-specific immune responses.
8. The learner will be able to distinguish various hypersensitivities and immune dysfunctions.

D. Relate neoplasia to normal cell growth and pathology.
9. The learner will be able to compare and contrast the biology, symptomology, and biochemistry of normal cells with neoplastic cells.
10. The learner will be able to explain how neoplasia is classified.

E. Define and describe developmental and genetic disorders.
11. The learner will be able to explain the pathogenesis and symptomology of selected developmental and genetic disorders.

F. Explain hemostasis and hemodynamic disorders.
12. The learner will be able to describe the physiology of blood.
13. The learner will be able to explain the physiology of normal hemostasis, and compare this with various hemodynamic disorders.
14. The learner will be able to explain the pathophysiology of edema and hyperemia.
15. The learner will be able to explain the pathophysiology of shock.
16. The learner will be able to describe various types and causes of thrombosis and infarction.

G. Explain pathologies of various organ systems.
17. The learner will be able to distinguish between various heart diseases and cardiomyopathies.
18. The learner will be able to identify various disorders of blood vessels.
19. The learner will be able to explain the anatomy and physiology of normal neurons.
20. The learner will be able to compare and contrast spinal reflexes of medical importance.
21. The learner will be able to explain the functions of the autonomic nervous system.
22. The learner will be able to differentiate lesions of the peripheral nervous system and descending pathways.
23. The learner will be able to explain the functions of cranial nerves, the brainstem, cerebellum, hypothalamus, and basal nuclei.
24. The learner will be able to describe selected pathologies of these structures.
25. The learner will be able to explain the function of the cerebral cortex and relevant pathology.
26. The learner will be able to distinguish between selected skeletal and bone diseases.
27. The learner will be able to explain how fractures are classified and the general fracture healing process.
28. The learner will be able to explain the pathology of joint diseases of clinical significance.
29. The learner will be able to describe normal muscle physiology and relate it to muscular atrophy and dystrophy.
30. The learner will be able to explain the pathology of myositis and other muscular diseases of clinical significance.
31. The learner will be able to describe the pathology of ventilatory disturbances and other pulmonary diseases of clinical significance.

ASSESSMENT OF LEARNER OUTCOMES: The student may be evaluated by various means. These may include, but are not limited to: written evaluations, oral evaluations, and other written or oral assignments or projects.

SPECIAL NOTES:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

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